Gall MasterID	Item	PreviousItem	Rev2 Item	Rev1 Item	StructureAndOrComponent	Material	Environment	AgingEffect_Mechanism	AMP	FurtherEvaluation	Type
748	EP-17		V.F.EP-17	V.F-11(EP-17)	Piping, piping components, and piping elements	Nickel alloy	Air – indoor, uncontrolled (External)	None	None	No	BWR/PWR
768	E-13		V.D1.E-13	V.D1-27(E-13)	Piping, piping components, and piping elements	Stainless steel	Treated water (borated)	Cumulative fatigue damage #*#due to fatigue	Fatigue is a time-limited aging analysis (TLAA) to be evaluated for the period of extended operation. See the SRP, Section 4.3 “Metal Fatigue,” for acceptable methods for meeting the requirements of 10 CFR 54.21(c)(1).	Yes, TLAA	PWR
703	SP-11		VIII.I.SP-11	VIII.I-9(SP-11)	Piping, piping components, and piping elements	Nickel alloy	Air – indoor, uncontrolled (External)	None	None	No	BWR/PWR
704	SP-12		VIII.I.SP-12	VIII.I-10(SP-12)	Piping, piping components, and piping elements	Stainless steel	Air – indoor, uncontrolled (External)	None	None	No	BWR/PWR
705	SP-13		VIII.I.SP-13	VIII.I-11(SP-13)	Piping, piping components, and piping elements	Stainless steel	Concrete	None	None	No	BWR/PWR
706	SP-15		VIII.I.SP-15	VIII.I-12(SP-15)	Piping, piping components, and piping elements	Stainless steel	Gas	None	None	No	BWR/PWR
745	EP-14		V.F.EP-14	V.F-1(EP-14)	Ducting, piping, and components	Galvanized steel	Air – indoor, controlled (External)	None	None	No	BWR/PWR
701	SP-1		VIII.I.SP-1	VIII.I-13(SP-1)	Piping, piping components, and piping elements	Steel	Air – indoor controlled (External)	None	None	No	BWR/PWR
747	EP-16		V.F.EP-16	V.F-7(EP-16)	Piping elements	Glass	Lubricating oil	None	None	No	BWR/PWR

700	R-85	IV.A2.R-85	IV.A2-22(R-85)	Vessel shell: upper shell; intermediate shell; lower shell (including beltline welds)	SA508-Cl 2 forgings clad (with stainless steel) using a high-heat-input welding process	Reactor coolant	Crack growth #*#due to cyclic loading	Growth of intergranular separations (underclad cracks) in low-alloy steel forging heat affected zone under austenitic stainless steel cladding is a time-limited aging analysis (TLAA) to be evaluated for the period of extended operation for all the SA 508-Cl 2 forgings where the cladding was deposited with a high heat input welding process. The methodology for evaluating an underclad flaw is in accordance with the current well-established flaw evaluation procedure and criterion in the ASME Section XI Code. See the Standard Review Plan, Section 4.7, “Other Plant-Specific Time-Limited Aging Analysis,” for generic guidance for meeting the requirements of 10 CFR 54.21(c).	Yes, TLAA	PWR
759	E-04	V.D2.E-04	V.D2-1(E-04)	Drywell and suppression chamber spray system (internal surfaces): flow orifice; spray nozzles	Steel	Air – indoor, uncontrolled (Internal)	Loss of material #*#due to general corrosion; fouling that leads to corrosion	A plant-specific aging management program is to be evaluated	Yes, plant-specific	BWR
761	E-07	V.D2.E-07	V.D2-31(E-07)	Piping, piping components, and piping elements	Steel	Steam	Wall thinning #*#due to flow-accelerated corrosion	Chapter XI.M17, “Flow-Accelerated Corrosion”	No	BWR
763	E-09	V.D2.E-09	V.D2-34(E-09)	Piping, piping components, and piping elements	Steel	Treated water	Wall thinning #*#due to flow-accelerated corrosion	Chapter XI.M17, “Flow-Accelerated Corrosion”	No	BWR
764	E-10	V.D2.E-10	V.D2-32(E-10)	Piping, piping components, and piping elements	Steel	Treated water	Cumulative fatigue damage #*#due to fatigue	Fatigue is a time-limited aging analysis (TLAA) to be evaluated for the period of extended operation. See the SRP, Section 4.3 “Metal Fatigue,” for acceptable methods for meeting the requirements of 10 CFR 54.21(c)(1).	Yes, TLAA	BWR

765	E-11	V.D2.E-11	V.D2-20(E-11)	Piping, piping components, and piping elements	Cast austenitic stainless steel	Treated water >250°C (>482°F)	Loss of fracture toughness #*#due to thermal aging embrittlement	Chapter XI.M12, "Thermal Aging Embrittlement of Cast Austenitic Stainless Steel (CASS)"	No	BWR
766	E-12	V.A.E-12	V.A-28(E-12)	Piping, piping components, and piping elements; tanks	Stainless steel	Treated water (borated) >60°C (>140°F)	Cracking #*#due to stress corrosion cracking	Chapter XI.M2, "Water Chemistry"	No	PWR
846	EP-43	V.A.EP-43	V.A-3(EP-43)	Encapsulation components	Steel	Air with borated water leakage (Internal)	Loss of material #*#due to general, pitting, crevice, and boric acid corrosion	Chapter XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components"	No	PWR
746	EP-15	V.F.EP-15	V.F-6(EP-15)	Piping elements	Glass	Air – indoor, uncontrolled (External)	None	None	No	BWR/PWR
684	R-70	IV.A1.R-70	IV.A1-6(R-70)	Pressure vessel support skirt attachment welds	Steel	Air – indoor, uncontrolled	Cumulative fatigue damage #*#due to fatigue	Fatigue is a time-limited aging analysis (TLAA) to be evaluated for the period of extended operation. See the SRP, Section 4.3 "Metal Fatigue," for acceptable methods for meeting the requirements of 10 CFR 54.21(c)(1).	Yes, TLAA	BWR
670	C-45	II.B2.1.C-45	II.B2.1-4(C-45)	Suppression pool shell; unbraced downcomers	Steel; stainless steel; dissimilar metal welds	Air – indoor, uncontrolled	Cumulative fatigue damage #*#due to fatigue #*#(Only if CLB fatigue analysis exists)	Fatigue is a time-limited aging analysis (TLAA) to be evaluated for the period of extended operation. See the SRP, Section 4.6, "Containment Liner Plate and Penetration Fatigue Analysis" for acceptable methods for meeting the requirements of 10 CFR 54.21(c)(1).	Yes, TLAA	BWR

675	C-48	II.B2.2.C-48	II.B2.2-14(C-48)	Steel elements: vent header; downcomers	Steel; stainless steel	Air – indoor, uncontrolled or Treated water	Cumulative fatigue damage #*#due to fatigue #*#(Only if CLB fatigue analysis exists)	Fatigue is a time-limited aging analysis (TLAA) to be evaluated for the period of extended operation. See the SRP, Section 4.6, "Containment Liner Plate and Penetration Fatigue Analysis" for acceptable methods for meeting the requirements of 10 CFR 54.21(c)(1).	Yes, TLAA	BWR
676	C-49	II.B1.2.C-49	II.B1.2-10(C-49)	Steel elements: suppression chamber (torus) liner (interior surface)	Steel; stainless steel	Air – indoor, uncontrolled or Treated water	Loss of material #*#due to general (steel only), pitting, and crevice corrosion	Chapter XI.S1, "ASME Section XI, Subsection IWE," and #*#Chapter XI.S4, "10 CFR Part 50, Appendix J"	No	BWR
677	C-49	II.B2.2.C-49	II.B2.2-12(C-49)	Steel elements: suppression chamber (torus) liner (interior surface)	Steel; stainless steel	Air – indoor, uncontrolled or Treated water	Loss of material #*#due to general (steel only), pitting, and crevice corrosion	Chapter XI.S1, "ASME Section XI, Subsection IWE," and #*#Chapter XI.S4, "10 CFR Part 50, Appendix J"	No	BWR
680	E-01	V.D1.E-01	V.D1-15(E-01)	Partially-encased tanks with breached moisture barrier	Stainless steel	Raw water	Loss of material #*#due to pitting and crevice corrosion	A plant-specific aging management program is to be evaluated for pitting and crevice corrosion of tank bottom because moisture and water can egress under the tank due to cracking of the perimeter seal from weathering.	Yes, plant-specific	PWR
681	E-02	V.E.E-02	V.E-6(E-02)	Closure bolting	Steel	Air with steam or water leakage	Loss of material #*#due to general corrosion	Chapter XI.M18, "Bolting Integrity"	No	BWR/PWR
702	SP-10	VIII.I.SP-10	VIII.I-6(SP-10)	Piping elements	Glass	Lubricating oil	None	None	No	BWR/PWR
683	R-69	IV.A1.R-69	IV.A1-5(R-69)	Penetrations: control rod drive stub tubes; instrumentation; jet pump instrument; standby liquid control; flux monitor; drain line	Stainless steel; nickel alloy	Reactor coolant	Cracking #*#due to stress corrosion cracking, intergranular stress corrosion cracking, cyclic loading	Chapter XI.M8, "BWR Penetrations," and #*#Chapter XI.M2, "Water Chemistry"	No	BWR

782	E-21	V.A.E-21	V.A-15(E-21)	Heat exchanger tubes	Stainless steel	Raw water	Reduction of heat transfer #*#due to fouling	Chapter XI.M20, "Open-Cycle Cooling Water System"	No	PWR
685	R-70	IV.A2.R-70	IV.A2-20(R-70)	Pressure vessel support skirt attachment welds	Steel	Air – indoor, uncontrolled	Cumulative fatigue damage #*#due to fatigue	Fatigue is a time-limited aging analysis (TLAA) to be evaluated for the period of extended operation. See the SRP, Section 4.3 “Metal Fatigue,” for acceptable methods for meeting the requirements of 10 CFR 54.21(c)(1).	Yes, TLAA	PWR
689	R-74	IV.A2.R-74	IV.A2-5(R-74)	Closure head: vessel flange leak detection line	Stainless steel	Air with reactor coolant leakage (Internal) or reactor coolant	Cracking #*#due to stress corrosion cracking	A plant-specific aging management program is to be evaluated because existing programs may not be capable of mitigating or detecting crack initiation and growth due to SCC in the vessel flange leak detection line	Yes, plant-specific	PWR
692	R-77	IV.A2.R-77	IV.A2-10(R-77)	Control rod drive head penetration: pressure housing	Cast austenitic stainless steel	Reactor coolant >250°C (>482°F)	Loss of fracture toughness #*#due to thermal aging embrittlement	Chapter XI.M12, "Thermal Aging Embrittlement of Cast Austenitic Stainless Steel (CASS)"	No	PWR
693	R-78	IV.A2.R-78	IV.A2-6(R-78)	Control rod drive head penetration: flange bolting	Stainless steel	Air with reactor coolant leakage	Cracking #*#due to stress corrosion cracking	Chapter XI.M18, "Bolting Integrity"	No	PWR
694	R-79	IV.A2.R-79	IV.A2-7(R-79)	Control rod drive head penetration: flange bolting	Stainless steel	Air with reactor coolant leakage	Loss of material #*#due to wear	Chapter XI.M18, "Bolting Integrity"	No	PWR

696	R-81	IV.A2. R-81	IV.A2-16(R-81)	Nozzles: inlet; outlet; safety injection	Steel (with stainless steel or nickel-alloy cladding)	Reactor coolant and neutron flux	Loss of fracture toughness #*#due to neutron irradiation embrittlement	Neutron irradiation embrittlement is a TLAA evaluated for extended operation for all ferritic materials with a neutron fluence greater than 1E17 n/cm2 (E >1 MeV) at the end of the license renewal term#*#The TLAA is to evaluate the impact of neutron embrittlement on: (a) the RTPTS value based on the requirements in 10 CFR 50.61, (b) the adjusted reference temperature values used for calculation of the plant's pressure-temperature limits, and (c) the Charpy upper shelf energy or the equivalent margins analyses performed in accordance with 10 CFR Part 50, Appendix G requirements. The applicant may choose to demonstrate that the materials in the inlet, outlet, and safety injection nozzles are not controlling for the TLAA evaluations.	Yes, TLAA	PWR

699	R-84	IV.A2. R-84	IV.A2-23(R-84)	Vessel shell: upper shell; intermediate shell; lower shell (including beltline welds)	Steel (with stainless steel or nickel-alloy cladding)	Reactor coolant and neutron flux	Loss of fracture toughness #*#due to neutron irradiation embrittlement	Neutron irradiation embrittlement is a TLAA evaluated for extended operation for all ferritic materials with a neutron fluence greater than 1E17 n/cm2 (E >1 MeV) at the end of the license renewal term. The TLAA is to evaluate the impact of neutron embrittlement on: (a) the RTPTS value based on the requirements in 10 CFR 50.61, (b) the adjusted reference temperature values used for calculation of the plant's pressure-temperature limits, and (c) the Charpy upper shelf energy or the equivalent margins analyses performed in accordance with 10 CFR Part 50, Appendix G requirements. See the Standard Review Plan, Section 4.2 "Reactor Vessel Neutron Embrittlement" for acceptable methods for meeting the requirements of 10 CFR 54.21(c).	Yes, TLAA	PWR
682	E-03	V.E.E-03	V.E-3(E-03)	Closure bolting	Steel, high-strength	Air with steam or water leakage	Cracking #*#due to cyclic loading, stress corrosion cracking	Chapter XI.M18, "Bolting Integrity"	No	BWR/PWR
812	E-46	V.E.E-46	V.E-10(E-46)	External surfaces	Steel	Condensation (External)	Loss of material #*#due to general corrosion	Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components"	No	BWR/PWR
767	E-12	V.D1.E-12	V.D1-31(E-12)	Piping, piping components, and piping elements; tanks	Stainless steel	Treated water (borated) >60°C (>140°F)	Cracking #*#due to stress corrosion cracking	Chapter XI.M2, "Water Chemistry"	No	PWR
804	E-38	V.D1.E-38	V.D1-33(E-38)	Safety injection tank (accumulator)	Steel (with stainless steel or nickel-alloy cladding)	Treated water (borated) >60°C (>140°F)	Cracking #*#due to stress corrosion cracking	Chapter XI.M2, "Water Chemistry"	No	PWR

805	E-40	V.B.E-40	V.B-2(E-40)	Ducting, closure bolting	Steel	Air – indoor, uncontrolled (External)	Loss of material #*#due to general corrosion	Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components"	No	BWR
806	E-41	V.E.E-41	V.E-2(E-41)	Bolting	Steel	Air with borated water leakage	Loss of material #*#due to boric acid corrosion	Chapter XI.M10, “Boric Acid Corrosion”	No	PWR
808	E-43	V.A.E-43	V.A-18(E-43)	Motor cooler	Gray cast iron	Treated water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	PWR
809	E-43	V.D1.E-43	V.D1-13(E-43)	Motor cooler	Gray cast iron	Treated water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	PWR
802	E-35	V.C.E-35	V.C-1(E-35)	Containment isolation piping and components (External surfaces)	Steel	Air – indoor, uncontrolled (External)	Loss of material #*#due to general corrosion	Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components"	No	BWR/PWR
811	E-45	V.E.E-45	V.E-8(E-45)	External surfaces	Steel	Air – outdoor (External)	Loss of material #*#due to general corrosion	Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components"	No	BWR/PWR
801	E-34	V.C.E-34	V.C-3(E-34)	Containment isolation piping and components (Internal surfaces)	Stainless steel	Raw water	Loss of material #*#due to pitting, crevice, and microbiologically-influenced corrosion; fouling that leads to corrosion	Chapter XI.M20, "Open-Cycle Cooling Water System"	No	BWR/PWR
813	E-47	V.D1.E-47	V.D1-16(E-47)	Piping, piping components, and piping elements	Cast austenitic stainless steel	Treated water (borated) >250°C (>482°F)	Loss of fracture toughness #*#due to thermal aging embrittlement	Chapter XI.M12, "Thermal Aging Embrittlement of Cast Austenitic Stainless Steel (CASS)"	No	PWR
815	EP-10	V.F.EP-10	V.F-3(EP-10)	Piping, piping components, and piping elements	Copper alloy	Air – indoor, uncontrolled (External)	None	None	No	BWR/PWR

816	EP-12	V.F.EP-12	V.F-5(EP-12)	Piping, piping components, and piping elements	Copper alloy <15% Zn	Air with borated water leakage	None	None	No	BWR/PWR
839	EP-4	V.F.EP-4	V.F-16(EP-4)	Piping, piping components, and piping elements	Steel	Air – indoor, controlled (External)	None	None	No	BWR/PWR
843	EP-41	V.A.EP-41	V.A-27(EP-41)	Piping, piping components, and piping elements; tanks	Stainless steel	Treated water (borated)	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M2, “Water Chemistry”	No	PWR
844	EP-41	V.D1.EP-41	V.D1-30(EP-41)	Piping, piping components, and piping elements; tanks	Stainless steel	Treated water (borated)	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M2, “Water Chemistry”	No	PWR

485	R-62	IV.A1.R-62	IV.A1-13(R-62)	Vessel shell: intermediate beltline shell; beltline welds	Steel (with or without stainless steel cladding)	Reactor coolant and neutron flux	Loss of fracture toughness #*#due to neutron irradiation embrittlement	Neutron irradiation embrittlement is a time-dependent aging mechanism evaluated for extended operation for all ferritic materials that have a neutron fluence >1E17 n/cm2 (E >1 MeV) at the end of license renewal. Aspects may involve a TLAA. #*#In accordance with approved BWRVIP-74, the TLAA evaluates the impact of neutron embrittlement on: (a) adjusted reference temperature values used for calculation of the plant's pressure-temperature limits, (b) need for inservice inspection of circumferential welds, and (c) Charpy upper shelf energy or the equivalent margins analyses performed in accordance with 10 CFR Part 50, Appendix G. Additionally, the applicant is to monitor axial beltline weld embrittlement. One acceptable method is to determine that the mean RTNDT of the axial beltline welds at the end of the extended period of operation is less than the value specified by the staff in its March 7, 2000 letter (ADAMS ML031430372). See the Standard Review Plan, Section 4.2 "Reactor Vessel Neutron Embrittlement" for acceptable methods for meeting the requirements of 10 CFR 54.21(c).	Yes, TLAA	BWR
810	E-44	V.E.E-44	V.E-7(E-44)	External surfaces	Steel	Air – indoor, uncontrolled (External)	Loss of material #*#due to general corrosion	Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components"	No	BWR/PWR
791	E-26	V.D2.E-26	V.D2-2(E-26)	Ducting, piping, and components (External surfaces)	Steel	Air – indoor, uncontrolled (External)	Loss of material #*#due to general corrosion	Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components"	No	BWR
783	E-21	V.D1.E-21	V.D1-11(E-21)	Heat exchanger tubes	Stainless steel	Raw water	Reduction of heat transfer #*#due to fouling	Chapter XI.M20, "Open-Cycle Cooling Water System"	No	PWR

784	E-21	V.D2.E-21	V.D2-12(E-21)	Heat exchanger tubes	Stainless steel	Raw water	Reduction of heat transfer #*#due to fouling	Chapter XI.M20, "Open-Cycle Cooling Water System"	No	BWR
785	E-22	V.C.E-22	V.C-5(E-22)	Containment isolation piping and components (Internal surfaces)	Steel	Raw water	Loss of material #*#due to general, pitting, crevice, and microbiologically-influenced corrosion; fouling that leads to corrosion	Chapter XI.M20, "Open-Cycle Cooling Water System"	No	BWR/PWR
786	E-23	V.D2.E-23	V.D2-15(E-23)	Heat exchanger tubes	Steel	Raw water	Reduction of heat transfer #*#due to fouling	Chapter XI.M20, "Open-Cycle Cooling Water System"	No	BWR
787	E-24	V.D1.E-24	V.D1-14(E-24)	Orifice (miniflow recirculation)	Stainless steel	Treated water (borated)	Loss of material #*#due to erosion	A plant-specific aging management program is to be evaluated for erosion of the orifice due to extended use of the centrifugal HPSI pump for normal charging. See LER 50-275/94-023 for evidence of erosion.	Yes, plant-specific	PWR
788	E-25	V.B.E-25	V.B-1(E-25)	Ducting and components (Internal surfaces)	Steel	Air – indoor, uncontrolled (Internal)	Loss of material #*#due to general corrosion	Chapter XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components"	No	BWR
803	E-37	V.D2.E-37	V.D2-29(E-37)	Piping, piping components, and piping elements	Stainless steel	Treated water >60°C (>140°F)	Cracking #*#due to stress corrosion cracking, intergranular stress corrosion cracking	Chapter XI.M7, “BWR Stress Corrosion Cracking,” and #*#Chapter XI.M2, “Water Chemistry”	No	BWR
790	E-26	V.B.E-26	V.B-3(E-26)	Ducting, piping, and components (External surfaces)	Steel	Air – indoor, uncontrolled (External)	Loss of material #*#due to general corrosion	Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components"	No	BWR
648	EP-29	V.F.EP-29	V.F-10(EP-29)	Piping elements	Glass	Treated water	None	None	No	BWR/PWR

792	E-27	V.D2.E-27	V.D2-17(E-27)	Piping and components (Internal surfaces)	Steel	Condensation (Internal)	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components"	No	BWR
793	E-28	V.A.E-28	V.A-4(E-28)	External surfaces	Steel	Air with borated water leakage	Loss of material #*#due to boric acid corrosion	Chapter XI.M10, “Boric Acid Corrosion”	No	PWR
794	E-28	V.D1.E-28	V.D1-1(E-28)	External surfaces	Steel	Air with borated water leakage	Loss of material #*#due to boric acid corrosion	Chapter XI.M10, “Boric Acid Corrosion”	No	PWR
795	E-28	V.E.E-28	V.E-9(E-28)	External surfaces	Steel	Air with borated water leakage	Loss of material #*#due to boric acid corrosion	Chapter XI.M10, “Boric Acid Corrosion”	No	PWR
796	E-29	V.A.E-29	V.A-19(E-29)	Piping and components (Internal surfaces)	Steel	Air – indoor, uncontrolled (Internal)	Loss of material #*#due to general corrosion	Chapter XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components"	No	PWR
797	E-29	V.D2.E-29	V.D2-16(E-29)	Piping and components (Internal surfaces)	Steel	Air – indoor, uncontrolled (Internal)	Loss of material #*#due to general corrosion	Chapter XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components"	No	BWR
798	E-30	V.C.E-30	V.C-2(E-30)	Containment isolation piping and components (External surfaces)	Steel	Condensation (External)	Loss of material #*#due to general corrosion	Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components"	No	BWR/PWR
789	E-26	V.A.E-26	V.A-1(E-26)	Ducting, piping, and components (External surfaces)	Steel	Air – indoor, uncontrolled (External)	Loss of material #*#due to general corrosion	Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components"	No	PWR
566	R-46	IV.D1.R-46	IV.D1-21(R-46)	Tubes and sleeves	Nickel alloy	Reactor coolant and secondary feedwater/steam	Cumulative fatigue damage #*#due to fatigue	Fatigue is a time-limited aging analysis (TLAA) to be evaluated for the period of extended operation. See the SRP, Section 4.3 “Metal Fatigue,” for acceptable methods for meeting the requirements of 10 CFR 54.21(c)(1).	Yes, TLAA	PWR
650	EP-30	V.F.EP-30	V.F-9(EP-30)	Piping elements	Glass	Treated water (borated)	None	None	No	BWR/PWR

556	R-38	IV.D2. R-38	IV.D2-7(R-38)	Steam generator components: feedwater (FW) and auxiliary FW nozzles and safe ends; steam nozzles and safe ends	Steel	Secondary feedwater or steam	Wall thinning #*#due to flow-accelerated corrosion	Chapter XI.M17, “Flow-Accelerated Corrosion”	No	PWR
557	R-39	IV.D1. R-39	IV.D1-13(R-39)	Steam generator feedwater impingement plate and support	Steel	Secondary feedwater	Loss of material #*#due to erosion	A plant-specific aging management program is to be evaluated	Yes, plant-specific	PWR
561	R-42	IV.D1. R-42	IV.D1-17(R-42)	Steam generator structural: tube support plates	Steel	Secondary feedwater or steam	Ligament cracking #*#due to corrosion	Chapter XI.M19, “Steam Generators,” and #*#Chapter XI.M2, “Water Chemistry” for PWR secondary water	No	PWR
562	R-42	IV.D2. R-42	IV.D2-11(R-42)	Steam generator structural: tube support plates	Steel	Secondary feedwater or steam	Ligament cracking #*#due to corrosion	Chapter XI.M19, “Steam Generators,” and #*#Chapter XI.M2, “Water Chemistry” for PWR secondary water	No	PWR
563	R-43	IV.D1. R-43	IV.D1-19(R-43)	Tubes	Nickel alloy	Secondary feedwater or steam	Changes in dimension ("denting") #*#due to corrosion of carbon steel tube support plate	Chapter XI.M19, “Steam Generators,” and #*#Chapter XI.M2, “Water Chemistry” for PWR secondary water	No	PWR
554	R-36	IV.D2. R-36	IV.D2-9(R-36)	Steam generator components: secondary side nozzles (vent, drain, and instrumentation)	Nickel alloy	Secondary feedwater or steam	Cracking #*#due to stress corrosion cracking	Chapter XI.M2, "Water Chemistry," and #*#Chapter XI.M32, "One-Time Inspection," or #*#Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD.”	No	PWR
565	R-44	IV.D2. R-44	IV.D2-14(R-44)	Tubes and sleeves	Nickel alloy	Reactor coolant	Cracking #*#due to primary water stress corrosion cracking	Chapter XI.M19, “Steam Generators,” and #*#Chapter XI.M2, “Water Chemistry” for PWR secondary water	No	PWR

552	R-34	IV.D1. R-34	IV.D1-12(R-34)	Steam generator components: upper and lower shell; transition cone	Steel	Secondary feedwater or steam	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for Class 2 components, and #*#Chapter XI.M2, “Water Chemistry” for PWR secondary water #*#As noted in NRC IN 90-04, if general and pitting corrosion of the shell exists, Chapter XI.M1 methods may not be sufficient to detect general and pitting corrosion (and the resulting corrosion-fatigue cracking), and additional inspection procedures are to be developed. This issue is limited to Westinghouse Model 44 and 51 Steam Generators where a high stress region exists at the shell to transition cone weld.	Yes, detection of aging effects is to be evaluated	PWR
567	R-46	IV.D2. R-46	IV.D2-15(R-46)	Tubes and sleeves	Nickel alloy	Reactor coolant and secondary feedwater/steam	Cumulative fatigue damage #*#due to fatigue	Fatigue is a time-limited aging analysis (TLAA) to be evaluated for the period of extended operation. See the SRP, Section 4.3 “Metal Fatigue,” for acceptable methods for meeting the requirements of 10 CFR 54.21(c)(1).	Yes, TLAA	PWR
570	C-07	II.A1.C-07	II.A1-8(C-07)	Concrete: foundation; subfoundation	Concrete; porous concrete	Water – flowing	Reduction of foundation strength and cracking #*#due to differential settlement and erosion of porous concrete subfoundation	Chapter XI.S6, “Structures Monitoring” #*#If a de-watering system is relied upon for control of erosion of cement from porous concrete subfoundations, then the licensee is to ensure proper functioning of the de-watering system through the period of extended operation.	Yes, if a de-watering system is relied upon to control settlement	PWR

571	C-07	II.A2.C-07	II.A2-8(C-07)	Concrete: foundation; subfoundation	Concrete; porous concrete	Water – flowing	Reduction of foundation strength and cracking #*#due to differential settlement and erosion of porous concrete subfoundation	Chapter XI.S6, “Structures Monitoring” #*#If a de-watering system is relied upon for control of erosion of cement from porous concrete subfoundations, then the licensee is to ensure proper functioning of the de-watering system through the period of extended operation.	Yes, if a de-watering system is relied upon to control settlement	PWR
572	C-07	II.B1.2.C-07	II.B1.2-7(C-07)	Concrete: foundation; subfoundation	Concrete; porous concrete	Water – flowing	Reduction of foundation strength and cracking #*#due to differential settlement and erosion of porous concrete subfoundation	Chapter XI.S6, “Structures Monitoring” #*#If a de-watering system is relied upon for control of erosion of cement from porous concrete subfoundations, then the licensee is to ensure proper functioning of the de-watering system through the period of extended operation.	Yes, if a de-watering system is relied upon to control settlement	BWR
573	C-07	II.B2.2.C-07	II.B2.2-7(C-07)	Concrete: foundation; subfoundation	Concrete; porous concrete	Water – flowing	Reduction of foundation strength and cracking #*#due to differential settlement and erosion of porous concrete subfoundation	Chapter XI.S6, “Structures Monitoring” #*#If a de-watering system is relied upon for control of erosion of cement from porous concrete subfoundations, then the licensee is to ensure proper functioning of the de-watering system through the period of extended operation.	Yes, if a de-watering system is relied upon to control settlement	BWR
574	C-07	II.B3.1.C-07	II.B3.1-7(C-07)	Concrete: foundation; subfoundation	Concrete; porous concrete	Water – flowing	Reduction of foundation strength and cracking #*#due to differential settlement and erosion of porous concrete subfoundation	Chapter XI.S6, “Structures Monitoring” #*#If a de-watering system is relied upon for control of erosion of cement from porous concrete subfoundations, then the licensee is to ensure proper functioning of the de-watering system through the period of extended operation.	Yes, if a de-watering system is relied upon to control settlement	BWR

575	C-07	II.B3.2.C-07	II.B3.2-8(C-07)	Concrete: foundation; subfoundation	Concrete; porous concrete	Water – flowing	Reduction of foundation strength and cracking #*#due to differential settlement and erosion of porous concrete subfoundation	Chapter XI.S6, “Structures Monitoring” #*#If a de-watering system is relied upon for control of erosion of cement from porous concrete subfoundations, then the licensee is to ensure proper functioning of the de-watering system through the period of extended operation.	Yes, if a de-watering system is relied upon to control settlement	BWR
564	R-44	IV.D1.R-44	IV.D1-20(R-44)	Tubes and sleeves	Nickel alloy	Reactor coolant	Cracking #*#due to primary water stress corrosion cracking	Chapter XI.M19, “Steam Generators,” and #*#Chapter XI.M2, “Water Chemistry” for PWR secondary water	No	PWR
535	R-08	IV.C2.R-08	IV.C2-6(R-08)	Class 1 pump casings; valve bodies and bonnets	Cast austenitic stainless steel	Reactor coolant >250°C (>482°F)	Loss of fracture toughness #*#due to thermal aging embrittlement	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for Class 1 components #*#For pump casings and valve bodies, screening for susceptibility to thermal aging is not necessary. The ASME Section XI inspection requirements are sufficient for managing the effects of loss of fracture toughness due to thermal aging embrittlement of CASS pump casings and valve bodies.	No	PWR
487	R-64	IV.A1.R-64	IV.A1-12(R-64)	Vessel shell: attachment welds	Stainless steel; nickel alloy	Reactor coolant	Cracking #*#due to stress corrosion cracking, intergranular stress corrosion cracking	Chapter XI.M4, “BWR Vessel ID Attachment Welds,” and #*#Chapter XI.M2, “Water Chemistry” for BWR water	No	BWR
515	TP-3	III.B1.1.TP-3	III.B1.1-8(TP-3)	Support members; welds; bolted connections; support anchorage to building structure	Galvanized steel; aluminum	Air with borated water leakage	Loss of material #*#due to boric acid corrosion	Chapter XI.M10, “Boric Acid Corrosion”	No	PWR

516	TP-3	III.B1-2.TP-3	III.B1.2-6(TP-3)	Support members; welds; bolted connections; support anchorage to building structure	Galvanized steel; aluminum	Air with borated water leakage	Loss of material #*#due to boric acid corrosion	Chapter XI.M10, “Boric Acid Corrosion”	No	PWR
517	TP-3	III.B1.3.TP-3	III.B1.3-6(TP-3)	Support members; welds; bolted connections; support anchorage to building structure	Galvanized steel; aluminum	Air with borated water leakage	Loss of material #*#due to boric acid corrosion	Chapter XI.M10, “Boric Acid Corrosion”	No	PWR
518	TP-3	III.B2.TP-3	III.B2-6(TP-3)	Support members; welds; bolted connections; support anchorage to building structure	Galvanized steel; aluminum	Air with borated water leakage	Loss of material #*#due to boric acid corrosion	Chapter XI.M10, “Boric Acid Corrosion”	No	PWR
519	TP-3	III.B3.TP-3	III.B3-4(TP-3)	Support members; welds; bolted connections; support anchorage to building structure	Galvanized steel; aluminum	Air with borated water leakage	Loss of material #*#due to boric acid corrosion	Chapter XI.M10, “Boric Acid Corrosion”	No	PWR
555	R-37	IV.D1.R-37	IV.D1-5(R-37)	Pressure boundary and structural: steam nozzle and safe end; feedwater nozzle and safe end	Steel	Secondary feedwater or steam	Wall thinning #*#due to flow-accelerated corrosion	Chapter XI.M17, “Flow-Accelerated Corrosion”	No	PWR
534	R-08	IV.C1.R-08	IV.C1-3(R-08)	Class 1 pump casings; valve bodies and bonnets	Cast austenitic stainless steel	Reactor coolant >250°C (>482°F)	Loss of fracture toughness #*#due to thermal aging embrittlement	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for Class 1 components #*#For pump casings and valve bodies, screening for susceptibility to thermal aging is not necessary. The ASME Section XI inspection requirements are sufficient for managing the effects of loss of fracture toughness due to thermal aging embrittlement of CASS pump casings and valve bodies.	No	BWR

598	S-11	VIII.D1. S-11	VIII.D1-7(S-11)	Piping, piping components, and piping elements	Steel	Treated water	Cumulative fatigue damage #*#due to fatigue	Fatigue is a time-limited aging analysis (TLAA) to be evaluated for the period of extended operation. See the SRP, Section 4.3 “Metal Fatigue,” for acceptable methods for meeting the requirements of 10 CFR 54.21(c)(1).	Yes, TLAA	PWR
536	R-09	IV.C2. R-09	IV.C2-5(R-09)	Class 1 pump casings; valve bodies	Steel (with stainless steel cladding); stainless steel	Reactor coolant	Cracking #*#due to stress corrosion cracking	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for Class 1 components, and #*#Chapter XI.M2, “Water Chemistry”	No	PWR
537	R-10	IV.D1. R-10	IV.D1-2(R-10)	Closure bolting	Steel	Air with reactor coolant leakage	Cracking #*#due to stress corrosion cracking	Chapter XI.M18, "Bolting Integrity"	No	PWR
538	R-100	IV.B1. R-100	IV.B1-13(R-100)	Jet pump assemblies: thermal sleeve; inlet header; riser brace arm; holddown beams; inlet elbow; mixing assembly; diffuser castings	Stainless steel; nickel alloy	Reactor coolant	Cracking #*#due to stress corrosion cracking, intergranular stress corrosion cracking, irradiation-assisted stress corrosion cracking	Chapter XI.M9, “BWR Vessel Internals” for jet pump assembly, and #*#Chapter XI.M2, “Water Chemistry” for BWR water	No	BWR
542	R-104	IV.B1. R-104	IV.B1-8(R-104)	Fuel supports and control rod drive assemblies: control rod drive housing	Stainless steel	Reactor coolant	Cracking #*#due to stress corrosion cracking, intergranular stress corrosion cracking	Chapter XI.M9, “BWR Vessel Internals” for lower plenum, and #*#Chapter XI.M2, “Water Chemistry” for BWR water	No	BWR

543	R-105	IV.B1. R-105	IV.B1-10(R-105)	Instrumentation: Intermediate range monitor (IRM) dry tubes; source range monitor (SRM) dry tubes; incore neutron flux monitor guide tubes	Stainless steel	Reactor coolant	Cracking #*#due to stress corrosion cracking, intergranular stress corrosion cracking, irradiation-assisted stress corrosion cracking	Chapter XI.M9, “BWR Vessel Internals” for lower plenum, and #*#Chapter XI.M2, “Water Chemistry” for BWR water	No	BWR
550	R-33	IV.D1. R-33	IV.D1-11(R-33)	Steam generator components: top head; steam nozzle and safe end; upper and lower shell; feedwater (FW) and auxiliary FW nozzle and safe end; FW impingement plate and support	Steel	Secondary feedwater or steam	Cumulative fatigue damage #*#due to fatigue	Fatigue is a time-limited aging analysis (TLAA) to be evaluated for the period of extended operation. See the SRP, Section 4.3 “Metal Fatigue,” for acceptable methods for meeting the requirements of 10 CFR 54.21(c)(1).	Yes, TLAA	PWR
551	R-33	IV.D2. R-33	IV.D2-10(R-33)	Steam generator components: top head; steam nozzle and safe end; upper and lower shell; feedwater (FW) and auxiliary FW nozzle and safe end; FW impingement plate and support	Steel	Secondary feedwater or steam	Cumulative fatigue damage #*#due to fatigue	Fatigue is a time-limited aging analysis (TLAA) to be evaluated for the period of extended operation. See the SRP, Section 4.3 “Metal Fatigue,” for acceptable methods for meeting the requirements of 10 CFR 54.21(c)(1).	Yes, TLAA	PWR

530	R-05	IV.C2. R-05	IV.C2-3(R-05)	Class 1 piping, piping components, and piping elements	Cast austenitic stainless steel	Reactor coolant	Cracking #*#due to stress corrosion cracking	Monitoring and control of primary water chemistry in accordance with EPRI 1014986 or later revisions minimize the potential for SCC. Material selection according to NUREG-0313, Rev. 2 of ≤0.035% C and ≥7.5% ferrite reduces susceptibility to SCC. #*#For CASS components that do not meet either one of the above, a plant-specific aging management program is evaluated #*#The program is to include (a) adequate inspection methods to ensure detection of cracks, and (b) flaw evaluation methodology for CASS components that are susceptible to thermal aging embrittlement.	Yes, plant-specific	PWR
638	EP-20	V.F.EP-20	V.F-14(EP-20)	Piping, piping components, and piping elements	Stainless steel	Concrete	None	None	No	BWR/PWR
631	SP-2	VIII.I.SP-2	VIII.I-14(SP-2)	Piping, piping components, and piping elements	Steel	Concrete	None	None	No	BWR/PWR
2194	TP-48	III.B1.3.TP-48		High-strength structural bolting	Low-alloy steel, actual measured yield strength≥ 150 ksi (1,034 MPa)	Air – indoor, uncontrolled	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.S3, “ASME Section XI, Subsection IWF”	No	BWR/PWR

2193	TP-48	III.B1.2 .TP-48		High-strength structural bolting	Low-alloy steel, actual measured yield strength≥ 150 ksi (1,034 MPa)	Air – indoor, uncontrolled	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.S3, “ASME Section XI, Subsection IWF”	No	BWR/PWR
2192	TP-41	III.B3.TP-41		High-strength structural bolting	Low-alloy steel, actual measured yield strength≥ 150 ksi (1,034 MPa)	Air – indoor, uncontrolled	Cracking #*#due to stress corrosion cracking	Chapter XI.S3, “ASME Section XI, Subsection IWF”	No	BWR/PWR
2191	TP-41	III.B2.TP-41		High-strength structural bolting	Low-alloy steel, actual measured yield strength≥ 150 ksi (1,034 MPa)	Air – indoor, uncontrolled	Cracking #*#due to stress corrosion cracking	Chapter XI.S3, “ASME Section XI, Subsection IWF”	No	BWR/PWR
632	SP-23	VIII.I.SP-23	VIII.I-1(SP-23)	Piping, piping components, and piping elements	Aluminum	Gas	None	None	No	BWR/PWR
577	R-17	IV.D2.R-17	IV.D2-1(R-17)	External surfaces	Steel	Air with borated water leakage	Loss of material #*#due to boric acid corrosion	Chapter XI.M10, “Boric Acid Corrosion”	No	PWR
636	EP-19	V.F.EP-19	V.F-13(EP-19)	Piping, piping components, and piping elements	Stainless steel	Air with borated water leakage	None	None	No	BWR/PWR

621	S-30	VIII.H. S-30	VIII.H-9(S-30)	External surfaces	Steel	Air with borated water leakage	Loss of material #*#due to boric acid corrosion	Chapter XI.M10, “Boric Acid Corrosion”	No	PWR
639	EP-22	V.F.EP-22	V.F-15(EP-22)	Piping, piping components, and piping elements	Stainless steel	Gas	None	None	No	BWR/PWR
643	EP-27	V.A.EP-27	V.A-22(EP-27)	Piping, piping components, and piping elements	Copper alloy >15% Zn	Closed-cycle cooling water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	PWR
644	EP-27	V.B.EP-27	V.B-7(EP-27)	Piping, piping components, and piping elements	Copper alloy >15% Zn	Closed-cycle cooling water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR
645	EP-27	V.D1.EP-27	V.D1-19(EP-27)	Piping, piping components, and piping elements	Copper alloy >15% Zn	Closed-cycle cooling water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	PWR
646	EP-27	V.D2.EP-27	V.D2-23(EP-27)	Piping, piping components, and piping elements	Copper alloy >15% Zn	Closed-cycle cooling water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR
647	EP-28	V.F.EP-28	V.F-8(EP-28)	Piping elements	Glass	Raw water	None	None	No	BWR/PWR
850	EP-52	V.D1.EP-52	V.D1-20(EP-52)	Piping, piping components, and piping elements	Gray cast iron	Closed-cycle cooling water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	PWR
635	EP-18	V.F.EP-18	V.F-12(EP-18)	Piping, piping components, and piping elements	Stainless steel	Air – indoor, uncontrolled (External)	None	None	No	BWR/PWR
610	S-16	VIII.E. S-16	VIII.E-35(S-16)	Piping, piping components, and piping elements	Steel	Treated water	Wall thinning #*#due to flow-accelerated corrosion	Chapter XI.M17, “Flow-Accelerated Corrosion”	No	BWR/PWR

649	EP-3	V.F.EP-3	V.F-2(EP-3)	Piping, piping components, and piping elements	Aluminum	Air – indoor, uncontrolled (Internal/External)	None	None	No	BWR/PWR
599	S-11	VIII.D2.S-11	VIII.D2-6(S-11)	Piping, piping components, and piping elements	Steel	Treated water	Cumulative fatigue damage #*#due to fatigue	Fatigue is a time-limited aging analysis (TLAA) to be evaluated for the period of extended operation. See the SRP, Section 4.3 “Metal Fatigue,” for acceptable methods for meeting the requirements of 10 CFR 54.21(c)(1).	Yes, TLAA	BWR
600	S-11	VIII.G.S-11	VIII.G-37(S-11)	Piping, piping components, and piping elements	Steel	Treated water	Cumulative fatigue damage #*#due to fatigue	Fatigue is a time-limited aging analysis (TLAA) to be evaluated for the period of extended operation. See the SRP, Section 4.3 “Metal Fatigue,” for acceptable methods for meeting the requirements of 10 CFR 54.21(c)(1).	Yes, TLAA	PWR
601	S-12	VIII.G.S-12	VIII.G-36(S-12)	Piping, piping components, and piping elements	Steel	Raw water	Loss of material #*#due to general, pitting, crevice, and microbiologically-influenced corrosion; fouling that leads to corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	PWR
604	S-15	VIII.A.S-15	VIII.A-17(S-15)	Piping, piping components, and piping elements	Steel	Steam	Wall thinning #*#due to flow-accelerated corrosion	Chapter XI.M17, “Flow-Accelerated Corrosion”	No	BWR/PWR
605	S-15	VIII.B1.S-15	VIII.B1-9(S-15)	Piping, piping components, and piping elements	Steel	Steam	Wall thinning #*#due to flow-accelerated corrosion	Chapter XI.M17, “Flow-Accelerated Corrosion”	No	PWR
606	S-15	VIII.B2.S-15	VIII.B2-4(S-15)	Piping, piping components, and piping elements	Steel	Steam	Wall thinning #*#due to flow-accelerated corrosion	Chapter XI.M17, “Flow-Accelerated Corrosion”	No	BWR

629	SP-18	VIII.B1. SP-18	VIII.B1-1(SP-18)	Piping, piping components, and piping elements	Nickel alloy	Steam	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M2, “Water Chemistry"	No	PWR
608	S-16	VIII.D1. S-16	VIII.D1-9(S-16)	Piping, piping components, and piping elements	Steel	Treated water	Wall thinning #*#due to flow-accelerated corrosion	Chapter XI.M17, “Flow-Accelerated Corrosion”	No	PWR
622	S-31	VIII.E. S-31	VIII.E-39(S-31)	Tanks	Steel	Air – outdoor (External)	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M29, “Aboveground Metallic Tanks”	No	BWR/PWR
612	S-16	VIII.G. S-16	VIII.G-39(S-16)	Piping, piping components, and piping elements	Steel	Treated water	Wall thinning #*#due to flow-accelerated corrosion	Chapter XI.M17, “Flow-Accelerated Corrosion”	No	PWR
616	S-27	VIII.G. S-27	VIII.G-16(S-27)	Heat exchanger components and tubes	Steel	Raw water	Reduction of heat transfer #*#due to fouling	Chapter XI.M20, "Open-Cycle Cooling Water System"	No	PWR
617	S-28	VIII.E. S-28	VIII.E-12(S-28)	Heat exchanger components and tubes	Stainless steel	Raw water	Reduction of heat transfer #*#due to fouling	Chapter XI.M20, "Open-Cycle Cooling Water System"	No	BWR/PWR
618	S-28	VIII.F.S-28	VIII.F-9(S-28)	Heat exchanger components and tubes	Stainless steel	Raw water	Reduction of heat transfer #*#due to fouling	Chapter XI.M20, "Open-Cycle Cooling Water System"	No	PWR
619	S-28	VIII.G. S-28	VIII.G-13(S-28)	Heat exchanger components and tubes	Stainless steel	Raw water	Reduction of heat transfer #*#due to fouling	Chapter XI.M20, "Open-Cycle Cooling Water System"	No	PWR
620	S-29	VIII.H. S-29	VIII.H-7(S-29)	External surfaces	Steel	Air – indoor, uncontrolled (External)	Loss of material #*#due to general corrosion	Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components"	No	BWR/PWR

588	R-18	IV.C2. R-18	IV.C2-10(R-18)	Piping and components (External surfaces); bolting	Steel; stainless steel	System temperature up to 340°C (644°F)	Cumulative fatigue damage #*#due to fatigue	Fatigue is a time-limited aging analysis (TLAA) to be evaluated for the period of extended operation. See the SRP, Section 4.3 “Metal Fatigue,” for acceptable methods for meeting the requirements of 10 CFR 54.21(c)(1).	Yes, TLAA	PWR
607	S-15	VIII.C. S-15	VIII.C-5(S-15)	Piping, piping components, and piping elements	Steel	Steam	Wall thinning #*#due to flow-accelerated corrosion	Chapter XI.M17, “Flow-Accelerated Corrosion”	No	BWR/PWR
1099	SP-55	VIII.F.SP-55	VIII.F-18(SP-55)	Piping, piping components, and piping elements	Copper alloy >15% Zn	Treated water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	PWR
1110	SP-60	VIII.B1. SP-60	VIII.B1-7(SP-60)	Piping, piping components, and piping elements	Steel	Condensation (Internal)	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components"	No	PWR
1091	SP-46	VIII.A. SP-46	VIII.A-13(SP-46)	Piping, piping components, and piping elements	Stainless steel	Steam	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M2, “Water Chemistry,” for BWR water	No	BWR/PWR
1092	SP-46	VIII.B2. SP-46	VIII.B2-2(SP-46)	Piping, piping components, and piping elements	Stainless steel	Steam	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M2, “Water Chemistry,” for BWR water	No	BWR
1093	SP-5	VIII.I.SP-5	VIII.I-3(SP-5)	Piping, piping components, and piping elements	Copper alloy	Gas	None	None	No	BWR/PWR
1095	SP-54	VIII.E. SP-54	VIII.E-25(SP-54)	Piping, piping components, and piping elements	Stainless steel	Closed-cycle cooling water >60°C (>140°F)	Cracking #*#due to stress corrosion cracking	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR

1096	SP-54	VIII.F.SP-54	VIII.F-21(SP-54)	Piping, piping components, and piping elements	Stainless steel	Closed-cycle cooling water >60°C (>140°F)	Cracking #*#due to stress corrosion cracking	Chapter XI.M21A, "Closed Treated Water Systems"	No	PWR
1087	SP-44	VIII.A.SP-44	VIII.A-10(SP-44)	Piping, piping components, and piping elements	Stainless steel	Steam	Cracking #*#due to stress corrosion cracking	Chapter XI.M2, “Water Chemistry"	No	BWR/PWR
1098	SP-55	VIII.E.SP-55	VIII.E-21(SP-55)	Piping, piping components, and piping elements	Copper alloy >15% Zn	Treated water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR/PWR
1086	SP-43	VIII.B1.SP-43	VIII.B1-3(SP-43)	Piping, piping components, and piping elements	Stainless steel	Steam	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M2, “Water Chemistry"	No	PWR
1100	SP-55	VIII.G.SP-55	VIII.G-23(SP-55)	Piping, piping components, and piping elements	Copper alloy >15% Zn	Treated water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	PWR
1101	SP-56	VIII.E.SP-56	VIII.E-9(SP-56)	Heat exchanger components and tubes	Copper alloy	Raw water	Reduction of heat transfer #*#due to fouling	Chapter XI.M20, "Open-Cycle Cooling Water System"	No	BWR/PWR
1102	SP-56	VIII.F.SP-56	VIII.F-6(SP-56)	Heat exchanger components and tubes	Copper alloy	Raw water	Reduction of heat transfer #*#due to fouling	Chapter XI.M20, "Open-Cycle Cooling Water System"	No	PWR
1103	SP-56	VIII.G.SP-56	VIII.G-9(SP-56)	Heat exchanger components and tubes	Copper alloy	Raw water	Reduction of heat transfer #*#due to fouling	Chapter XI.M20, "Open-Cycle Cooling Water System"	No	PWR
1104	SP-57	VIII.E.SP-57	VIII.E-8(SP-57)	Heat exchanger components and tubes	Copper alloy	Closed-cycle cooling water	Reduction of heat transfer #*#due to fouling	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR
1108	SP-59	VIII.B1.SP-59	VIII.B1-6(SP-59)	Piping, piping components, and piping elements	Steel	Air – outdoor (Internal)	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components"	No	PWR

845	EP-42	V.A.EP-42	V.A-2(EP-42)	Encapsulation components	Steel	Air – indoor, uncontrolled (Internal)	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components"	No	PWR
1097	SP-54	VIII.G. SP-54	VIII.G-28(SP-54)	Piping, piping components, and piping elements	Stainless steel	Closed-cycle cooling water >60°C (>140°F)	Cracking #*#due to stress corrosion cracking	Chapter XI.M21A, "Closed Treated Water Systems"	No	PWR
1075	SP-39	VIII.E. SP-39	VIII.E-24(SP-39)	Piping, piping components, and piping elements	Stainless steel	Closed-cycle cooling water	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR
1062	SP-27	VIII.F.SP-27	VIII.F-19(SP-27)	Piping, piping components, and piping elements	Gray cast iron	Treated water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	PWR
1063	SP-27	VIII.G. SP-27	VIII.G-26(SP-27)	Piping, piping components, and piping elements	Gray cast iron	Treated water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	PWR
1064	SP-28	VIII.A. SP-28	VIII.A-7(SP-28)	Piping, piping components, and piping elements	Gray cast iron	Raw water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR/PWR
1065	SP-28	VIII.G. SP-28	VIII.G-24(SP-28)	Piping, piping components, and piping elements	Gray cast iron	Raw water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	PWR
1066	SP-29	VIII.E. SP-29	VIII.E-19(SP-29)	Piping, piping components, and piping elements	Copper alloy >15% Zn	Closed-cycle cooling water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR/PWR
1067	SP-29	VIII.F.SP-29	VIII.F-16(SP-29)	Piping, piping components, and piping elements	Copper alloy >15% Zn	Closed-cycle cooling water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	PWR

1088	SP-44	VIII.B1. SP-44	VIII.B1-2(SP-44)	Piping, piping components, and piping elements	Stainless steel	Steam	Cracking #*#due to stress corrosion cracking	Chapter XI.M2, “Water Chemistry"	No	PWR
1069	SP-30	VIII.A. SP-30	VIII.A-6(SP-30)	Piping, piping components, and piping elements	Copper alloy >15% Zn	Raw water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR/PWR
1111	SP-60	VIII.G. SP-60	VIII.G-34(SP-60)	Piping, piping components, and piping elements	Steel	Condensation (Internal)	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components"	No	PWR
1076	SP-39	VIII.F.SP-39	VIII.F-20(SP-39)	Piping, piping components, and piping elements	Stainless steel	Closed-cycle cooling water	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	PWR
1077	SP-39	VIII.G. SP-39	VIII.G-27(SP-39)	Piping, piping components, and piping elements	Stainless steel	Closed-cycle cooling water	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	PWR
1078	SP-4	VIII.I.SP-4	VIII.I-15(SP-4)	Piping, piping components, and piping elements	Steel	Gas	None	None	No	BWR/PWR
1081	SP-41	VIII.E. SP-41	VIII.E-11(SP-41)	Heat exchanger components and tubes	Stainless steel	Closed-cycle cooling water	Reduction of heat transfer #*#due to fouling	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR
1082	SP-41	VIII.F.SP-41	VIII.F-8(SP-41)	Heat exchanger components and tubes	Stainless steel	Closed-cycle cooling water	Reduction of heat transfer #*#due to fouling	Chapter XI.M21A, "Closed Treated Water Systems"	No	PWR
1083	SP-41	VIII.G. SP-41	VIII.G-11(SP-41)	Heat exchanger components and tubes	Stainless steel	Closed-cycle cooling water	Reduction of heat transfer #*#due to fouling	Chapter XI.M21A, "Closed Treated Water Systems"	No	PWR
1085	SP-43	VIII.A. SP-43	VIII.A-12(SP-43)	Piping, piping components, and piping elements	Stainless steel	Steam	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M2, “Water Chemistry"	No	BWR/PWR

1068	SP-29	VIII.G.SP-29	VIII.G-21(SP-29)	Piping, piping components, and piping elements	Copper alloy >15% Zn	Closed-cycle cooling water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	PWR
1175	T-25	III.B5.T-25	III.B5-8(T-25)	Support members; welds; bolted connections; support anchorage to building structure	Steel	Air with borated water leakage	Loss of material #*#due to boric acid corrosion	Chapter XI.M10, “Boric Acid Corrosion”	No	PWR
1109	SP-6	VIII.I.SP-6	VIII.I-2(SP-6)	Piping, piping components, and piping elements	Copper alloy	Air – indoor, uncontrolled (External)	None	None	No	BWR/PWR
1168	T-24	III.B1.2.T-24	III.B1.2-10(T-24)	Support members; welds; bolted connections; support anchorage to building structure	Steel	Air – indoor, uncontrolled or Air – outdoor	Loss of material #*#due to general and pitting corrosion	Chapter XI.S3, “ASME Section XI, Subsection IWF”	No	BWR/PWR
1169	T-24	III.B1.3.T-24	III.B1.3-10(T-24)	Support members; welds; bolted connections; support anchorage to building structure	Steel	Air – indoor, uncontrolled or Air – outdoor	Loss of material #*#due to general and pitting corrosion	Chapter XI.S3, “ASME Section XI, Subsection IWF”	No	BWR/PWR
1170	T-25	III.B1.1.T-25	III.B1.1-14(T-25)	Support members; welds; bolted connections; support anchorage to building structure	Steel	Air with borated water leakage	Loss of material #*#due to boric acid corrosion	Chapter XI.M10, “Boric Acid Corrosion”	No	PWR
1171	T-25	III.B1.2.T-25	III.B1.2-11(T-25)	Support members; welds; bolted connections; support anchorage to building structure	Steel	Air with borated water leakage	Loss of material #*#due to boric acid corrosion	Chapter XI.M10, “Boric Acid Corrosion”	No	PWR
1172	T-25	III.B2.T-25	III.B2-11(T-25)	Support members; welds; bolted connections; support anchorage to building structure	Steel	Air with borated water leakage	Loss of material #*#due to boric acid corrosion	Chapter XI.M10, “Boric Acid Corrosion”	No	PWR

1166	T-23		III.A8.T-23	III.A8-9(T-23)	Groups 7, 8 - steel components: tank liner	Stainless steel	Water – standing	Cracking #*#due to stress corrosion cracking; #*#Loss of material #*#due to pitting and crevice corrosion	A plant-specific aging management program is to be evaluated.	Yes, plant-specific	BWR/PWR
1174	T-25		III.B4.T-25	III.B4-11(T-25)	Support members; welds; bolted connections; support anchorage to building structure	Steel	Air with borated water leakage	Loss of material #*#due to boric acid corrosion	Chapter XI.M10, “Boric Acid Corrosion”	No	PWR
1165	T-23		III.A7.T-23	III.A7-11(T-23)	Groups 7, 8 - steel components: tank liner	Stainless steel	Water – standing	Cracking #*#due to stress corrosion cracking; #*#Loss of material #*#due to pitting and crevice corrosion	A plant-specific aging management program is to be evaluated.	Yes, plant-specific	BWR/PWR
1176	T-26		III.B1.1.T-26	III.B1.1-12(T-26)	Support members; welds; bolted connections; support anchorage to building structure	Steel	Air – indoor, uncontrolled	Cumulative fatigue damage #*#due to fatigue #*#(Only if CLB fatigue analysis exists)	Fatigue is a time-limited aging analysis (TLAA) to be evaluated for the period of extended operation. See the SRP, Section 4.3 “Metal Fatigue,” for acceptable methods for meeting the requirements of 10 CFR 54.21(c)(1).	Yes, TLAA	BWR/PWR
1177	T-26		III.B1.2.T-26	III.B1.2-9(T-26)	Support members; welds; bolted connections; support anchorage to building structure	Steel	Air – indoor, uncontrolled	Cumulative fatigue damage #*#due to fatigue #*#(Only if CLB fatigue analysis exists)	Fatigue is a time-limited aging analysis (TLAA) to be evaluated for the period of extended operation. See the SRP, Section 4.3 “Metal Fatigue,” for acceptable methods for meeting the requirements of 10 CFR 54.21(c)(1).	Yes, TLAA	BWR/PWR

1178	T-26	III.B1.3 .T-26	III.B1.3-9(T-26)	Support members; welds; bolted connections; support anchorage to building structure	Steel	Air – indoor, uncontrolled	Cumulative fatigue damage #*#due to fatigue #*#(Only if CLB fatigue analysis exists)	Fatigue is a time-limited aging analysis (TLAA) to be evaluated for the period of extended operation. See the SRP, Section 4.3 “Metal Fatigue,” for acceptable methods for meeting the requirements of 10 CFR 54.21(c)(1).	Yes, TLAA	BWR/PWR
1180	T-28	III.B1.1 .T-28	III.B1.1-2(T-28)	Constant and variable load spring hangers; guides; stops	Steel	Air – indoor, uncontrolled or Air – outdoor	Loss of mechanical function #*#due to corrosion, distortion, dirt, overload, fatigue due to vibratory and cyclic thermal loads	Chapter XI.S3, “ASME Section XI, Subsection IWF”	No	BWR/PWR
1181	T-28	III.B1.2 .T-28	III.B1.2-2(T-28)	Constant and variable load spring hangers; guides; stops	Steel	Air – indoor, uncontrolled or Air – outdoor	Loss of mechanical function #*#due to corrosion, distortion, dirt, overload, fatigue due to vibratory and cyclic thermal loads	Chapter XI.S3, “ASME Section XI, Subsection IWF”	No	BWR/PWR
1182	T-28	III.B1.3 .T-28	III.B1.3-2(T-28)	Constant and variable load spring hangers; guides; stops	Steel	Air – indoor, uncontrolled or Air – outdoor	Loss of mechanical function #*#due to corrosion, distortion, dirt, overload, fatigue due to vibratory and cyclic thermal loads	Chapter XI.S3, “ASME Section XI, Subsection IWF”	No	BWR/PWR
3	A-47	VII.C1. A-47	VII.C1-10(A-47)	Piping, piping components, and piping elements	Copper alloy >15% Zn	Raw water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR/PWR

1173	T-25	III.B3.T-25	III.B3-8(T-25)	Support members; welds; bolted connections; support anchorage to building structure	Steel	Air with borated water leakage	Loss of material #*#due to boric acid corrosion	Chapter XI.M10, “Boric Acid Corrosion”	No	PWR
1150	T-12	III.A1.T-12	III.A1-11(T-12)	Masonry walls: all	Concrete block	Air – indoor, uncontrolled or Air – outdoor	Cracking #*#due to restraint shrinkage, creep, and aggressive environment	Chapter XI.S5, “Masonry Walls”	No	BWR/PWR
1116	SP-64	VIII.A.SP-64	VIII.A-2(SP-64)	Heat exchanger components and tubes	Steel	Closed-cycle cooling water	Reduction of heat transfer #*#due to fouling	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR
1117	SP-64	VIII.E.SP-64	VIII.E-14(SP-64)	Heat exchanger components and tubes	Steel	Closed-cycle cooling water	Reduction of heat transfer #*#due to fouling	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR
1118	SP-64	VIII.F.SP-64	VIII.F-11(SP-64)	Heat exchanger components and tubes	Steel	Closed-cycle cooling water	Reduction of heat transfer #*#due to fouling	Chapter XI.M21A, "Closed Treated Water Systems"	No	PWR
1119	SP-64	VIII.G.SP-64	VIII.G-14(SP-64)	Heat exchanger components and tubes	Steel	Closed-cycle cooling water	Reduction of heat transfer #*#due to fouling	Chapter XI.M21A, "Closed Treated Water Systems"	No	PWR
1120	SP-8	VIII.E.SP-8	VIII.E-16(SP-8)	Piping, piping components, and piping elements	Copper alloy	Closed-cycle cooling water	Loss of material #*#due to pitting, crevice, and galvanic corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR
1121	SP-8	VIII.F.SP-8	VIII.F-13(SP-8)	Piping, piping components, and piping elements	Copper alloy	Closed-cycle cooling water	Loss of material #*#due to pitting, crevice, and galvanic corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	PWR
1167	T-24	III.B1.1.T-24	III.B1.1-13(T-24)	Support members; welds; bolted connections; support anchorage to building structure	Steel	Air – indoor, uncontrolled or Air – outdoor	Loss of material #*#due to general and pitting corrosion	Chapter XI.S3, “ASME Section XI, Subsection IWF”	No	BWR/PWR

1123	SP-9	VIII.I.SP-9	VIII.I-5(SP-9)	Piping elements	Glass	Air – indoor, uncontrolled (External)	None	None	No	BWR/PWR
1059	SP-26	VIII.G.SP-26	VIII.G-25(SP-26)	Piping, piping components, and piping elements	Gray cast iron	Soil	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	PWR
1151	T-12	III.A2.T-12	III.A2-11(T-12)	Masonry walls: all	Concrete block	Air – indoor, uncontrolled or Air – outdoor	Cracking #*#due to restraint shrinkage, creep, and aggressive environment	Chapter XI.S5, “Masonry Walls”	No	BWR
1152	T-12	III.A3.T-12	III.A3-11(T-12)	Masonry walls: all	Concrete block	Air – indoor, uncontrolled or Air – outdoor	Cracking #*#due to restraint shrinkage, creep, and aggressive environment	Chapter XI.S5, “Masonry Walls”	No	BWR/PWR
1153	T-12	III.A5.T-12	III.A5-11(T-12)	Masonry walls: all	Concrete block	Air – indoor, uncontrolled or Air – outdoor	Cracking #*#due to restraint shrinkage, creep, and aggressive environment	Chapter XI.S5, “Masonry Walls”	No	BWR/PWR
1154	T-12	III.A6.T-12	III.A6-10(T-12)	Masonry walls: all	Concrete block	Air – indoor, uncontrolled or Air – outdoor	Cracking #*#due to restraint shrinkage, creep, and aggressive environment	Chapter XI.S5, “Masonry Walls”	No	BWR/PWR
1156	T-14	III.A5.T-14	III.A5-13(T-14)	Steel components: fuel pool liner	Stainless steel	Treated water or Treated borated water	Cracking #*#due to stress corrosion cracking; #*#Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M2, "Water Chemistry," and #*#Monitoring of the spent fuel pool water level in accordance with technical specifications and leakage from the leak chase channels.	No	BWR/PWR

1162	T-20	III.A6.T-20	III.A6-7(T-20)	Concrete: exterior above- and below-grade; foundation; interior slab	Concrete	Water – flowing	Loss of material #*#due to abrasion; cavitation	Chapter XI.S7, “Regulatory Guide 1.127, Inspection of Water-Control Structures Associated with Nuclear Power Plants” or the FERC / US Army Corp of Engineers dam inspections and maintenance programs.	No	BWR/PWR
1164	T-22	III.A6.T-22	III.A6-9(T-22)	Earthen water-control structures: dams; embankments; reservoirs; channels; canals and ponds	Various	Water – flowing or standing	Loss of material; loss of form #*#due to erosion, settlement, sedimentation, frost action, waves, currents, surface runoff, seepage	Chapter XI.S7, “Regulatory Guide 1.127, Inspection of Water-Control Structures Associated with Nuclear Power Plants” or the FERC / US Army Corp of Engineers dam inspections and maintenance programs.	No	BWR/PWR
1122	SP-8	VIII.G.SP-8	VIII.G-18(SP-8)	Piping, piping components, and piping elements	Copper alloy	Closed-cycle cooling water	Loss of material #*#due to pitting, crevice, and galvanic corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	PWR
939	RP-06	IV.E.RP-06	IV.E-4(RP-06)	Piping, piping components, and piping elements	Stainless steel	Concrete	None	None	No	BWR/PWR
1061	SP-27	VIII.E.SP-27	VIII.E-23(SP-27)	Piping, piping components, and piping elements	Gray cast iron	Treated water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR/PWR

931	R-96	IV.B1. R-96	IV.B1-2(R-96)	Core shroud (including repairs) and core plate: shroud support structure (shroud support cylinder, shroud support plate, shroud support legs)	Nickel alloy	Reactor coolant	Cracking #*#due to stress corrosion cracking, intergranular stress corrosion cracking, irradiation-assisted stress corrosion cracking	Chapter XI.M9, "BWR Vessel Internals" for shroud support, and #*#Chapter XI.M2, "Water Chemistry" for BWR water	No	BWR
932	R-97	IV.B1. R-97	IV.B1-3(R-97)	Core shroud and core plate: LPCI coupling	Stainless steel	Reactor coolant	Cracking #*#due to stress corrosion cracking, intergranular stress corrosion cracking, irradiation-assisted stress corrosion cracking	Chapter XI.M9, "BWR Vessel Internals" for the LPCI coupling, and #*#Chapter XI.M2, "Water Chemistry" for BWR water	No	BWR
933	R-98	IV.B1. R-98	IV.B1-17(R-98)	Top guide	Stainless steel	Reactor coolant	Cracking #*#due to stress corrosion cracking, intergranular stress corrosion cracking, irradiation-assisted stress corrosion cracking	Chapter XI.M9, "BWR Vessel Internals" for top guide, and #*#Chapter XI.M2, "Water Chemistry" for BWR water	No	BWR

934	R-99	IV.B1.R-99	IV.B1-7(R-99)	Core spray lines and spargers: core spray lines (headers); spray rings; spray nozzles; thermal sleeves	Stainless steel	Reactor coolant	Cracking #*#due to stress corrosion cracking, intergranular stress corrosion cracking, irradiation-assisted stress corrosion cracking	Chapter XI.M9, “BWR Vessel Internals” for core spray internals, and #*#Chapter XI.M2, “Water Chemistry” for BWR water	No	BWR
936	RP-03	IV.E.RP-03	IV.E-1(RP-03)	Piping, piping components, and piping elements	Nickel alloy	Air – indoor, uncontrolled (External)	None	None	No	BWR/PWR
929	R-94	IV.B1.R-94	IV.B1-5(R-94)	Core shroud and core plate: access hole cover (welded)	Nickel alloy	Reactor coolant	Cracking #*#due to stress corrosion cracking, intergranular stress corrosion cracking, irradiation-assisted stress corrosion cracking	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for Class 1 components, and #*#Chapter XI.M2, “Water Chemistry” for BWR water #*#Because cracking initiated in crevice regions is not amenable to visual inspection, for BWRs with a crevice in the access hole covers, an augmented inspection is to include ultrasonic testing (UT) or other demonstrated acceptable inspection of cover welds.	No	BWR
938	RP-05	IV.E.RP-05	IV.E-3(RP-05)	Piping, piping components, and piping elements	Stainless steel	Air with borated water leakage	None	None	No	BWR/PWR

928	R-93	IV.B1. R-93	IV.B1-6(R-93)	Core shroud and core plate: core plate and plate bolts (used in early BWRs)	Stainless steel	Reactor coolant	Cracking #*#due to stress corrosion cracking, intergranular stress corrosion cracking, irradiation-assisted stress corrosion cracking	Chapter XI.M9, “BWR Vessel Internals” for core plate, and #*#Chapter XI.M2, “Water Chemistry” for BWR water	No	BWR
940	RP-07	IV.E.R P-07	IV.E-5(RP-07)	Piping, piping components, and piping elements	Stainless steel	Gas	None	None	No	BWR/PWR
950	R-20	IV.C1. R-20	IV.C1-9(R-20)	Piping, piping components, and piping elements greater than or equal to 4 NPS	Stainless steel	Reactor coolant	Cracking #*#due to stress corrosion cracking, intergranular stress corrosion cracking	Chapter XI.M7, “BWR Stress Corrosion Cracking,” and #*#Chapter XI.M2, “Water Chemistry”	No	BWR
960	R-21	IV.C1. R-21	IV.C1-8(R-21)	Piping, piping components, and piping elements greater than or equal to 4 NPS	Nickel alloy	Reactor coolant	Cracking #*#due to stress corrosion cracking, intergranular stress corrosion cracking	Chapter XI.M7, “BWR Stress Corrosion Cracking,” and #*#Chapter XI.M2, “Water Chemistry”	No	BWR
968	R-217	IV.C2. R-217	IV.C2-20(R-217)	Pressurizer heater sheaths and sleeves; heater bundle diaphragm plate	Stainless steel	Reactor coolant	Cracking #*#due to stress corrosion cracking	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for Class 1 components, and #*#Chapter XI.M2, “Water Chemistry”	No	PWR

969	R-219	IV.A2. R-219	IV.A2-21(R-219)	Reactor vessel components: flanges; nozzles; penetrations; pressure housings; safe ends; thermal sleeves; vessel shells, heads and welds	Steel (with or without nickel-alloy or stainless steel cladding); stainless steel; nickel alloy	Reactor coolant	Cumulative fatigue damage #*#due to fatigue	Fatigue is a TLAA evaluated for the period of extended operation for Class 1 components #*#Environmental effects on fatigue are addressed (See SRP, Sec 4.3 “Metal Fatigue,” for acceptable methods to comply with 10 CFR 54.21(c)(1))	Yes, TLAA	PWR
970	R-220	IV.C1. R-220	IV.C1-15(R-220)	Reactor coolant pressure boundary components: piping, piping components, and piping elements	Steel (with or without nickel-alloy or stainless steel cladding); stainless steel; nickel alloy	Reactor coolant	Cumulative fatigue damage #*#due to fatigue	Fatigue is a TLAA evaluated for the period of extended operation for Class 1 components #*#Environmental effects on fatigue are addressed (See SRP, Sec 4.3 “Metal Fatigue,” for acceptable methods to comply with 10 CFR 54.21(c)(1))	Yes, TLAA	BWR
971	R-221	IV.D1. R-221	IV.D1-8(R-221)	Recirculating steam generator components: flanges; penetrations; nozzles; safe ends; lower heads and welds	Steel (with or without nickel-alloy or stainless steel cladding); stainless steel; nickel alloy	Reactor coolant	Cumulative fatigue damage #*#due to fatigue	Fatigue is a TLAA evaluated for the period of extended operation for Class 1 components #*#Environmental effects on fatigue are addressed (See SRP, Sec 4.3 “Metal Fatigue,” for acceptable methods to comply with 10 CFR 54.21(c)(1))	Yes, TLAA	PWR
937	RP-04	IV.E.RP-04	IV.E-2(RP-04)	Piping, piping components, and piping elements	Stainless steel	Air – indoor, uncontrolled (External)	None	None	No	BWR/PWR
881	R-11	IV.C2. R-11	IV.C2-7(R-11)	Closure bolting	High-strength, low-alloy steel; stainless steel	Air with reactor coolant leakage	Cracking #*#due to stress corrosion cracking	Chapter XI.M18, "Bolting Integrity"	No	PWR

853	EP-54	V.B.EP-54	V.B-8(EP-54)	Piping, piping components, and piping elements	Gray cast iron	Soil	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR
854	EP-54	V.D1.EP-54	V.D1-21(EP-54)	Piping, piping components, and piping elements	Gray cast iron	Soil	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	PWR
855	EP-54	V.D2.EP-54	V.D2-24(EP-54)	Piping, piping components, and piping elements	Gray cast iron	Soil	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR
856	EP-55	V.D1.EP-55	V.D1-25(EP-55)	Piping, piping components, and piping elements	Stainless steel	Raw water	Loss of material #*#due to pitting, crevice, and microbiologically-influenced corrosion	Chapter XI.M20, "Open-Cycle Cooling Water System"	No	PWR
857	EP-7	V.F.EP-7	V.F-18(EP-7)	Piping, piping components, and piping elements	Steel	Gas	None	None	No	BWR/PWR
858	EP-9	V.F.EP-9	V.F-4(EP-9)	Piping, piping components, and piping elements	Copper alloy	Gas	None	None	No	BWR/PWR
930	R-95	IV.B1.R-95	IV.B1-4(R-95)	Core shroud and core plate: access hole cover (mechanical)	Nickel alloy	Reactor coolant	Cracking #*#due to stress corrosion cracking, intergranular stress corrosion cracking, irradiation-assisted stress corrosion cracking	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for Class 1 components, and #*#Chapter XI.M2, “Water Chemistry”	No	BWR

880	R-04	IV.A1. R-04	IV.A1-7(R-04)	Reactor vessel components: flanges; nozzles; penetrations; safe ends; thermal sleeves; vessel shells, heads and welds	Steel (with or without nickel-alloy or stainless steel cladding); stainless steel; nickel alloy	Reactor coolant	Cumulative fatigue damage #*#due to fatigue	Fatigue is a TLAA evaluated for the period of extended operation for Class 1 components #*#Environmental effects on fatigue are addressed (See SRP, Sec 4.3 “Metal Fatigue,” for acceptable methods to comply with 10 CFR 54.21(c)(1))	Yes, TLAA	BWR
975	R-225	IV.C1. R-225	IV.C1-5(R-225)	Isolation condenser components	Steel; stainless steel	Reactor coolant	Cracking #*#due to cyclic loading	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for Class 1 components #*#The AMP in Chapter XI.M1 is to be augmented to detect cracking due to cyclic loading and verification of the program's effectiveness is necessary to ensure that significant degradation is not occurring and the component intended function will be maintained during the extended period of operation. An acceptable verification program includes temperature and radioactivity monitoring of the shell side water, and eddy current testing of tubes.	Yes, detection of aging effects is to be evaluated	BWR
905	R-13	IV.C2. R-13	IV.C2-23(R-13)	Pressurizer relief tank: tank shell and heads; flanges; nozzles	Steel (with stainless steel or nickel-alloy cladding)	Treated borated water	Cumulative fatigue damage #*#due to fatigue	Fatigue is a time-limited aging analysis (TLAA) to be evaluated for the period of extended operation. See the SRP, Section 4.3 “Metal Fatigue,” for acceptable methods for meeting the requirements of 10 CFR 54.21(c)(1).	Yes, TLAA	PWR

910	R-15	IV.C1. R-15	IV.C1-4(R-15)	Isolation condenser components	Stainless steel	Reactor coolant	Cracking #*#due to stress corrosion cracking, intergranular stress corrosion cracking	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for Class 1 components, and #*#Chapter XI.M2, “Water Chemistry” for BWR water #*#The AMP in Chapter XI.M1 is to be augmented to detect cracking due to stress corrosion cracking and verification of the program's effectiveness is necessary to ensure that significant degradation is not occurring and the component intended function will be maintained during the extended period of operation. An acceptable verification program includes temperature and radioactivity monitoring of the shell side water, and eddy current testing of tubes.	Yes, detection of aging effects is to be evaluated	BWR
914	R-17	IV.A2. R-17	IV.A2-13(R-17)	External surfaces	Steel	Air with borated water leakage	Loss of material #*#due to boric acid corrosion	Chapter XI.M10, “Boric Acid Corrosion”	No	PWR
919	R-19	IV.C2. R-19	IV.C2-16(R-19)	Pressurizer: integral support	Steel; stainless steel	Air with metal temperature up to 288°C (550°F)	Cracking #*#due to cyclic loading	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for Class 1 components	No	PWR
923	R-87	IV.A2. R-87	IV.A2-25(R-87)	Vessel shell: vessel flange	Steel	Reactor coolant	Loss of material #*#due to wear	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for Class 1 components	No	PWR
926	R-90	IV.A2. R-90	IV.A2-18(R-90)	Penetrations: head vent pipe (top head); instrument tubes (top head)	Nickel alloy	Reactor coolant	Cracking #*#due to primary water stress corrosion cracking	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for Class 1 components, and #*#Chapter XI.M2, “Water Chemistry” for PWR primary water, and #*#Chapter XI.M11B, “Cracking of Nickel-Alloy Components in the Reactor Coolant Pressure Boundary”	No	PWR

927	R-92	IV.B1. R-92	IV.B1-1(R-92)	Core shroud (including repairs) and core plate: core shroud (upper, central, lower)	Stainless steel	Reactor coolant	Cracking #*#due to stress corrosion cracking, intergranular stress corrosion cracking, irradiation-assisted stress corrosion cracking	Chapter XI.M9, “BWR Vessel Internals” for core shroud, and #*#Chapter XI.M2, “Water Chemistry” for BWR water	No	BWR
863	L-05	VI.B.L-05	VI.B-1(L-05)	Electrical equipment subject to 10 CFR 50.49 EQ requirements	Various polymeric and metallic materials	Adverse localized environment caused by heat, radiation, oxygen, moisture, or voltage	Various aging effects#*#due to various mechanisms in accordance with 10 CFR 50.49	EQ is a time-limited aging analysis (TLAA) to be evaluated for the period of extended operation. See the Standard Review Plan, Section 4.4, "Environmental Qualification (EQ) of Electrical Equipment," for acceptable methods for meeting the requirements of 10 CFR 54.21(c)(1)(i) and (ii). #*# #*#See Chapter X.E1, "Environmental Qualification (EQ) of Electric Components," of this report for meeting the requirements of 10 CFR 54.21(c)(1)(iii).	Yes, TLAA	BWR/PWR
1023	S-08	VIII.B2. S-08	VIII.B2-5(S-08)	Piping, piping components, and piping elements	Steel	Steam or Treated water	Cumulative fatigue damage #*#due to fatigue	Fatigue is a time-limited aging analysis (TLAA) to be evaluated for the period of extended operation. See the SRP, Section 4.3 “Metal Fatigue,” for acceptable methods for meeting the requirements of 10 CFR 54.21(c)(1).	Yes, TLAA	BWR
1010	RP-28	IV.A2. RP-28	IV.A2-14(RP-28)	Flanges; nozzles; penetrations; pressure housings; safe ends; vessel shells, heads welds	Steel (with stainless steel or nickel-alloy cladding); stainless steel; nickel alloy	Reactor coolant	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M2, “Water Chemistry” for PWR primary water	No	PWR

1012	S-01	VIII.E. S-01	VIII.E-1(S-01)	Buried piping, piping components, piping elements; tanks	Steel (with coating or wrapping)	Soil	Loss of material #*#due to general, pitting, crevice, and microbiologically-influenced corrosion	Chapter XI.M41, "Buried, Underground, and Limited-Access Piping and Tanks"	No	BWR/PWR
1013	S-01	VIII.G. S-01	VIII.G-1(S-01)	Buried piping, piping components, piping elements; tanks	Steel (with coating or wrapping)	Soil	Loss of material #*#due to general, pitting, crevice, and microbiologically-influenced corrosion	Chapter XI.M41, "Buried, Underground, and Limited-Access Piping and Tanks"	No	PWR
1014	S-02	VIII.H. S-02	VIII.H-6(S-02)	Closure bolting	Steel	Air with steam or water leakage	Loss of material #*#due to general corrosion	Chapter XI.M18, "Bolting Integrity"	No	BWR/PWR
1015	S-03	VIII.H. S-03	VIII.H-3(S-03)	Closure bolting	High-strength steel	Air with steam or water leakage	Cracking #*#due to cyclic loading, stress corrosion cracking	Chapter XI.M18, "Bolting Integrity"	No	BWR/PWR
1018	S-05	VIII.B2. S-05	VIII.B2-3(S-05)	Piping, piping components, and piping elements	Steel	Steam	Loss of material #*#due to general, pitting and crevice corrosion	Chapter XI.M2, “Water Chemistry,” for BWR water	No	BWR
972	R-222	IV.D2. R-222	IV.D2-3(R-222)	Once-through steam generator components: primary side nozzles, safe ends, and welds	Steel (with or without nickel-alloy or stainless steel cladding); stainless steel; nickel alloy	Reactor coolant	Cumulative fatigue damage #*#due to fatigue	Fatigue is a TLAA evaluated for the period of extended operation for Class 1 components #*#Environmental effects on fatigue are addressed (See SRP, Sec 4.3 “Metal Fatigue,” for acceptable methods to comply with 10 CFR 54.21(c)(1))	Yes, TLAA	PWR

1022	S-08	VIII.B1. S-08	VIII.B1-10(S-08)	Piping, piping components, and piping elements	Steel	Steam or Treated water	Cumulative fatigue damage #*#due to fatigue	Fatigue is a time-limited aging analysis (TLAA) to be evaluated for the period of extended operation. See the SRP, Section 4.3 “Metal Fatigue,” for acceptable methods for meeting the requirements of 10 CFR 54.21(c)(1).	Yes, TLAA	PWR
1003	RP-23	IV.C2. RP-23	IV.C2-15(RP-23)	Piping, piping components, and piping elements; flanges; heater sheaths and sleeves; penetrations; thermal sleeves; vessel shell heads and welds	Steel (with stainless steel or nickel-alloy cladding); stainless steel; nickel alloy	Reactor coolant	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M2, “Water Chemistry” for PWR primary water	No	PWR
1036	S-23	VIII.A. S-23	VIII.A-1(S-23)	Heat exchanger components and tubes	Steel	Closed-cycle cooling water	Loss of material #*#due to general, pitting, crevice, and galvanic corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR
1037	S-23	VIII.E. S-23	VIII.E-5(S-23)	Heat exchanger components and tubes	Steel	Closed-cycle cooling water	Loss of material #*#due to general, pitting, crevice, and galvanic corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR
1038	S-23	VIII.F.S-23	VIII.F-4(S-23)	Heat exchanger components and tubes	Steel	Closed-cycle cooling water	Loss of material #*#due to general, pitting, crevice, and galvanic corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	PWR

1039	S-23	VIII.G. S-23	VIII.G-5(S-23)	Heat exchanger components and tubes	Steel	Closed-cycle cooling water	Loss of material #*#due to general, pitting, crevice, and galvanic corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	PWR
1040	S-24	VIII.E. S-24	VIII.E-6(S-24)	Heat exchanger components and tubes	Steel	Raw water	Loss of material #*#due to general, pitting, crevice, galvanic, and microbiologically-influenced corrosion; fouling that leads to corrosion	Chapter XI.M20, "Open-Cycle Cooling Water System"	No	BWR/PWR
1058	SP-26	VIII.E. SP-26	VIII.E-22(SP-26)	Piping, piping components, and piping elements	Gray cast iron	Soil	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR/PWR
609	S-16	VIII.D2. S-16	VIII.D2-8(S-16)	Piping, piping components, and piping elements	Steel	Treated water	Wall thinning #*#due to flow-accelerated corrosion	Chapter XI.M17, “Flow-Accelerated Corrosion”	No	BWR
1021	S-07	VIII.B1. S-07	VIII.B1-8(S-07)	Piping, piping components, and piping elements	Steel	Steam	Loss of material #*#due to general, pitting and crevice corrosion	Chapter XI.M2, “Water Chemistry"	No	PWR
989	R-48	IV.D2. R-48	IV.D2-16(R-48)	Tubes and sleeves	Nickel alloy	Secondary feedwater or steam	Cracking #*#due to intergranular attack	Chapter XI.M19, “Steam Generators,” and #*#Chapter XI.M2, “Water Chemistry” for PWR secondary water	No	PWR
1060	SP-27	VIII.A. SP-27	VIII.A-8(SP-27)	Piping, piping components, and piping elements	Gray cast iron	Treated water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR/PWR

976	R-226	IV.D2. R-226	IV.D2-13(R-226)	Tubes	Nickel alloy	Secondary feedwater or steam	Changes in dimension ("denting") #*#due to corrosion of carbon steel tube support plate	Chapter XI.M19, “Steam Generators,” and #*#Chapter XI.M2, “Water Chemistry” for PWR secondary water	No	PWR
977	R-23	IV.C1. R-23	IV.C1-7(R-23)	Piping, piping components, and piping elements	Steel	Reactor coolant	Wall thinning #*#due to flow-accelerated corrosion	Chapter XI.M17, “Flow-Accelerated Corrosion”	No	BWR
979	R-25	IV.C2. R-25	IV.C2-19(R-25)	Pressurizer components	Steel (with stainless steel or nickel-alloy cladding); stainless steel	Reactor coolant	Cracking #*#due to stress corrosion cracking, primary water stress corrosion cracking	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for Class 1 components, and #*#Chapter XI.M2, “Water Chemistry”	No	PWR
984	R-30	IV.C2. R-30	IV.C2-27(R-30)	Reactor coolant system piping and fittings: cold leg; hot leg; surge line; spray line	Steel (with stainless steel cladding); stainless steel	Reactor coolant	Cracking #*#due to stress corrosion cracking	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for Class 1 components, and #*#Chapter XI.M2, “Water Chemistry”	No	PWR
985	R-31	IV.D2. R-31	IV.D2-5(R-31)	Secondary manway covers; handhole covers	Steel	Air with leaking secondary-side water and/or steam	Loss of material #*#due to erosion	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for Class 2 components	No	PWR
986	R-47	IV.D1. R-47	IV.D1-23(R-47)	Tubes and sleeves	Nickel alloy	Secondary feedwater or steam	Cracking #*#due to outer diameter stress corrosion cracking	Chapter XI.M19, “Steam Generators,” and #*#Chapter XI.M2, “Water Chemistry” for PWR secondary water	No	PWR
1008	RP-26	IV.B1. RP-26	IV.B1-15(RP-26)	Reactor vessel internals components	Stainless steel; nickel alloy	Reactor coolant	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for Class 1 components, and #*#Chapter XI.M2, “Water Chemistry”	No	BWR

988	R-48	IV.D1. R-48	IV.D1-22(R-48)	Tubes and sleeves	Nickel alloy	Secondary feedwater or steam	Cracking #*#due to intergranular attack	Chapter XI.M19, “Steam Generators,” and #*#Chapter XI.M2, “Water Chemistry” for PWR secondary water	No	PWR
1006	RP-24	IV.B4. RP-24	IV.B4-38(RP-24)	Reactor vessel internal components	Stainless steel; nickel alloy	Reactor coolant and neutron flux	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M2, “Water Chemistry” for PWR primary water	No	PWR
992	R-50	IV.D1. R-50	IV.D1-25(R-50)	Tubes and sleeves (exposed to phosphate chemistry)	Nickel alloy	Secondary feedwater or steam	Loss of material #*#due to wastage and pitting corrosion	Chapter XI.M19, “Steam Generators,” and #*#Chapter XI.M2, “Water Chemistry” for PWR secondary water	No	PWR
994	RP-12	IV.C2. RP-12	IV.C2-12(RP-12)	Piping, piping components, and piping elements	Copper alloy >15% Zn	Closed-cycle cooling water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	PWR
996	RP-14	IV.D1. RP-14	IV.D1-14(RP-14)	Steam generator structural: anti-vibration bars	Chrome plated steel; stainless steel; nickel alloy	Secondary feedwater or steam	Cracking #*#due to stress corrosion cracking	Chapter XI.M19, “Steam Generators,” and #*#Chapter XI.M2, “Water Chemistry” for PWR secondary water	No	PWR
998	RP-16	IV.D1. RP-16	IV.D1-9(RP-16)	Steam generator: tube bundle wrapper and associated supports and mounting hardware	Steel	Secondary feedwater or steam	Loss of material #*#due to erosion, general, pitting, and crevice corrosion	Chapter XI.M19, “Steam Generators,” and #*#Chapter XI.M2, “Water Chemistry” for PWR secondary water	No	PWR
999	RP-17	IV.D1. RP-17	IV.D1-7(RP-17)	Primary side components: divider plate	Stainless steel	Reactor coolant	Cracking #*#due to stress corrosion cracking	Chapter XI.M2, “Water Chemistry” for PWR primary water	No	PWR
1001	RP-21	IV.D1. RP-21	IV.D1-6(RP-21)	Primary side components: divider plate	Steel (with nickel-alloy cladding); nickel alloy	Reactor coolant	Cracking #*#due to primary water stress corrosion cracking	Chapter XI.M2, “Water Chemistry” for PWR primary water	No	PWR

973	R-223	IV.C2. R-223	IV.C2-25(R-223)	Reactor coolant pressure boundary components: piping, piping components, and piping elements; flanges; nozzles and safe ends; pressurizer vessel shell heads and welds; heater sheaths and sleeves; penetrations; thermal sleeves	Steel (with or without nickel-alloy or stainless steel cladding); stainless steel; nickel alloy	Reactor coolant	Cumulative fatigue damage #*#due to fatigue	Fatigue is a TLAA evaluated for the period of extended operation for Class 1 components #*#Environmental effects on fatigue are addressed (See SRP, Sec 4.3 “Metal Fatigue,” for acceptable methods to comply with 10 CFR 54.21(c)(1))	Yes, TLAA	PWR
987	R-47	IV.D2. R-47	IV.D2-17(R-47)	Tubes and sleeves	Nickel alloy	Secondary feedwater or steam	Cracking #*#due to outer diameter stress corrosion cracking	Chapter XI.M19, “Steam Generators,” and #*#Chapter XI.M2, “Water Chemistry” for PWR secondary water	No	PWR
182	AP-19	VII.J.AP-19	VII.J-17(AP-19)	Piping, piping components, and piping elements	Stainless steel	Concrete	None	None	No	BWR/PWR
164	A-02	VII.G.A-02	VII.G-15(A-02)	Piping, piping components, and piping elements	Gray cast iron	Soil	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR/PWR
165	A-02	VII.H1. A-02	VII.H1-5(A-02)	Piping, piping components, and piping elements	Gray cast iron	Soil	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR/PWR
176	AP-13	VII.J.AP-13	VII.J-6(AP-13)	Piping, piping components, and piping elements	Galvanized steel	Air - indoor, uncontrolled	None	None	No	BWR/PWR
177	AP-14	VII.J.AP-14	VII.J-8(AP-14)	Piping elements	Glass	Air – indoor, uncontrolled (External)	None	None	No	BWR/PWR
178	AP-15	VII.J.AP-15	VII.J-10(AP-15)	Piping elements	Glass	Lubricating oil	None	None	No	BWR/PWR

179	AP-16	VII.J.AP-16	VII.J-14(AP-16)	Piping, piping components, and piping elements	Nickel alloy	Air – indoor, uncontrolled (External)	None	None	No	BWR/PWR
116	A-60	VII.E3.A-60	VII.E3-16(A-60)	Piping, piping components, and piping elements	Stainless steel	Treated water >60°C (>140°F)	Cracking #*#due to stress corrosion cracking, intergranular stress corrosion cracking	Chapter XI.M25, “BWR Reactor Water Cleanup System”	No	BWR/PWR
611	S-16	VIII.F.S-16	VIII.F-26(S-16)	Piping, piping components, and piping elements	Steel	Treated water	Wall thinning #*#due to flow-accelerated corrosion	Chapter XI.M17, “Flow-Accelerated Corrosion”	No	PWR
147	AP-32	VII.E4.AP-32	VII.E4-9(AP-32)	Piping, piping components, and piping elements	Copper alloy >15% Zn	Treated water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR
484	R-61	IV.A1.R-61	IV.A1-10(R-61)	Top head enclosure: vessel flange leak detection line	Stainless steel; nickel alloy	Air with reactor coolant leakage (Internal) or reactor coolant	Cracking #*#due to stress corrosion cracking, intergranular stress corrosion cracking	A plant-specific aging management program is to be evaluated because existing programs may not be capable of mitigating or detecting crack initiation and growth due to SCC in the vessel flange leak detection line	Yes, plant-specific	BWR
184	AP-20	VII.J.AP-20	VII.J-18(AP-20)	Piping, piping components, and piping elements	Stainless steel	Air – dry	None	None	No	BWR/PWR
185	AP-22	VII.J.AP-22	VII.J-19(AP-22)	Piping, piping components, and piping elements	Stainless steel	Gas	None	None	No	BWR/PWR
186	AP-65	VII.E1.AP-65	VII.E1-3(AP-65)	Heat exchanger components and tubes	Copper alloy >15% Zn	Treated water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	PWR

187	AP-65	VII.F1. AP-65	VII.F1-9(AP-65)	Heat exchanger components	Copper alloy >15% Zn	Treated water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR/PWR
188	AP-65	VII.F3. AP-65	VII.F3-9(AP-65)	Heat exchanger components	Copper alloy >15% Zn	Treated water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR/PWR
180	AP-17	VII.J.AP-17	VII.J-15(AP-17)	Piping, piping components, and piping elements	Stainless steel	Air – indoor, uncontrolled (External)	None	None	No	BWR/PWR
130	C-24	II.B3.1. C-24	II.B3.1-9(C-24)	Steel elements: suppression chamber shell (interior surface)	Stainless steel	Air – indoor, uncontrolled	Cracking #*#due to stress corrosion cracking	Chapter XI.S1, “ASME Section XI, Subsection IWE,” and #*#Chapter XI.S4, “10 CFR Part 50, Appendix J”	No	BWR
300	SP-30	VIII.G. SP-30	VIII.G-22(SP-30)	Piping, piping components, and piping elements	Copper alloy >15% Zn	Raw water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	PWR
118	A-62	VII.E3. A-62	VII.E3-14(A-62)	Piping, piping components, and piping elements	Stainless steel	Treated water	Cumulative fatigue damage #*#due to fatigue	Fatigue is a time-limited aging analysis (TLAA) to be evaluated for the period of extended operation. See the SRP, Section 4.3 “Metal Fatigue,” for acceptable methods for meeting the requirements of 10 CFR 54.21(c)(1).	Yes, TLAA	BWR/PWR
119	A-62	VII.E4. A-62	VII.E4-13(A-62)	Piping, piping components, and piping elements	Stainless steel	Treated water	Cumulative fatigue damage #*#due to fatigue	Fatigue is a time-limited aging analysis (TLAA) to be evaluated for the period of extended operation. See the SRP, Section 4.3 “Metal Fatigue,” for acceptable methods for meeting the requirements of 10 CFR 54.21(c)(1).	Yes, TLAA	BWR

124	C-21	II.B1.1.C-21	II.B1.1-4(C-21)	Steel elements: torus; vent line; vent header; vent line bellows; downcomers	Steel; stainless steel	Air – indoor, uncontrolled	Cumulative fatigue damage #*#due to fatigue #*#(Only if CLB fatigue analysis exists)	Fatigue is a time-limited aging analysis (TLAA) to be evaluated for the period of extended operation. See the SRP, Section 4.6, “Containment Liner Plate and Penetration Fatigue Analysis” for acceptable methods for meeting the requirements of 10 CFR 54.21(c)(1).	Yes, TLAA	BWR
126	C-23	II.B1.1.C-23	II.B1.1-1(C-23)	Steel elements: drywell head; downcomers	Steel	Air – indoor, uncontrolled	Fretting or lockup #*#due to mechanical wear	Chapter XI.S1, “ASME Section XI, Subsection IWE”	No	BWR
127	C-23	II.B1.2.C-23	II.B1.2-9(C-23)	Steel elements: drywell head; downcomers	Steel	Air – indoor, uncontrolled	Fretting or lockup #*#due to mechanical wear	Chapter XI.S1, “ASME Section XI, Subsection IWE”	No	BWR
163	A-02	VII.C3.A-02	VII.C3-5(A-02)	Piping, piping components, and piping elements	Gray cast iron	Soil	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR/PWR
129	C-23	II.B2.2.C-23	II.B2.2-11(C-23)	Steel elements: drywell head; downcomers	Steel	Air – indoor, uncontrolled	Fretting or lockup #*#due to mechanical wear	Chapter XI.S1, “ASME Section XI, Subsection IWE”	No	BWR
162	A-02	VII.C1.A-02	VII.C1-12(A-02)	Piping, piping components, and piping elements	Gray cast iron	Soil	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR/PWR
131	C-24	II.B3.2.C-24	II.B3.2-10(C-24)	Steel elements: suppression chamber shell (interior surface)	Stainless steel	Air – indoor, uncontrolled	Cracking #*#due to stress corrosion cracking	Chapter XI.S1, “ASME Section XI, Subsection IWE,” and #*#Chapter XI.S4, “10 CFR Part 50, Appendix J”	No	BWR
142	AP-31	VII.F4.AP-31	VII.F4-14(AP-31)	Piping, piping components, and piping elements	Gray cast iron	Treated water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR/PWR
143	AP-31	VII.G.AP-31	VII.G-16(AP-31)	Piping, piping components, and piping elements	Gray cast iron	Treated water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR/PWR

144	AP-32	VII.A4. AP-32	VII.A4-9(AP-32)	Piping, piping components, and piping elements	Copper alloy >15% Zn	Treated water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR
145	AP-32	VII.C2. AP-32	VII.C2-7(AP-32)	Piping, piping components, and piping elements	Copper alloy >15% Zn	Treated water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR/PWR
146	AP-32	VII.E3. AP-32	VII.E3-11(AP-32)	Piping, piping components, and piping elements	Copper alloy >15% Zn	Treated water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR/PWR
226	A-22	VII.G.A-22	VII.G-4(A-22)	Fire rated doors	Steel	Air – outdoor	Loss of material #*#due to wear	Chapter XI.M26, "Fire Protection"	No	BWR/PWR
128	C-23	II.B2.1. C-23	II.B2.1-2(C-23)	Steel elements: drywell head; downcomers	Steel	Air – indoor, uncontrolled	Fretting or lockup #*#due to mechanical wear	Chapter XI.S1, “ASME Section XI, Subsection IWE”	No	BWR
282	C-16	II.A3.C-16	II.A3-6(C-16)	Personnel airlock, equipment hatch, CRD hatch	Steel	Air – indoor, uncontrolled or Air – outdoor	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.S1, “ASME Section XI, Subsection IWE,” and #*#Chapter XI.S4, “10 CFR Part 50, Appendix J”	No	PWR
189	AP-66	VII.I.AP-66	VII.I-12(AP-66)	Piping, piping components, and piping elements	Copper alloy >15% Zn	Air with borated water leakage	Loss of material #*#due to boric acid corrosion	Chapter XI.M10, “Boric Acid Corrosion”	No	PWR
266	A-95	VII.H1. A-95	VII.H1-11(A-95)	Tanks	Steel	Air – outdoor (External)	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M29, “Aboveground Metallic Tanks”	No	BWR/PWR
267	A-96	VII.A2. A-96	VII.A2-6(A-96)	Spent fuel storage racks (BWR)	Stainless steel	Treated water >60°C (>140°F)	Cracking #*#due to stress corrosion cracking	Chapter XI.M2, “Water Chemistry”	No	BWR/PWR

268	A-97	VII.A2. A-97	VII.A2-7(A-97)	Spent fuel storage racks (PWR)	Stainless steel	Treated borated water >60°C (>140°F)	Cracking #*#due to stress corrosion cracking	Chapter XI.M2, “Water Chemistry”	No	BWR/PWR
269	AP-1	VII.A3. AP-1	VII.A3-4(AP-1)	Piping, piping components, and piping elements	Aluminum	Air with borated water leakage	Loss of material #*#due to boric acid corrosion	Chapter XI.M10, “Boric Acid Corrosion”	No	PWR
270	AP-1	VII.E1. AP-1	VII.E1-10(AP-1)	Piping, piping components, and piping elements	Aluminum	Air with borated water leakage	Loss of material #*#due to boric acid corrosion	Chapter XI.M10, “Boric Acid Corrosion”	No	PWR
264	A-93	VII.G.A-93	VII.G-31(A-93)	Structural fire barriers: walls, ceilings and floors	Reinforced concrete	Air – outdoor	Loss of material #*#due to corrosion of embedded steel	Chapter XI.M26, “Fire Protection,” and #*#Chapter XI.S6, “Structures Monitoring”	No	BWR/PWR
276	AP-3	VII.J.AP-3	VII.J-21(AP-3)	Piping, piping components, and piping elements	Steel	Concrete	None	None	No	BWR/PWR
263	A-92	VII.G.A-92	VII.G-30(A-92)	Structural fire barriers: walls, ceilings and floors	Reinforced concrete	Air – outdoor	Cracking, loss of material #*#due to freeze-thaw, aggressive chemical attack, and reaction with aggregates	Chapter XI.M26, “Fire Protection,” and #*#Chapter XI.S6, “Structures Monitoring”	No	BWR/PWR
283	C-16	II.B4.C-16	II.B4-6(C-16)	Personnel airlock, equipment hatch, CRD hatch	Steel	Air – indoor, uncontrolled or Air – outdoor	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.S1, “ASME Section XI, Subsection IWE,” and #*#Chapter XI.S4, “10 CFR Part 50, Appendix J”	No	BWR
289	S-31	VIII.G. S-31	VIII.G-40(S-31)	Tanks	Steel	Air – outdoor (External)	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M29, “Aboveground Metallic Tanks”	No	PWR
294	S-40	VIII.H. S-40	VIII.H-2(S-40)	Bolting	Steel	Air with borated water leakage	Loss of material #*#due to boric acid corrosion	Chapter XI.M10, “Boric Acid Corrosion”	No	PWR

295	S-41	VIII.H.S-41	VIII.H-8(S-41)	External surfaces	Steel	Air – outdoor (External)	Loss of material #*#due to general corrosion	Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components"	No	BWR/PWR
296	S-42	VIII.H.S-42	VIII.H-10(S-42)	External surfaces	Steel	Condensation (External)	Loss of material #*#due to general corrosion	Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components"	No	BWR/PWR
298	SP-30	VIII.E.SP-30	VIII.E-20(SP-30)	Piping, piping components, and piping elements	Copper alloy >15% Zn	Raw water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR/PWR
299	SP-30	VIII.F.SP-30	VIII.F-17(SP-30)	Piping, piping components, and piping elements	Copper alloy >15% Zn	Raw water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	PWR
271	AP-11	VII.J.AP-11	VII.J-5(AP-11)	Piping, piping components, and piping elements	Copper alloy <15% Zn	Air with borated water leakage	None	None	No	BWR/PWR
249	A-79	VII.E1.A-79	VII.E1-1(A-79)	External surfaces	Steel	Air with borated water leakage	Loss of material #*#due to boric acid corrosion	Chapter XI.M10, “Boric Acid Corrosion”	No	PWR
101	A-34	VII.E3.A-34	VII.E3-17(A-34)	Piping, piping components, and piping elements	Steel	Air - indoor, uncontrolled	Cumulative fatigue damage #*#due to fatigue	Fatigue is a time-limited aging analysis (TLAA) to be evaluated for the period of extended operation. See the SRP, Section 4.3 “Metal Fatigue,” for acceptable methods for meeting the requirements of 10 CFR 54.21(c)(1).	Yes, TLAA	BWR/PWR
227	A-23	VII.G.A-23	VII.G-23(A-23)	Piping, piping components, and piping elements	Steel	Moist air or condensation (Internal)	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components"	No	BWR/PWR
228	A-23	VII.H2.A-23	VII.H2-21(A-23)	Piping, piping components, and piping elements	Steel	Moist air or condensation (Internal)	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components"	No	BWR/PWR

229	A-24		VII.H1. A-24	VII.H1-8(A-24)	Piping, piping components, and piping elements	Steel	Air – outdoor (External)	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components"	No	BWR/PWR
236	A-26		VII.D.A-26	VII.D-2(A-26)	Piping, piping components, and piping elements: compressed air system	Steel	Condensation (Internal)	Loss of material #*#due to general and pitting corrosion	Chapter XI.M24, “Compressed Air Monitoring”	No	BWR/PWR
246	A-77		VII.I.A-77	VII.I-8(A-77)	External surfaces	Steel	Air – indoor, uncontrolled (External)	Loss of material #*#due to general corrosion	Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components"	No	BWR/PWR
265	A-94		VII.A1. A-94	VII.A1-1(A-94)	Structural steel	Steel	Air – indoor, uncontrolled (External)	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
248	A-79		VII.A3. A-79	VII.A3-2(A-79)	External surfaces	Steel	Air with borated water leakage	Loss of material #*#due to boric acid corrosion	Chapter XI.M10, “Boric Acid Corrosion”	No	PWR
225	A-21		VII.G.A-21	VII.G-3(A-21)	Fire rated doors	Steel	Air - indoor, uncontrolled	Loss of material #*#due to wear	Chapter XI.M26, "Fire Protection"	No	BWR/PWR
250	A-79		VII.I.A-79	VII.I-10(A-79)	External surfaces	Steel	Air with borated water leakage	Loss of material #*#due to boric acid corrosion	Chapter XI.M10, “Boric Acid Corrosion”	No	PWR
251	A-80		VII.D.A-80	VII.D-3(A-80)	Piping and components (External surfaces)	Steel	Air – indoor, uncontrolled (External)	Loss of material #*#due to general corrosion	Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components"	No	BWR/PWR
252	A-81		VII.I.A-81	VII.I-11(A-81)	External surfaces	Steel	Condensation (External)	Loss of material #*#due to general corrosion	Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components"	No	BWR/PWR
257	A-86		VII.A2. A-86	VII.A2-4(A-86)	Spent fuel storage racks: neutron-absorbing sheets (PWR)	Boraflex	Treated borated water	Reduction of neutron-absorbing capacity #*#due to boraflex degradation	Chapter XI.M22, “Boraflex Monitoring”	No	PWR

258	A-87	VII.A2. A-87	VII.A2-2(A-87)	Spent fuel storage racks: neutron-absorbing sheets (BWR)	Boraflex	Treated water	Reduction of neutron-absorbing capacity #*#due to boraflex degradation	Chapter XI.M22, “Boraflex Monitoring”	No	BWR
261	A-90	VII.G.A-90	VII.G-28(A-90)	Structural fire barriers: walls, ceilings and floors	Reinforced concrete	Air - indoor, uncontrolled	Concrete cracking and spalling #*#due to aggressive chemical attack, and reaction with aggregates	Chapter XI.M26, “Fire Protection,” and #*#Chapter XI.S6, “Structures Monitoring”	No	BWR/PWR
262	A-91	VII.G.A-91	VII.G-29(A-91)	Structural fire barriers: walls, ceilings and floors	Reinforced concrete	Air - indoor, uncontrolled	Loss of material #*#due to corrosion of embedded steel	Chapter XI.M26, “Fire Protection,” and #*#Chapter XI.S6, “Structures Monitoring”	No	BWR/PWR
247	A-78	VII.I.A-78	VII.I-9(A-78)	External surfaces	Steel	Air – outdoor (External)	Loss of material #*#due to general corrosion	Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components"	No	BWR/PWR
57	A-102	VII.I.A-102	VII.I-2(A-102)	Bolting	Steel	Air with borated water leakage	Loss of material #*#due to boric acid corrosion	Chapter XI.M10, “Boric Acid Corrosion”	No	PWR
46	A-08	VII.F2. A-08	VII.F2-3(A-08)	Ducting and components (Internal surfaces)	Steel	Condensation (Internal)	Loss of material #*#due to general, pitting, crevice, and (for drip pans and drain lines) microbiologically-influenced corrosion	Chapter XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components"	No	BWR/PWR

47	A-08	VII.F3. A-08	VII.F3-3(A-08)	Ducting and components (Internal surfaces)	Steel	Condensation (Internal)	Loss of material #*#due to general, pitting, crevice, and (for drip pans and drain lines) microbiologically-influenced corrosion	Chapter XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components"	No	BWR/PWR
48	A-08	VII.F4. A-08	VII.F4-2(A-08)	Ducting and components (Internal surfaces)	Steel	Condensation (Internal)	Loss of material #*#due to general, pitting, crevice, and (for drip pans and drain lines) microbiologically-influenced corrosion	Chapter XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components"	No	BWR/PWR
52	A-10	VII.F1. A-10	VII.F1-2(A-10)	Ducting and components (External surfaces)	Steel	Air – indoor, uncontrolled (External)	Loss of material #*#due to general corrosion	Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components"	No	BWR/PWR
53	A-10	VII.F2. A-10	VII.F2-2(A-10)	Ducting and components (External surfaces)	Steel	Air – indoor, uncontrolled (External)	Loss of material #*#due to general corrosion	Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components"	No	BWR/PWR
54	A-10	VII.F3. A-10	VII.F3-2(A-10)	Ducting and components (External surfaces)	Steel	Air – indoor, uncontrolled (External)	Loss of material #*#due to general corrosion	Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components"	No	BWR/PWR
117	A-61	VII.E4. A-61	VII.E4-15(A-61)	Piping, piping components, and piping elements	Stainless steel	Treated water >60°C (>140°F)	Cracking #*#due to stress corrosion cracking	Chapter XI.M7, “BWR Stress Corrosion Cracking,” and #*#Chapter XI.M2, “Water Chemistry”	No	BWR
56	A-100	VII.E1. A-100	VII.E1-4(A-100)	Heat exchanger components and tubes	Stainless steel	Treated borated water	Cumulative fatigue damage #*#due to fatigue	Fatigue is a time-limited aging analysis (TLAA) to be evaluated for the period of extended operation. See the SRP, Section 4.3 “Metal Fatigue,” for acceptable methods for meeting the requirements of 10 CFR 54.21(c)(1).	Yes, TLAA	PWR

43	A-06	VII.B.A-06	VII.B-2(A-06)	Cranes: structural girders	Steel	Air – indoor, uncontrolled (External)	Cumulative fatigue damage #*#due to fatigue	Fatigue is a time-limited aging analysis (TLAA) to be evaluated for the period of extended operation for structural girders of cranes that fall within the scope of 10 CFR 54 (Standard Review Plan, Section 4.7, “Other Plant-Specific Time-Limited Aging Analyses,” for generic guidance for meeting the requirements of 10 CFR 54.21(c)(1))	Yes, TLAA	BWR/PWR
65	A-66	VII.C1.A-66	VII.C1-4(A-66)	Heat exchanger components	Copper alloy >15% Zn	Raw water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR/PWR
69	A-69	VII.E1.A-69	VII.E1-9(A-69)	Heat exchanger components, non-regenerative	Stainless steel	Treated borated water >60°C (>140°F)	Cracking #*#due to stress corrosion cracking; cyclic loading	Chapter XI.M2, “Water Chemistry,” for PWR primary water. #*#The AMP is to be augmented by verifying the absence of cracking due to stress corrosion cracking and cyclic loading, or loss of material due to pitting and crevice corrosion. An acceptable verification program is to include temperature and radioactivity monitoring of the shell side water, and eddy current testing of tubes.	Yes, plant-specific	PWR
72	A-72	VII.C1.A-72	VII.C1-6(A-72)	Heat exchanger tubes	Copper alloy	Raw water	Reduction of heat transfer #*#due to fouling	Chapter XI.M20, "Open-Cycle Cooling Water System"	No	BWR/PWR
77	AP-43	VII.E4.AP-43	VII.E4-8(AP-43)	Piping, piping components, and piping elements	Copper alloy >15% Zn	Closed-cycle cooling water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR
78	AP-43	VII.F1.AP-43	VII.F1-17(AP-43)	Piping, piping components, and piping elements	Copper alloy >15% Zn	Closed-cycle cooling water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR/PWR

79	AP-43	VII.F2. AP-43	VII.F2-15(AP-43)	Piping, piping components, and piping elements	Copper alloy >15% Zn	Closed-cycle cooling water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR/PWR
55	A-10	VII.F4. A-10	VII.F4-1(A-10)	Ducting and components (External surfaces)	Steel	Air – indoor, uncontrolled (External)	Loss of material #*#due to general corrosion	Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components"	No	BWR/PWR
31	AP-31	VII.E4. AP-31	VII.E4-10(AP-31)	Piping, piping components, and piping elements	Gray cast iron	Treated water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR
4	A-47	VII.C3. A-47	VII.C3-3(A-47)	Piping, piping components, and piping elements	Copper alloy >15% Zn	Raw water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR/PWR
5	A-47	VII.G.A-47	VII.G-13(A-47)	Piping, piping components, and piping elements	Copper alloy >15% Zn	Raw water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR/PWR
6	A-47	VII.H2. A-47	VII.H2-13(A-47)	Piping, piping components, and piping elements	Copper alloy >15% Zn	Raw water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR/PWR
26	AP-31	VII.A3. AP-31	VII.A3-7(AP-31)	Piping, piping components, and piping elements	Gray cast iron	Treated water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	PWR
27	AP-31	VII.A4. AP-31	VII.A4-10(AP-31)	Piping, piping components, and piping elements	Gray cast iron	Treated water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR
28	AP-31	VII.C2. AP-31	VII.C2-9(AP-31)	Piping, piping components, and piping elements	Gray cast iron	Treated water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR/PWR

45	A-08	VII.F1. A-08	VII.F1-3(A-08)	Ducting and components (Internal surfaces)	Steel	Condensation (Internal)	Loss of material #*#due to general, pitting, crevice, and (for drip pans and drain lines) microbiologically-influenced corrosion	Chapter XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components"	No	BWR/PWR
30	AP-31	VII.E3. AP-31	VII.E3-12(AP-31)	Piping, piping components, and piping elements	Gray cast iron	Treated water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR/PWR
44	A-07	VII.B.A-07	VII.B-3(A-07)	Cranes: structural girders	Steel	Air – indoor, uncontrolled (External)	Loss of material #*#due to general corrosion	Chapter XI.M23, “Inspection of Overhead Heavy Load and Light Load (Related to Refueling) Handling Systems”	No	BWR/PWR
32	AP-31	VII.F1. AP-31	VII.F1-18(AP-31)	Piping, piping components, and piping elements	Gray cast iron	Treated water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR/PWR
33	AP-31	VII.F2. AP-31	VII.F2-16(AP-31)	Piping, piping components, and piping elements	Gray cast iron	Treated water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR/PWR
39	A-02	VII.H2. A-02	VII.H2-15(A-02)	Piping, piping components, and piping elements	Gray cast iron	Soil	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR/PWR
40	A-03	VII.I.A-03	VII.I-6(A-03)	Closure bolting	Steel	Air with steam or water leakage	Loss of material #*#due to general corrosion	Chapter XI.M18, "Bolting Integrity"	No	BWR/PWR
41	A-04	VII.I.A-04	VII.I-3(A-04)	Closure bolting	Steel, high-strength	Air with steam or water leakage	Cracking #*#due to stress corrosion cracking; cyclic loading	Chapter XI.M18, "Bolting Integrity"	No	BWR/PWR

42	A-05	VII.B.A-05	VII.B-1(A-05)	Cranes - rails	Steel	Air – indoor, uncontrolled (External)	Loss of material #*#due to wear	Chapter XI.M23, “Inspection of Overhead Heavy Load and Light Load (Related to Refueling) Handling Systems”	No	BWR/PWR
82	AP-43	VII.H1.AP-43	VII.H1-4(AP-43)	Piping, piping components, and piping elements	Copper alloy >15% Zn	Closed-cycle cooling water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR/PWR
29	AP-31	VII.E1.AP-31	VII.E1-14(AP-31)	Piping, piping components, and piping elements	Gray cast iron	Treated water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	PWR
1044	S-25	VIII.F.S-25	VIII.F-1(S-25)	Heat exchanger components and tubes	Stainless steel	Closed-cycle cooling water	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	PWR
80	AP-43	VII.F3.AP-43	VII.F3-17(AP-43)	Piping, piping components, and piping elements	Copper alloy >15% Zn	Closed-cycle cooling water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR/PWR
488	R-65	IV.A1.R-65	IV.A1-3(R-65)	Nozzles: feedwater	Steel (with or without stainless steel cladding)	Reactor coolant	Cracking #*#due to cyclic loading	Chapter XI.M5, “BWR Feedwater Nozzle”	No	BWR
489	R-66	IV.A1.R-66	IV.A1-2(R-66)	Nozzles: control rod drive return line	Steel (with or without stainless steel cladding)	Reactor coolant	Cracking #*#due to cyclic loading	Chapter XI.M6, “BWR Control Rod Drive Return Line Nozzle”	No	BWR

490	R-67	IV.A1. R-67	IV.A1-4(R-67)	Nozzles: low-pressure coolant injection or RHR injection mode	Steel	Reactor coolant and neutron flux	Loss of fracture toughness #*#due to neutron irradiation embrittlement	Neutron irradiation embrittlement is a time-limited aging analysis (TLAA) to be evaluated for the period of extended operation for all ferritic materials that have a neutron fluence greater than 1E17 n/cm2 (E >1 MeV) at the end of the license renewal term. In accordance with approved BWRVIP-74, the TLAA is to evaluate the impact of neutron embrittlement on: (a) the adjusted reference temperature values used for calculation of the plant's pressure-temperature limits, (b) the need for inservice inspection of circumferential welds, and (c) the Charpy upper shelf energy or the equivalent margins analyses performed in accordance with 10 CFR Part 50, Appendix G The applicant may choose to demonstrate that the materials of the nozzles are not controlling for the TLAA evaluations. See the Standard Review Plan, Section 4.2 "Reactor Vessel Neutron Embrittlement" for acceptable methods for meeting the requirements of 10 CFR 54.21(c).	Yes, TLAA	BWR
491	R-68	IV.A1. R-68	IV.A1-1(R-68)	Nozzle safe ends and welds: high-pressure core spray; low pressure core spray; control rod drive return line; recirculating water; low pressure coolant injection or RHR injection mode	Stainless steel; nickel alloy	Reactor coolant	Cracking #*#due to stress corrosion cracking, intergranular stress corrosion cracking	Chapter XI.M7, "BWR Stress Corrosion Cracking," and #*#Chapter XI.M2, "Water Chemistry"	No	BWR

1041	S-24	VIII.F.S-24	VIII.F-5(S-24)	Heat exchanger components and tubes	Steel	Raw water	Loss of material #*#due to general, pitting, crevice, galvanic, and microbiologically-influenced corrosion; fouling that leads to corrosion	Chapter XI.M20, "Open-Cycle Cooling Water System"	No	PWR
211	A-105	VII.F4.A-105	VII.F4-3(A-105)	Ducting; closure bolting	Steel	Air – indoor, uncontrolled (External)	Loss of material #*#due to general corrosion	Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components"	No	BWR/PWR
1043	S-25	VIII.E.S-25	VIII.E-2(S-25)	Heat exchanger components and tubes	Stainless steel	Closed-cycle cooling water	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR
210	A-105	VII.F3.A-105	VII.F3-4(A-105)	Ducting; closure bolting	Steel	Air – indoor, uncontrolled (External)	Loss of material #*#due to general corrosion	Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components"	No	BWR/PWR
1045	S-25	VIII.G.S-25	VIII.G-2(S-25)	Heat exchanger components and tubes	Stainless steel	Closed-cycle cooling water	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	PWR
94	AP-48	VII.J.AP-48	VII.J-7(AP-48)	Piping elements	Glass	Air	None	None	No	BWR/PWR
95	AP-49	VII.J.AP-49	VII.J-9(AP-49)	Piping elements	Glass	Fuel oil	None	None	No	BWR/PWR
96	AP-50	VII.J.AP-50	VII.J-11(AP-50)	Piping elements	Glass	Raw water	None	None	No	BWR/PWR
97	AP-51	VII.J.AP-51	VII.J-13(AP-51)	Piping elements	Glass	Treated water	None	None	No	BWR/PWR

99	A-33	VII.G.A-33	VII.G-24(A-33)	Piping, piping components, and piping elements	Steel	Raw water	Loss of material #*#due to general, pitting, crevice, and microbiologically-influenced corrosion; fouling that leads to corrosion	Chapter XI.M27, "Fire Water System"	No	BWR/PWR
100	A-34	VII.E1.A-34	VII.E1-18(A-34)	Piping, piping components, and piping elements	Steel	Air - indoor, uncontrolled	Cumulative fatigue damage #*#due to fatigue	Fatigue is a time-limited aging analysis (TLAA) to be evaluated for the period of extended operation. See the SRP, Section 4.3 “Metal Fatigue,” for acceptable methods for meeting the requirements of 10 CFR 54.21(c)(1).	Yes, TLAA	PWR
1042	S-24	VIII.G.S-24	VIII.G-7(S-24)	Heat exchanger components and tubes	Steel	Raw water	Loss of material #*#due to general, pitting, crevice, galvanic, and microbiologically-influenced corrosion; fouling that leads to corrosion	Chapter XI.M20, "Open-Cycle Cooling Water System"	No	PWR
199	A-52	VII.C2.A-52	VII.C2-10(A-52)	Piping, piping components, and piping elements	Stainless steel	Closed-cycle cooling water	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR
183	AP-2	VII.J.AP-2	VII.J-20(AP-2)	Piping, piping components, and piping elements	Steel	Air – indoor, controlled (External)	None	None	No	BWR/PWR
83	AP-43	VII.H2.AP-43	VII.H2-12(AP-43)	Piping, piping components, and piping elements	Copper alloy >15% Zn	Closed-cycle cooling water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR/PWR

193	A-50	VII.C2. A-50	VII.C2-8(A-50)	Piping, piping components, and piping elements	Gray cast iron	Closed-cycle cooling water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR/PWR
194	A-50	VII.F3. A-50	VII.F3-18(A-50)	Piping, piping components, and piping elements	Gray cast iron	Closed-cycle cooling water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR/PWR
195	A-51	VII.C1. A-51	VII.C1-11(A-51)	Piping, piping components, and piping elements	Gray cast iron	Raw water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR/PWR
196	A-51	VII.C3. A-51	VII.C3-4(A-51)	Piping, piping components, and piping elements	Gray cast iron	Raw water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR/PWR
212	A-105	VII.I.A-105	VII.I-7(A-105)	Ducting; closure bolting	Steel	Air – indoor, uncontrolled (External)	Loss of material #*#due to general corrosion	Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components"	No	BWR/PWR
198	A-51	VII.H2. A-51	VII.H2-14(A-51)	Piping, piping components, and piping elements	Gray cast iron	Raw water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR/PWR
81	AP-43	VII.F4. AP-43	VII.F4-13(AP-43)	Piping, piping components, and piping elements	Copper alloy >15% Zn	Closed-cycle cooling water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR/PWR
200	A-53	VII.C3. A-53	VII.C3-7(A-53)	Piping, piping components, and piping elements	Stainless steel	Raw water	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M20, "Open-Cycle Cooling Water System"	No	BWR/PWR
201	A-54	VII.C1. A-54	VII.C1-15(A-54)	Piping, piping components, and piping elements	Stainless steel	Raw water	Loss of material #*#due to pitting and crevice corrosion; fouling that leads to corrosion	Chapter XI.M20, "Open-Cycle Cooling Water System"	No	BWR/PWR

202	A-55	VII.G.A-55	VII.G-19(A-55)	Piping, piping components, and piping elements	Stainless steel	Raw water	Loss of material #*#due to pitting and crevice corrosion; fouling that leads to corrosion	Chapter XI.M27, "Fire Water System"	No	BWR/PWR
203	A-56	VII.A3.A-56	VII.A3-10(A-56)	Piping, piping components, and piping elements	Steel (with stainless steel or nickel-alloy cladding)	Treated borated water >60°C (>140°F)	Cracking #*#due to stress corrosion cracking	Chapter XI.M2, “Water Chemistry”	No	PWR
204	A-57	VII.E1.A-57	VII.E1-16(A-57)	Piping, piping components, and piping elements	Stainless steel	Treated borated water	Cumulative fatigue damage #*#due to fatigue	Fatigue is a time-limited aging analysis (TLAA) to be evaluated for the period of extended operation. See the SRP, Section 4.3 “Metal Fatigue,” for acceptable methods for meeting the requirements of 10 CFR 54.21(c)(1).	Yes, TLAA	PWR
208	A-105	VII.F1.A-105	VII.F1-4(A-105)	Ducting; closure bolting	Steel	Air – indoor, uncontrolled (External)	Loss of material #*#due to general corrosion	Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components"	No	BWR/PWR
209	A-105	VII.F2.A-105	VII.F2-4(A-105)	Ducting; closure bolting	Steel	Air – indoor, uncontrolled (External)	Loss of material #*#due to general corrosion	Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components"	No	BWR/PWR
197	A-51	VII.G.A-51	VII.G-14(A-51)	Piping, piping components, and piping elements	Gray cast iron	Raw water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR/PWR
384	AP-40	VII.G.AP-40	VII.G-6(AP-40)	Heat exchanger components	Steel	Air – outdoor (External)	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components"	No	BWR/PWR
312	SP-35	VIII.I.SP-35	VIII.I-8(SP-35)	Piping elements	Glass	Treated water	None	None	No	BWR/PWR

350	TP-8	III.B3.TP-8	III.B3-2(TP-8) III.B3-5(TP-5)	Support members; welds; bolted connections; support anchorage to building structure	Aluminum; galvanized steel; stainless steel	Air – indoor, uncontrolled	None	None	No	BWR/PWR
351	TP-8	III.B4.TP-8	III.B4-4(TP-8) III.B4-8(TP-5)	Support members; welds; bolted connections; support anchorage to building structure	Aluminum; galvanized steel; stainless steel	Air – indoor, uncontrolled	None	None	No	BWR/PWR
352	TP-8	III.B5.TP-8	III.B5-2(TP-8) III.B5-5(TP-5)	Support members; welds; bolted connections; support anchorage to building structure	Aluminum; galvanized steel; stainless steel	Air – indoor, uncontrolled	None	None	No	BWR/PWR
370	EP-49	V.D1.EP-49	V.D1-32(EP-49)	Pump casings	Steel (with stainless steel cladding)	Treated water (borated)	Loss of material #*#due to cladding breach	A plant-specific aging management program is to be evaluated #*#Reference NRC Information Notice 94-63, “Boric Acid Corrosion of Charging Pump Casings Caused by Cladding Cracks."	Yes, verify that plant-specific program addresses clad breach	PWR
377	AP-36	VII.J.AP-36	VII.J-1(AP-36)	Piping, piping components, and piping elements	Aluminum	Air – indoor, controlled (External)	None	None	No	BWR/PWR
348	TP-8	III.B1-3.TP-8	III.B1.3-4(TP-8) III.B1.3-5(TP	Support members; welds; bolted connections; support anchorage to building structure	Aluminum; galvanized steel; stainless steel	Air – indoor, uncontrolled	None	None	No	BWR/PWR
383	AP-4	VII.J.AP-4	VII.J-22(AP-4)	Piping, piping components, and piping elements	Steel	Air – dry	None	None	No	BWR/PWR

347	TP-8	III.B1.2 .TP-8	III.B1.2-4(TP-8) III.B1.2-5(TP	Support members; welds; bolted connections; support anchorage to building structure	Aluminum; galvanized steel; stainless steel	Air – indoor, uncontrolled	None	None	No	BWR/PWR
385	AP-40	VII.H2. AP-40	VII.H2-4(AP-40)	Heat exchanger components	Steel	Air – outdoor (External)	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components"	No	BWR/PWR
386	AP-41	VII.F1. AP-41	VII.F1-10(AP-41)	Heat exchanger components	Steel	Air – indoor, uncontrolled (External)	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components"	No	BWR/PWR
396	AP-6	VII.J.AP-6	VII.J-23(AP-6)	Piping, piping components, and piping elements	Steel	Gas	None	None	No	BWR/PWR
399	T-33	III.B1.1 .T-33	III.B1.1-15(T-33)	Vibration isolation elements	Non-metallic (e.g., rubber)	Air – indoor, uncontrolled or Air – outdoor	Reduction or loss of isolation function #*#due to radiation hardening, temperature, humidity, sustained vibratory loading	Chapter XI.S3, “ASME Section XI, Subsection IWF”	No	BWR/PWR
400	T-33	III.B1.2 .T-33	III.B1.2-12(T-33)	Vibration isolation elements	Non-metallic (e.g., rubber)	Air – indoor, uncontrolled or Air – outdoor	Reduction or loss of isolation function #*#due to radiation hardening, temperature, humidity, sustained vibratory loading	Chapter XI.S3, “ASME Section XI, Subsection IWF”	No	BWR/PWR

401	T-33	III.B1.3 .T-33	III.B1.3-11(T-33)	Vibration isolation elements	Non-metallic (e.g., rubber)	Air – indoor, uncontrolled or Air – outdoor	Reduction or loss of isolation function #*#due to radiation hardening, temperature, humidity, sustained vibratory loading	Chapter XI.S3, “ASME Section XI, Subsection IWF”	No	BWR/PWR
404	TP-10	III.B1.1 .TP-10	III.B1.1-11(TP-10)	Support members; welds; bolted connections; support anchorage to building structure	Steel; stainless steel	Treated water <60C (<140 F)	Loss of material #*#due to general (steel only), pitting, and crevice corrosion	Chapter XI.M2, “Water Chemistry,” for BWR water, and #*#Chapter XI.S3, “ASME Section XI, Subsection IWF”	No	BWR/PWR
378	AP-37	VII.J.AP-37	VII.J-2(AP-37)	Piping, piping components, and piping elements	Aluminum	Gas	None	None	No	BWR/PWR
332	TP-4	III.B2.TP-4	III.B2-9(TP-4)	Support members; welds; bolted connections; support anchorage to building structure	Stainless steel	Air with borated water leakage	None	None	No	BWR/PWR
313	SP-36	VIII.E.SP-36	VIII.E-27(SP-36)	Piping, piping components, and piping elements	Stainless steel	Raw water	Loss of material #*#due to pitting, crevice, and microbiologically-influenced corrosion	Chapter XI.M20, "Open-Cycle Cooling Water System"	No	BWR/PWR
314	SP-36	VIII.F.SP-36	VIII.F-22(SP-36)	Piping, piping components, and piping elements	Stainless steel	Raw water	Loss of material #*#due to pitting, crevice, and microbiologically-influenced corrosion	Chapter XI.M20, "Open-Cycle Cooling Water System"	No	PWR

315	SP-36	VIII.G. SP-36	VIII.G-30(SP-36)	Piping, piping components, and piping elements	Stainless steel	Raw water	Loss of material #*#due to pitting, crevice, and microbiologically-influenced corrosion	Chapter XI.M20, "Open-Cycle Cooling Water System"	No	PWR
327	TP-3	III.B4.TP-3	III.B4-6(TP-3)	Support members; welds; bolted connections; support anchorage to building structure	Galvanized steel; aluminum	Air with borated water leakage	Loss of material #*#due to boric acid corrosion	Chapter XI.M10, “Boric Acid Corrosion”	No	PWR
328	TP-3	III.B5.TP-3	III.B5-4(TP-3)	Support members; welds; bolted connections; support anchorage to building structure	Galvanized steel; aluminum	Air with borated water leakage	Loss of material #*#due to boric acid corrosion	Chapter XI.M10, “Boric Acid Corrosion”	No	PWR
329	TP-4	III.B1.1.TP-4	III.B1.1-10(TP-4)	Support members; welds; bolted connections; support anchorage to building structure	Stainless steel	Air with borated water leakage	None	None	No	BWR/PWR
349	TP-8	III.B2.TP-8	III.B2-4(TP-8) III.B2-8(TP-5)	Support members; welds; bolted connections; support anchorage to building structure	Aluminum; galvanized steel; stainless steel	Air – indoor, uncontrolled	None	None	No	BWR/PWR
331	TP-4	III.B1.3.TP-4	III.B1.3-8(TP-4)	Support members; welds; bolted connections; support anchorage to building structure	Stainless steel	Air with borated water leakage	None	None	No	BWR/PWR
411	AP-79	VII.E1.AP-79	VII.E1-17(AP-79)	Piping, piping components, and piping elements	Steel (with stainless steel cladding); stainless steel	Treated borated water	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M2, “Water Chemistry”	No	PWR

333	TP-4	III.B3.TP-4	III.B3-6(TP-4)	Support members; welds; bolted connections; support anchorage to building structure	Stainless steel	Air with borated water leakage	None	None	No	BWR/PWR
334	TP-4	III.B4.TP-4	III.B4-9(TP-4)	Support members; welds; bolted connections; support anchorage to building structure	Stainless steel	Air with borated water leakage	None	None	No	BWR/PWR
335	TP-4	III.B5.TP-4	III.B5-6(TP-4)	Support members; welds; bolted connections; support anchorage to building structure	Stainless steel	Air with borated water leakage	None	None	No	BWR/PWR
343	TP-6	III.B2.TP-6	III.B2-7(TP-6)	Support members; welds; bolted connections; support anchorage to building structure	Galvanized steel; aluminum; stainless steel	Air – outdoor	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
344	TP-6	III.B4.TP-6	III.B4-7(TP-6)	Support members; welds; bolted connections; support anchorage to building structure	Galvanized steel; aluminum; stainless steel	Air – outdoor	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
345	TP-7	III.A6.TP-7	III.A6-12(TP-7)	Seals; gasket; moisture barriers (caulking, flashing, and other sealants)	Elastomers (such as EPDM rubber)	Various	Loss of sealing #*#due to deterioration of seals, gaskets, and moisture barriers (caulking, flashing, and other sealants)	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR

346	TP-8	III.B1.1 .TP-8	III.B1.1-6(TP-8) III.B1.1-7(TP	Support members; welds; bolted connections; support anchorage to building structure	Aluminum; galvanized steel; stainless steel	Air – indoor, uncontrolled	None	None	No	BWR/PWR
330	TP-4	III.B1.2 .TP-4	III.B1.2-8(TP-4)	Support members; welds; bolted connections; support anchorage to building structure	Stainless steel	Air with borated water leakage	None	None	No	BWR/PWR
472	R-17	IV.C2. R-17	IV.C2-9(R-17)	External surfaces	Steel	Air with borated water leakage	Loss of material #*#due to boric acid corrosion	Chapter XI.M10, “Boric Acid Corrosion”	No	PWR
449	AP-52	VII.J.A P-52	VII.J-12(AP-52)	Piping elements	Glass	Treated borated water	None	None	No	BWR/PWR
455	AP-55	VII.H2. AP-55	VII.H2-18(AP-55)	Piping, piping components, and piping elements	Stainless steel	Raw water	Loss of material #*#due to pitting, crevice, and microbiologically-influenced corrosion	Chapter XI.M20, "Open-Cycle Cooling Water System"	No	BWR/PWR
462	C-10	II.A1.C-10	II.A1-10(C-10)	Prestressing system: tendons; anchorage components	Steel	Air – indoor, uncontrolled or Air – outdoor	Loss of material #*#due to corrosion	Chapter XI.S2, “ASME Section XI, Subsection IWL”	No	PWR
463	C-10	II.B2.2. C-10	II.B2.2-9(C-10)	Prestressing system: tendons; anchorage components	Steel	Air – indoor, uncontrolled or Air – outdoor	Loss of material #*#due to corrosion	Chapter XI.S2, “ASME Section XI, Subsection IWL”	No	BWR

464	C-11	II.A1.C-11	II.A1-9(C-11)	Prestressing system: tendons	Steel	Air – indoor, uncontrolled or Air – outdoor	Loss of prestress #*#due to relaxation; shrinkage; creep; elevated temperature	Loss of tendon prestress is a time-limited aging analysis (TLAA) to be evaluated for the period of extended operation. #*#See the SRP, Section 4.5, “Concrete Containment Tendon Prestress” for acceptable methods for meeting the requirements of 10 CFR 54.21(c)(1)(i) and (ii). See Chapter X.S1 of this report for meeting the requirements of 10 CFR 54.21(c)(1)(iii). #*#For periodic monitoring of prestress, see Chapter XI.S2.	Yes, TLAA	PWR
465	C-11	II.B2.2.C-11	II.B2.2-8(C-11)	Prestressing system: tendons	Steel	Air – indoor, uncontrolled or Air – outdoor	Loss of prestress #*#due to relaxation; shrinkage; creep; elevated temperature	Loss of tendon prestress is a time-limited aging analysis (TLAA) to be evaluated for the period of extended operation. #*#See the SRP, Section 4.5, “Concrete Containment Tendon Prestress” for acceptable methods for meeting the requirements of 10 CFR 54.21(c)(1)(i) and (ii). See Chapter X.S1 of this report for meeting the requirements of 10 CFR 54.21(c)(1)(iii). #*#For periodic monitoring of prestress, see Chapter XI.S2.	Yes, TLAA	BWR
409	AP-79	VII.A2.AP-79	VII.A2-1(AP-79)	Piping, piping components, and piping elements	Steel (with stainless steel cladding); stainless steel	Treated borated water	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M2, “Water Chemistry”	No	BWR/PWR
469	C-13	II.B4.C-13	II.B4-4(C-13)	Penetration sleeves; penetration bellows	Steel; stainless steel; dissimilar metal welds	Air – indoor, uncontrolled or Air – outdoor	Cumulative fatigue damage #*#due to fatigue #*#(Only if CLB fatigue analysis exists)	Fatigue is a time-limited aging analysis (TLAA) to be evaluated for the period of extended operation. See the SRP, Section 4.6, “Containment Liner Plate and Penetration Fatigue Analysis” for acceptable methods for meeting the requirements of 10 CFR 54.21(c)(1).	Yes, TLAA	BWR

446	AP-43	VII.C2. AP-43	VII.C2-6(AP-43)	Piping, piping components, and piping elements	Copper alloy >15% Zn	Closed-cycle cooling water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR/PWR
473	R-17	IV.D1. R-17	IV.D1-3(R-17)	External surfaces	Steel	Air with borated water leakage	Loss of material #*#due to boric acid corrosion	Chapter XI.M10, “Boric Acid Corrosion”	No	PWR
474	R-52	IV.C1. R-52	IV.C1-2(R-52)	Class 1 piping, piping components, and piping elements	Cast austenitic stainless steel	Reactor coolant >250°C (>482°F)	Loss of fracture toughness #*#due to thermal aging embrittlement	Chapter XI.M12, "Thermal Aging Embrittlement of Cast Austenitic Stainless Steel (CASS)"	No	BWR
475	R-52	IV.C2. R-52	IV.C2-4(R-52)	Class 1 piping, piping components, and piping elements	Cast austenitic stainless steel	Reactor coolant >250°C (>482°F)	Loss of fracture toughness #*#due to thermal aging embrittlement	Chapter XI.M12, "Thermal Aging Embrittlement of Cast Austenitic Stainless Steel (CASS)"	No	PWR
476	R-53	IV.B1. R-53	IV.B1-14(R-53)	Reactor vessel internal components	Stainless steel; nickel alloy	Reactor coolant and neutron flux	Cumulative fatigue damage #*#due to fatigue	Fatigue is a time-limited aging analysis (TLAA) to be evaluated for the period of extended operation. See the SRP, Section 4.3 “Metal Fatigue,” for acceptable methods for meeting the requirements of 10 CFR 54.21(c)(1).	Yes, TLAA	BWR
479	R-53	IV.B4. R-53	IV.B4-37(R-53)	Reactor vessel internal components	Stainless steel; nickel alloy	Reactor coolant and neutron flux	Cumulative fatigue damage #*#due to fatigue	Fatigue is a time-limited aging analysis (TLAA) to be evaluated for the period of extended operation. See the Standard Review Plan, Section 4.3 “Metal Fatigue,” for acceptable methods for meeting the requirements of 10 CFR 54.21(c)(1)	Yes, TLAA	PWR
480	R-56	IV.C2. R-56	IV.C2-26(R-56)	Reactor coolant system piping and fittings: cold leg; hot leg; surge line; spray line	Steel (with stainless steel cladding); stainless steel	Reactor coolant	Cracking #*#due to cyclic loading	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for Class 1 components	No	PWR

481	R-58	IV.C2.R-58	IV.C2-18(R-58)	Pressurizer components	Steel (with stainless steel or nickel-alloy cladding); stainless steel	Reactor coolant	Cracking #*#due to cyclic loading	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for Class 1 components, and #*#Chapter XI.M2, “Water Chemistry” for PWR primary water #*#Cracks in the pressurizer cladding could propagate from cyclic loading into the ferrite base metal and weld metal. However, because the weld metal between the surge nozzle and the vessel lower head is subjected to the maximum stress cycles and the area is periodically inspected as part of the ISI program, the existing AMP is adequate for managing the effect of pressurizer clad cracking.	No	PWR
468	C-13	II.A3.C-13	II.A3-4(C-13)	Penetration sleeves; penetration bellows	Steel; stainless steel; dissimilar metal welds	Air – indoor, uncontrolled or Air – outdoor	Cumulative fatigue damage #*#due to fatigue #*#(Only if CLB fatigue analysis exists)	Fatigue is a time-limited aging analysis (TLAA) to be evaluated for the period of extended operation. See the SRP, Section 4.6, “Containment Liner Plate and Penetration Fatigue Analysis” for acceptable methods for meeting the requirements of 10 CFR 54.21(c)(1).	Yes, TLAA	PWR
181	AP-18	VII.J.AP-18	VII.J-16(AP-18)	Piping, piping components, and piping elements	Stainless steel	Air with borated water leakage	None	None	No	BWR/PWR
437	EP-37	V.D1.EP-37	V.D1-3(EP-37)	Heat exchanger components	Copper alloy >15% Zn	Closed-cycle cooling water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	PWR
412	AP-8	VII.J.AP-8	VII.J-3(AP-8)	Piping, piping components, and piping elements	Copper alloy	Air – dry	None	None	No	BWR/PWR
417	AP-81	VII.D.AP-81	VII.D-4(AP-81)	Piping, piping components, and piping elements	Stainless steel	Condensation (Internal)	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M24, “Compressed Air Monitoring”	No	BWR/PWR

418	AP-82	VII.E1. AP-82	VII.E1-20(AP-82)	Piping, piping components, and piping elements; tanks	Stainless steel	Treated borated water >60°C (>140°F)	Cracking #*#due to stress corrosion cracking	Chapter XI.M2, “Water Chemistry”	No	PWR
420	AP-85	VII.E1. AP-85	VII.E1-21(AP-85)	Pump Casings	Steel (with stainless steel or nickel-alloy cladding)	Treated borated water	Loss of material#*#due to cladding breach	A plant-specific aging management program is to be evaluated. #*#Reference NRC Information Notice 94-63, “Boric Acid Corrosion of Charging Pump Casings Caused by Cladding Cracks."	Yes, verify that plant-specific program addresses clad cracking	PWR
421	AP-9	VII.J.AP-9	VII.J-4(AP-9)	Piping, piping components, and piping elements	Copper alloy	Gas	None	None	No	BWR/PWR
435	EP-37	V.A.EP-37	V.A-6(EP-37)	Heat exchanger components	Copper alloy >15% Zn	Closed-cycle cooling water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	PWR
448	AP-43	VII.E3. AP-43	VII.E3-10(AP-43)	Piping, piping components, and piping elements	Copper alloy >15% Zn	Closed-cycle cooling water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR/PWR
438	EP-37	V.D2.EP-37	V.D2-4(EP-37)	Heat exchanger components	Copper alloy >15% Zn	Closed-cycle cooling water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR
447	AP-43	VII.E1. AP-43	VII.E1-13(AP-43)	Piping, piping components, and piping elements	Copper alloy >15% Zn	Closed-cycle cooling water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	PWR
440	AP-41	VII.F3. AP-41	VII.F3-10(AP-41)	Heat exchanger components	Steel	Air – indoor, uncontrolled (External)	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components"	No	BWR/PWR

441	AP-41	VII.F4. AP-41	VII.F4-7(AP-41)	Heat exchanger components	Steel	Air – indoor, uncontrolled (External)	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components"	No	BWR/PWR
442	AP-41	VII.G.AP-41	VII.G-5(AP-41)	Heat exchanger components	Steel	Air – indoor, uncontrolled (External)	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components"	No	BWR/PWR
443	AP-41	VII.H2. AP-41	VII.H2-3(AP-41)	Heat exchanger components	Steel	Air – indoor, uncontrolled (External)	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components"	No	BWR/PWR
444	AP-43	VII.A3. AP-43	VII.A3-6(AP-43)	Piping, piping components, and piping elements	Copper alloy >15% Zn	Closed-cycle cooling water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	PWR
445	AP-43	VII.A4. AP-43	VII.A4-8(AP-43)	Piping, piping components, and piping elements	Copper alloy >15% Zn	Closed-cycle cooling water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR
410	AP-79	VII.A3. AP-79	VII.A3-8(AP-79)	Piping, piping components, and piping elements	Steel (with stainless steel cladding); stainless steel	Treated borated water	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M2, “Water Chemistry”	No	PWR
436	EP-37	V.B.EP-37	V.B-5(EP-37)	Heat exchanger components	Copper alloy >15% Zn	Closed-cycle cooling water	Loss of material #*#due to selective leaching	Chapter XI.M33, “Selective Leaching”	No	BWR
439	EP-38	V.E.EP-38	V.E-11(EP-38)	Piping, piping components, and piping elements	Copper alloy >15% Zn	Air with borated water leakage	Loss of material #*#due to boric acid corrosion	Chapter XI.M10, “Boric Acid Corrosion”	No	PWR

310	SP-33		VIII.I.SP-33	VIII.I-4(SP-33)	Piping elements	Glass	Air	None	None	No	BWR/PWR
304	SP-31		VIII.G.SP-31	VIII.G-20(SP-31)	Piping, piping components, and piping elements	Copper alloy	Raw water	Loss of material #*#due to pitting, crevice, and microbiologically-influenced corrosion	Chapter XI.M20, "Open-Cycle Cooling Water System"	No	PWR
303	SP-31		VIII.F.SP-31	VIII.F-14(SP-31)	Piping, piping components, and piping elements	Copper alloy	Raw water	Loss of material #*#due to pitting, crevice, and microbiologically-influenced corrosion	Chapter XI.M20, "Open-Cycle Cooling Water System"	No	PWR
302	SP-31		VIII.E.SP-31	VIII.E-18(SP-31)	Piping, piping components, and piping elements	Copper alloy	Raw water	Loss of material #*#due to pitting, crevice, and microbiologically-influenced corrosion	Chapter XI.M20, "Open-Cycle Cooling Water System"	No	BWR/PWR
301	SP-31		VIII.A.SP-31	VIII.A-4(SP-31)	Piping, piping components, and piping elements	Copper alloy	Raw water	Loss of material #*#due to pitting, crevice, and microbiologically-influenced corrosion	Chapter XI.M20, "Open-Cycle Cooling Water System"	No	BWR/PWR
311	SP-34		VIII.I.SP-34	VIII.I-7(SP-34)	Piping elements	Glass	Raw water	None	None	No	BWR/PWR
2412	AP-198	A-01	VII.C1.AP-198	VII.C1-18(A-01)	Piping, piping components, and piping elements	Steel (with coating or wrapping)	Soil	Loss of material #*#due to general, pitting, crevice, and microbiologically-influenced corrosion	Chapter XI.M41, "Buried, Underground, and Limited-Access Piping and Tanks"	No	BWR/PWR

2415	AP-198	A-01	VII.H1.AP-198	VII.H1-9(A-01)	Piping, piping components, and piping elements	Steel (with coating or wrapping)	Soil	Loss of material #*#due to general, pitting, crevice, and microbiologically-influenced corrosion	Chapter XI.M41, "Buried, Underground, and Limited-Access Piping and Tanks"	No	BWR/PWR
2413	AP-198	A-01	VII.C3.AP-198	VII.C3-9(A-01)	Piping, piping components, and piping elements	Steel (with coating or wrapping)	Soil	Loss of material #*#due to general, pitting, crevice, and microbiologically-influenced corrosion	Chapter XI.M41, "Buried, Underground, and Limited-Access Piping and Tanks"	No	BWR/PWR
2414	AP-198	A-01	VII.G.AP-198	VII.G-25(A-01)	Piping, piping components, and piping elements	Steel (with coating or wrapping)	Soil	Loss of material #*#due to general, pitting, crevice, and microbiologically-influenced corrosion	Chapter XI.M41, "Buried, Underground, and Limited-Access Piping and Tanks"	No	BWR/PWR
1467	AP-99	A-09	VII.F1.AP-99	VII.F1-1(A-09)	Ducting and components	Stainless steel	Condensation	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components"	No	BWR/PWR
1469	AP-99	A-09	VII.F3.AP-99	VII.F3-1(A-09)	Ducting and components	Stainless steel	Condensation	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components"	No	BWR/PWR
1468	AP-99	A-09	VII.F2.AP-99	VII.F2-1(A-09)	Ducting and components	Stainless steel	Condensation	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components"	No	BWR/PWR

1508	AP-121	A-103	VII.D.AP-121	VII.D-1(A-103)	Closure bolting	Steel; stainless steel	Condensation	Loss of material #*#due to general (steel only), pitting, and crevice corrosion	Chapter XI.M18, "Bolting Integrity"	No	BWR/PWR
1509	AP-122	A-104	VII.E1.AP-122	VII.E1-8(A-104)	High-pressure pump, closure bolting	Steel, high-strength	Air with steam or water leakage	Cracking #*#due to stress corrosion cracking; cyclic loading	Chapter XI.M18, "Bolting Integrity"	No	BWR/PWR
1470	AP-100	A-15	VII.A3.AP-100	VII.A3-1(A-15)	Elastomers, linings	Elastomers	Treated borated water	Hardening and loss of strength #*#due to elastomer degradation	Chapter XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components"	No	PWR
1471	AP-101	A-16	VII.A4.AP-101	VII.A4-1(A-16)	Elastomers, linings	Elastomers	Treated water	Hardening and loss of strength #*#due to elastomer degradation	Chapter XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components"	No	BWR
1473	AP-102	A-17	VII.F2.AP-102	VII.F2-7(A-17)	Elastomer: seals and components	Elastomers	Air – indoor, uncontrolled (Internal/External)	Hardening and loss of strength #*#due to elastomer degradation	Chapter XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components"	No	BWR/PWR
1474	AP-102	A-17	VII.F3.AP-102	VII.F3-7(A-17)	Elastomer: seals and components	Elastomers	Air – indoor, uncontrolled (Internal/External)	Hardening and loss of strength #*#due to elastomer degradation	Chapter XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components"	No	BWR/PWR
1475	AP-102	A-17	VII.F4.AP-102	VII.F4-6(A-17)	Elastomer: seals and components	Elastomers	Air – indoor, uncontrolled (Internal/External)	Hardening and loss of strength #*#due to elastomer degradation	Chapter XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components"	No	BWR/PWR

1472	AP-102	A-17	VII.F1. AP-102	VII.F1-7(A-17)	Elastomer: seals and components	Elastomers	Air – indoor, uncontrolled (Internal/External)	Hardening and loss of strength #*#due to elastomer degradation	Chapter XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components"	No	BWR/PWR
1478	AP-103	A-18	VII.F2. AP-103	VII.F2-6(A-18)	Elastomer: seals and components	Elastomers	Air – indoor, uncontrolled (Internal)	Loss of material #*#due to wear	Chapter XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components"	No	BWR/PWR
1477	AP-103	A-18	VII.F1. AP-103	VII.F1-6(A-18)	Elastomer: seals and components	Elastomers	Air – indoor, uncontrolled (Internal)	Loss of material #*#due to wear	Chapter XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components"	No	BWR/PWR
1479	AP-103	A-18	VII.F3. AP-103	VII.F3-6(A-18)	Elastomer: seals and components	Elastomers	Air – indoor, uncontrolled (Internal)	Loss of material #*#due to wear	Chapter XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components"	No	BWR/PWR
1480	AP-103	A-18	VII.F4. AP-103	VII.F4-5(A-18)	Elastomer: seals and components	Elastomers	Air – indoor, uncontrolled (Internal)	Loss of material #*#due to wear	Chapter XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components"	No	BWR/PWR
223	A-19	A-19	VII.G.A-19	VII.G-1(A-19)	Fire barrier penetration seals	Elastomers	Air - indoor, uncontrolled	Increased hardness; shrinkage; loss of strength #*#due to weathering	Chapter XI.M26, "Fire Protection"	No	BWR/PWR
224	A-20	A-20	VII.G.A-20	VII.G-2(A-20)	Fire barrier penetration seals	Elastomers	Air – outdoor	Increased hardness; shrinkage; loss of strength #*#due to weathering	Chapter XI.M26, "Fire Protection"	No	BWR/PWR
2435	AP-202	A-25	VII.H2. AP-202	VII.H2-23(A-25)	Piping, piping components, and piping elements; tanks	Steel	Closed-cycle cooling water	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR
2430	AP-202	A-25	VII.C2. AP-202	VII.C2-14(A-25)	Piping, piping components, and piping elements; tanks	Steel	Closed-cycle cooling water	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR

2431	AP-202	A-25	VII.F1. AP-202	VII.F1-20(A-25)	Piping, piping components, and piping elements; tanks	Steel	Closed-cycle cooling water	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR
2432	AP-202	A-25	VII.F2. AP-202	VII.F2-18(A-25)	Piping, piping components, and piping elements; tanks	Steel	Closed-cycle cooling water	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR
2433	AP-202	A-25	VII.F3. AP-202	VII.F3-20(A-25)	Piping, piping components, and piping elements; tanks	Steel	Closed-cycle cooling water	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR
2434	AP-202	A-25	VII.F4. AP-202	VII.F4-16(A-25)	Piping, piping components, and piping elements; tanks	Steel	Closed-cycle cooling water	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR
1481	AP-104	A-27	VII.H2. AP-104	VII.H2-2(A-27)	Piping, piping components, and piping elements, diesel engine exhaust	Steel; stainless steel	Diesel exhaust	Loss of material #*#due to general (steel only), pitting, and crevice corrosion	Chapter XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components"	No	BWR/PWR
2593	AP-234	A-28	VII.G.AP-234	VII.G-21(A-28)	Piping, piping components, and piping elements	Steel	Fuel oil	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M30, "Fuel Oil Chemistry", and #*#Chapter XI.M32, "One-Time Inspection"	No	BWR/PWR

1483	AP-105	A-30	VII.H2. AP-105	VII.H2-24(A-30)	Piping, piping components, and piping elements; tanks	Steel	Fuel oil	Loss of material #*#due to general, pitting, crevice, and microbiologically-influenced corrosion; fouling that leads to corrosion	Chapter XI.M30, “Fuel Oil Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
1482	AP-105	A-30	VII.H1. AP-105	VII.H1-10(A-30)	Piping, piping components, and piping elements; tanks	Steel	Fuel oil	Loss of material #*#due to general, pitting, crevice, and microbiologically-influenced corrosion; fouling that leads to corrosion	Chapter XI.M30, “Fuel Oil Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
1485	AP-106	A-35	VII.E4. AP-106	VII.E4-17(A-35)	Piping, piping components, and piping elements	Steel	Treated water	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR
1484	AP-106	A-35	VII.E3. AP-106	VII.E3-18(A-35)	Piping, piping components, and piping elements	Steel	Treated water	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR

2407	AP-194	A-38	VII.C3. AP-194	VII.C3-10(A-38)	Piping, piping components, and piping elements	Steel (with coating or lining)	Raw water	Loss of material #*#due to general, pitting, crevice, and microbiologically-influenced corrosion; fouling that leads to corrosion; lining/coating degradation	Chapter XI.M20, "Open-Cycle Cooling Water System"	No	BWR/PWR
2408	AP-194	A-38	VII.H2. AP-194	VII.H2-22(A-38)	Piping, piping components, and piping elements	Steel (with coating or lining)	Raw water	Loss of material #*#due to general, pitting, crevice, and microbiologically-influenced corrosion; fouling that leads to corrosion; lining/coating degradation	Chapter XI.M20, "Open-Cycle Cooling Water System"	No	BWR/PWR
2406	AP-194	A-38	VII.C1. AP-194	VII.C1-19(A-38)	Piping, piping components, and piping elements	Steel (with coating or lining)	Raw water	Loss of material #*#due to general, pitting, crevice, and microbiologically-influenced corrosion; fouling that leads to corrosion; lining/coating degradation	Chapter XI.M20, "Open-Cycle Cooling Water System"	No	BWR/PWR

1486	AP-107	A-39	VII.A3. AP-107	VII.A3-9(A-39)	Piping, piping components, and piping elements	Steel (with elastomer lining)	Treated water	Loss of material #*#due to pitting and crevice corrosion (only for steel after lining/cladding degradation)	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR
1487	AP-108	A-40	VII.A4. AP-108	VII.A4-12(A-40)	Piping, piping components, and piping elements	Steel (with elastomer lining or stainless steel cladding)	Treated water	Loss of material #*#due to pitting and crevice corrosion (only for steel after lining/cladding degradation)	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR
2409	AP-195	A-43	VII.C3. AP-195	VII.C3-2(A-43)	Piping, piping components, and piping elements	Copper alloy	Raw water	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M20, "Open-Cycle Cooling Water System"	No	BWR/PWR
2410	AP-196	A-44	VII.C1. AP-196	VII.C1-9(A-44)	Piping, piping components, and piping elements	Copper alloy	Raw water	Loss of material #*#due to general, pitting, crevice, and microbiologically-influenced corrosion; fouling that leads to corrosion	Chapter XI.M20, "Open-Cycle Cooling Water System"	No	BWR/PWR
2411	AP-197	A-45	VII.G.AP-197	VII.G-12(A-45)	Piping, piping components, and piping elements	Copper alloy	Raw water	Loss of material #*#due to general, pitting, crevice, and microbiologically-influenced corrosion; fouling that leads to corrosion	Chapter XI.M27, "Fire Water System"	No	BWR/PWR

1490	AP-109	A-46	VII.F3. AP-109	VII.F3-16(A-46)	Piping, piping components, and piping elements	Copper alloy	Condensation (External)	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components"	No	BWR/PWR
1491	AP-109	A-46	VII.F4. AP-109	VII.F4-12(A-46)	Piping, piping components, and piping elements	Copper alloy	Condensation (External)	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components"	No	BWR/PWR
1488	AP-109	A-46	VII.F1. AP-109	VII.F1-16(A-46)	Piping, piping components, and piping elements	Copper alloy	Condensation (External)	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components"	No	BWR/PWR
1489	AP-109	A-46	VII.F2. AP-109	VII.F2-14(A-46)	Piping, piping components, and piping elements	Copper alloy	Condensation (External)	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components"	No	BWR/PWR
1492	AP-110	A-58	VII.A4. AP-110	VII.A4-11(A-58)	Piping, piping components, and piping elements	Stainless steel	Treated water	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR
1494	AP-110	A-58	VII.E4. AP-110	VII.E4-14(A-58)	Piping, piping components, and piping elements	Stainless steel	Treated water	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR
1493	AP-110	A-58	VII.E3. AP-110	VII.E3-15(A-58)	Piping, piping components, and piping elements	Stainless steel	Treated water	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR
1889	AP-181	A-59	VII.E2. AP-181	VII.E2-2(A-59)	Piping, piping components, and piping elements	Stainless steel	Sodium pentaborate solution >60°C (>140°F)	Cracking #*#due to stress corrosion cracking	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR

2392	AP-189	A-63	VII.A4.AP-189	VII.A4-3(A-63)	Heat exchanger components	Steel	Closed-cycle cooling water	Loss of material #*#due to general, pitting, crevice, and galvanic corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR
2396	AP-189	A-63	VII.E4.AP-189	VII.E4-2(A-63)	Heat exchanger components	Steel	Closed-cycle cooling water	Loss of material #*#due to general, pitting, crevice, and galvanic corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR
2400	AP-189	A-63	VII.F4.AP-189	VII.F4-8(A-63)	Heat exchanger components	Steel	Closed-cycle cooling water	Loss of material #*#due to general, pitting, crevice, and galvanic corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR
2391	AP-189	A-63	VII.A3.AP-189	VII.A3-3(A-63)	Heat exchanger components	Steel	Closed-cycle cooling water	Loss of material #*#due to general, pitting, crevice, and galvanic corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR
2397	AP-189	A-63	VII.F1.AP-189	VII.F1-11(A-63)	Heat exchanger components	Steel	Closed-cycle cooling water	Loss of material #*#due to general, pitting, crevice, and galvanic corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR
2398	AP-189	A-63	VII.F2.AP-189	VII.F2-9(A-63)	Heat exchanger components	Steel	Closed-cycle cooling water	Loss of material #*#due to general, pitting, crevice, and galvanic corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR

2395	AP-189	A-63	VII.E3. AP-189	VII.E3-4(A-63)	Heat exchanger components	Steel	Closed-cycle cooling water	Loss of material #*#due to general, pitting, crevice, and galvanic corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR
2394	AP-189	A-63	VII.E1. AP-189	VII.E1-6(A-63)	Heat exchanger components	Steel	Closed-cycle cooling water	Loss of material #*#due to general, pitting, crevice, and galvanic corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR
2393	AP-189	A-63	VII.C2. AP-189	VII.C2-1(A-63)	Heat exchanger components	Steel	Closed-cycle cooling water	Loss of material #*#due to general, pitting, crevice, and galvanic corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR
2399	AP-189	A-63	VII.F3. AP-189	VII.F3-11(A-63)	Heat exchanger components	Steel	Closed-cycle cooling water	Loss of material #*#due to general, pitting, crevice, and galvanic corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR
2331	AP-183	A-64	VII.C1. AP-183	VII.C1-5(A-64)	Heat exchanger components	Steel	Raw water	Loss of material #*#due to general, pitting, crevice, galvanic, and microbiologically-influenced corrosion; fouling that leads to corrosion	Chapter XI.M20, "Open-Cycle Cooling Water System"	No	BWR/PWR

1887	AP-179	A-65	VII.C1. AP-179	VII.C1-3(A-65)	Heat exchanger components	Copper alloy	Raw water	Loss of material #*#due to general, pitting, crevice, galvanic, and microbiologically-influenced corrosion; fouling that leads to corrosion	Chapter XI.M20, "Open-Cycle Cooling Water System"	No	BWR/PWR
2402	AP-191	A-67	VII.E3. AP-191	VII.E3-1(A-67)	Heat exchanger components	Stainless steel; steel with stainless steel cladding	Closed-cycle cooling water	Loss of material #*#due to microbiologically-influenced corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	PWR
2403	AP-191	A-67	VII.E4. AP-191	VII.E4-1(A-67)	Heat exchanger components	Stainless steel; steel with stainless steel cladding	Closed-cycle cooling water	Loss of material #*#due to microbiologically-influenced corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	PWR
2404	AP-192	A-68	VII.E3. AP-192	VII.E3-2(A-68)	Heat exchanger components	Stainless steel; steel with stainless steel cladding	Closed-cycle cooling water >60°C (>140°F)	Cracking #*#due to stress corrosion cracking	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR
1495	AP-111	A-70	VII.A4. AP-111	VII.A4-2(A-70)	Heat exchanger components	Stainless steel; steel with stainless steel cladding	Treated water	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR

1496	AP-112	A-71	VII.E3. AP-112	VII.E3-3(A-71)	Heat exchanger components	Stainless steel; steel with stainless steel cladding	Treated water >60°C (>140°F)	Cracking #*#due to stress corrosion cracking	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
1497	AP-113	A-73	VII.F1. AP-113	VII.F1-5(A-73)	Elastomer: seals and components	Elastomers	Air – indoor, uncontrolled (External)	Loss of material #*#due to wear	Chapter XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components"	No	BWR/PWR
1498	AP-113	A-73	VII.F2. AP-113	VII.F2-5(A-73)	Elastomer: seals and components	Elastomers	Air – indoor, uncontrolled (External)	Loss of material #*#due to wear	Chapter XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components"	No	BWR/PWR
1500	AP-113	A-73	VII.F4. AP-113	VII.F4-4(A-73)	Elastomer: seals and components	Elastomers	Air – indoor, uncontrolled (External)	Loss of material #*#due to wear	Chapter XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components"	No	BWR/PWR
1499	AP-113	A-73	VII.F3. AP-113	VII.F3-5(A-73)	Elastomer: seals and components	Elastomers	Air – indoor, uncontrolled (External)	Loss of material #*#due to wear	Chapter XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components"	No	BWR/PWR
1501	AP-114	A-76	VII.E1. AP-114	VII.E1-7(A-76)	High-pressure pump, casing	Stainless steel	Treated borated water >60°C (>140°F)	Cracking #*#due to stress corrosion cracking	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR
1503	AP-116	A-82	VII.G.AP-116	VII.G-27(A-82)	Reactor coolant pump oil collection system: tanks	Steel	Lubricating oil	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
1504	AP-117	A-83	VII.G.AP-117	VII.G-26(A-83)	Reactor coolant pump oil collection system: piping, tubing, valve bodies	Steel	Lubricating oil	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
1505	AP-118	A-84	VII.E1. AP-118	VII.E1-5(A-84)	Heat exchanger components	Stainless steel	Treated borated water >60°C (>140°F)	Cracking #*#due to stress corrosion cracking	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR

1507	AP-120	A-85	VII.E3. AP-120	VII.E3-19(A-85)	Regenerative heat exchanger components	Stainless steel	Treated water >60°C (>140°F)	Cracking #*#due to stress corrosion cracking	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
2596	AP-235	A-88	VII.A2. AP-235	VII.A2-5(A-88)	Spent fuel storage racks: neutron-absorbing sheets (PWR)	Boral; boron steel	Treated borated water	Reduction of neutron-absorbing capacity; loss of material #*#due to general corrosion	Chapter XI.M40, "Monitoring of Neutron-Absorbing Materials other than Boraflex"	No	PWR
2597	AP-236	A-89	VII.A2. AP-236	VII.A2-3(A-89)	Spent fuel storage racks: neutron-absorbing sheets (BWR)	Boral; boron steel	Treated water	Reduction of neutron-absorbing capacity; loss of material #*#due to general corrosion	Chapter XI.M40, "Monitoring of Neutron-Absorbing Materials other than Boraflex"	No	BWR
2423	AP-199	AP-12	VII.F2. AP-199	VII.F2-13(AP-12)	Piping, piping components, and piping elements	Copper alloy	Closed-cycle cooling water	Loss of material #*#due to general, pitting, crevice, and galvanic corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR
2424	AP-199	AP-12	VII.F3. AP-199	VII.F3-15(AP-12)	Piping, piping components, and piping elements	Copper alloy	Closed-cycle cooling water	Loss of material #*#due to general, pitting, crevice, and galvanic corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR
2418	AP-199	AP-12	VII.C2. AP-199	VII.C2-4(AP-12)	Piping, piping components, and piping elements	Copper alloy	Closed-cycle cooling water	Loss of material #*#due to general, pitting, crevice, and galvanic corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR

2422	AP-199	AP-12	VII.F1. AP-199	VII.F1-15(AP-12)	Piping, piping components, and piping elements	Copper alloy	Closed-cycle cooling water	Loss of material #*#due to general, pitting, crevice, and galvanic corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR
2421	AP-199	AP-12	VII.E4. AP-199	VII.E4-5(AP-12)	Piping, piping components, and piping elements	Copper alloy	Closed-cycle cooling water	Loss of material #*#due to general, pitting, crevice, and galvanic corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR
2420	AP-199	AP-12	VII.E3. AP-199	VII.E3-8(AP-12)	Piping, piping components, and piping elements	Copper alloy	Closed-cycle cooling water	Loss of material #*#due to general, pitting, crevice, and galvanic corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR
2419	AP-199	AP-12	VII.E1. AP-199	VII.E1-11(AP-12)	Piping, piping components, and piping elements	Copper alloy	Closed-cycle cooling water	Loss of material #*#due to general, pitting, crevice, and galvanic corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR
2426	AP-199	AP-12	VII.H1. AP-199	VII.H1-2(AP-12)	Piping, piping components, and piping elements	Copper alloy	Closed-cycle cooling water	Loss of material #*#due to general, pitting, crevice, and galvanic corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR
2427	AP-199	AP-12	VII.H2. AP-199	VII.H2-8(AP-12)	Piping, piping components, and piping elements	Copper alloy	Closed-cycle cooling water	Loss of material #*#due to general, pitting, crevice, and galvanic corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR

2417	AP-199	AP-12	VII.A4.AP-199	VII.A4-6(AP-12)	Piping, piping components, and piping elements	Copper alloy	Closed-cycle cooling water	Loss of material #*#due to general, pitting, crevice, and galvanic corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR
2425	AP-199	AP-12	VII.F4.AP-199	VII.F4-11(AP-12)	Piping, piping components, and piping elements	Copper alloy	Closed-cycle cooling water	Loss of material #*#due to general, pitting, crevice, and galvanic corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR
2416	AP-199	AP-12	VII.A3.AP-199	VII.A3-5(AP-12)	Piping, piping components, and piping elements	Copper alloy	Closed-cycle cooling water	Loss of material #*#due to general, pitting, crevice, and galvanic corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR
1512	AP-124	AP-26	VII.I.AP-124	VII.I-5(AP-26)	Closure bolting	Steel; stainless steel	Air – indoor, uncontrolled (External)	Loss of preload #*#due to thermal effects, gasket creep, and self-loosening	Chapter XI.M18, "Bolting Integrity"	No	BWR/PWR
1513	AP-125	AP-27	VII.I.AP-125	VII.I-4(AP-27)	Closure bolting	Steel; stainless steel	Air – indoor, uncontrolled (External)	Loss of material #*#due to general (steel only), pitting, and crevice corrosion	Chapter XI.M18, "Bolting Integrity"	No	BWR/PWR
1514	AP-126	AP-28	VII.I.AP-126	VII.I-1(AP-28)	Bolting	Steel; stainless steel	Air – outdoor (External)	Loss of material #*#due to general (steel only), pitting, and crevice corrosion	Chapter XI.M18, "Bolting Integrity"	No	BWR/PWR

1522	AP-127	AP-30	VII.F4. AP-127	VII.F4-15(AP-30)	Piping, piping components, and piping elements	Steel	Lubricating oil	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
1517	AP-127	AP-30	VII.E1. AP-127	VII.E1-19(AP-30)	Piping, piping components, and piping elements	Steel	Lubricating oil	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR
1515	AP-127	AP-30	VII.C1. AP-127	VII.C1-17(AP-30)	Piping, piping components, and piping elements	Steel	Lubricating oil	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
1516	AP-127	AP-30	VII.C2. AP-127	VII.C2-13(AP-30)	Piping, piping components, and piping elements	Steel	Lubricating oil	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
1518	AP-127	AP-30	VII.E4. AP-127	VII.E4-16(AP-30)	Piping, piping components, and piping elements	Steel	Lubricating oil	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR
1523	AP-127	AP-30	VII.G.AP-127	VII.G-22(AP-30)	Piping, piping components, and piping elements	Steel	Lubricating oil	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
1520	AP-127	AP-30	VII.F2. AP-127	VII.F2-17(AP-30)	Piping, piping components, and piping elements	Steel	Lubricating oil	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR

1521	AP-127	AP-30	VII.F3. AP-127	VII.F3-19(AP-30)	Piping, piping components, and piping elements	Steel	Lubricating oil	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
1524	AP-127	AP-30	VII.H2. AP-127	VII.H2-20(AP-30)	Piping, piping components, and piping elements	Steel	Lubricating oil	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
1519	AP-127	AP-30	VII.F1. AP-127	VII.F1-19(AP-30)	Piping, piping components, and piping elements	Steel	Lubricating oil	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
1525	AP-128	AP-33	VII.H2. AP-128	VII.H2-1(AP-33)	Diesel engine exhaust piping, piping components, and piping elements	Stainless steel	Diesel exhaust	Cracking #*#due to stress corrosion cracking	Chapter XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components"	No	BWR/PWR
2436	AP-203	AP-34	VII.E1. AP-203	VII.E1-2(AP-34)	Heat exchanger components	Copper alloy	Closed-cycle cooling water	Loss of material #*#due to general, pitting, crevice, and galvanic corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR
2437	AP-203	AP-34	VII.F1. AP-203	VII.F1-8(AP-34)	Heat exchanger components	Copper alloy	Closed-cycle cooling water	Loss of material #*#due to general, pitting, crevice, and galvanic corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR
2438	AP-203	AP-34	VII.F3. AP-203	VII.F3-8(AP-34)	Heat exchanger components	Copper alloy	Closed-cycle cooling water	Loss of material #*#due to general, pitting, crevice, and galvanic corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR

1527	AP-129	AP-35	VII.H2. AP-129	VII.H2-7(AP-35)	Piping, piping components, and piping elements	Aluminum	Fuel oil	Loss of material #*#due to pitting, crevice, and microbiologically-influenced corrosion	Chapter XI.M30, “Fuel Oil Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
1526	AP-129	AP-35	VII.H1. AP-129	VII.H1-1(AP-35)	Piping, piping components, and piping elements	Aluminum	Fuel oil	Loss of material #*#due to pitting, crevice, and microbiologically-influenced corrosion	Chapter XI.M30, “Fuel Oil Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
1530	AP-130	AP-38	VII.E4. AP-130	VII.E4-4(AP-38)	Piping, piping components, and piping elements	Aluminum	Treated water	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR
1529	AP-130	AP-38	VII.E3. AP-130	VII.E3-7(AP-38)	Piping, piping components, and piping elements	Aluminum	Treated water	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR
1528	AP-130	AP-38	VII.A4. AP-130	VII.A4-5(AP-38)	Piping, piping components, and piping elements	Aluminum	Treated water	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR
1531	AP-131	AP-39	VII.H2. AP-131	VII.H2-5(AP-39)	Heat exchanger components	Steel	Lubricating oil	Loss of material #*#due to general, pitting, crevice, and microbiologically-influenced corrosion; fouling that leads to corrosion	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR

1533	AP-132	AP-44	VII.H1. AP-132	VII.H1-3(AP-44)	Piping, piping components, and piping elements	Copper alloy	Fuel oil	Loss of material #*#due to general, pitting, crevice, and microbiologically-influenced corrosion	Chapter XI.M30, “Fuel Oil Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
1534	AP-132	AP-44	VII.H2. AP-132	VII.H2-9(AP-44)	Piping, piping components, and piping elements	Copper alloy	Fuel oil	Loss of material #*#due to general, pitting, crevice, and microbiologically-influenced corrosion	Chapter XI.M30, “Fuel Oil Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
1532	AP-132	AP-44	VII.G.AP-132	VII.G-10(AP-44)	Piping, piping components, and piping elements	Copper alloy	Fuel oil	Loss of material #*#due to general, pitting, crevice, and microbiologically-influenced corrosion	Chapter XI.M30, “Fuel Oil Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
2405	AP-193	AP-45	VII.H2. AP-193	VII.H2-11(AP-45)	Piping, piping components, and piping elements	Copper alloy	Raw water	Loss of material #*#due to general, pitting, crevice, and microbiologically-influenced corrosion	Chapter XI.M20, "Open-Cycle Cooling Water System"	No	BWR/PWR
1540	AP-133	AP-47	VII.H2. AP-133	VII.H2-10(AP-47)	Piping, piping components, and piping elements	Copper alloy	Lubricating oil	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
1535	AP-133	AP-47	VII.C1. AP-133	VII.C1-8(AP-47)	Piping, piping components, and piping elements	Copper alloy	Lubricating oil	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR

1539	AP-133	AP-47	VII.G.AP-133	VII.G-11(AP-47)	Piping, piping components, and piping elements	Copper alloy	Lubricating oil	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
1538	AP-133	AP-47	VII.E4. AP-133	VII.E4-6(AP-47)	Piping, piping components, and piping elements	Copper alloy	Lubricating oil	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR
1537	AP-133	AP-47	VII.E1. AP-133	VII.E1-12(AP-47)	Piping, piping components, and piping elements	Copper alloy	Lubricating oil	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR
1536	AP-133	AP-47	VII.C2. AP-133	VII.C2-5(AP-47)	Piping, piping components, and piping elements	Copper alloy	Lubricating oil	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
2448	AP-206	AP-53	VII.C3. AP-206	VII.C3-6(AP-53)	Piping, piping components, and piping elements	Nickel alloy	Raw water	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M20, "Open-Cycle Cooling Water System"	No	BWR/PWR
2447	AP-206	AP-53	VII.C1. AP-206	VII.C1-13(AP-53)	Piping, piping components, and piping elements	Nickel alloy	Raw water	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M20, "Open-Cycle Cooling Water System"	No	BWR/PWR
1545	AP-136	AP-54	VII.H2. AP-136	VII.H2-16(AP-54)	Piping, piping components, and piping elements	Stainless steel	Fuel oil	Loss of material #*#due to pitting, crevice, and microbiologically-influenced corrosion	Chapter XI.M30, “Fuel Oil Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR

1543	AP-136	AP-54	VII.G.AP-136	VII.G-17(AP-54)	Piping, piping components, and piping elements	Stainless steel	Fuel oil	Loss of material #*#due to pitting, crevice, and microbiologically-influenced corrosion	Chapter XI.M30, “Fuel Oil Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
1544	AP-136	AP-54	VII.H1.AP-136	VII.H1-6(AP-54)	Piping, piping components, and piping elements	Stainless steel	Fuel oil	Loss of material #*#due to pitting, crevice, and microbiologically-influenced corrosion	Chapter XI.M30, “Fuel Oil Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
1547	AP-137	AP-56	VII.C3.AP-137	VII.C3-8(AP-56)	Piping, piping components, and piping elements	Stainless steel	Soil	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M41, "Buried, Underground, and Limited-Access Piping and Tanks"	No	BWR/PWR
1550	AP-137	AP-56	VII.H2.AP-137	VII.H2-19(AP-56)	Piping, piping components, and piping elements	Stainless steel	Soil	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M41, "Buried, Underground, and Limited-Access Piping and Tanks"	No	BWR/PWR
1548	AP-137	AP-56	VII.G.AP-137	VII.G-20(AP-56)	Piping, piping components, and piping elements	Stainless steel	Soil	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M41, "Buried, Underground, and Limited-Access Piping and Tanks"	No	BWR/PWR
1546	AP-137	AP-56	VII.C1.AP-137	VII.C1-16(AP-56)	Piping, piping components, and piping elements	Stainless steel	Soil	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M41, "Buried, Underground, and Limited-Access Piping and Tanks"	No	BWR/PWR
1549	AP-137	AP-56	VII.H1.AP-137	VII.H1-7(AP-56)	Piping, piping components, and piping elements	Stainless steel	Soil	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M41, "Buried, Underground, and Limited-Access Piping and Tanks"	No	BWR/PWR

1551	AP-138	AP-59	VII.C1.AP-138	VII.C1-14(AP-59)	Piping, piping components, and piping elements	Stainless steel	Lubricating oil	Loss of material #*#due to pitting, crevice, and microbiologically-influenced corrosion	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
1556	AP-138	AP-59	VII.H2.AP-138	VII.H2-17(AP-59)	Piping, piping components, and piping elements	Stainless steel	Lubricating oil	Loss of material #*#due to pitting, crevice, and microbiologically-influenced corrosion	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
1555	AP-138	AP-59	VII.G.AP-138	VII.G-18(AP-59)	Piping, piping components, and piping elements	Stainless steel	Lubricating oil	Loss of material #*#due to pitting, crevice, and microbiologically-influenced corrosion	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
1554	AP-138	AP-59	VII.E4.AP-138	VII.E4-12(AP-59)	Piping, piping components, and piping elements	Stainless steel	Lubricating oil	Loss of material #*#due to pitting, crevice, and microbiologically-influenced corrosion	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR
1553	AP-138	AP-59	VII.E1.AP-138	VII.E1-15(AP-59)	Piping, piping components, and piping elements	Stainless steel	Lubricating oil	Loss of material #*#due to pitting, crevice, and microbiologically-influenced corrosion	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR
1552	AP-138	AP-59	VII.C2.AP-138	VII.C2-12(AP-59)	Piping, piping components, and piping elements	Stainless steel	Lubricating oil	Loss of material #*#due to pitting, crevice, and microbiologically-influenced corrosion	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR

2383	AP-186	AP-60	VII.E4.AP-186	VII.E4-11(AP-60)	Piping, piping components, and piping elements	Stainless steel	Closed-cycle cooling water >60°C (>140°F)	Cracking #*#due to stress corrosion cracking	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR
2382	AP-186	AP-60	VII.E3.AP-186	VII.E3-13(AP-60)	Piping, piping components, and piping elements	Stainless steel	Closed-cycle cooling water >60°C (>140°F)	Cracking #*#due to stress corrosion cracking	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR
2381	AP-186	AP-60	VII.C2.AP-186	VII.C2-11(AP-60)	Piping, piping components, and piping elements	Stainless steel	Closed-cycle cooling water >60°C (>140°F)	Cracking #*#due to stress corrosion cracking	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR
2386	AP-187	AP-61	VII.G.AP-187	VII.G-7(AP-61)	Heat exchanger tubes	Stainless steel	Raw water	Reduction of heat transfer #*#due to fouling	Chapter XI.M20, "Open-Cycle Cooling Water System"	No	BWR/PWR
2387	AP-187	AP-61	VII.H2.AP-187	VII.H2-6(AP-61)	Heat exchanger tubes	Stainless steel	Raw water	Reduction of heat transfer #*#due to fouling	Chapter XI.M20, "Open-Cycle Cooling Water System"	No	BWR/PWR
2384	AP-187	AP-61	VII.C1.AP-187	VII.C1-7(AP-61)	Heat exchanger tubes	Stainless steel	Raw water	Reduction of heat transfer #*#due to fouling	Chapter XI.M20, "Open-Cycle Cooling Water System"	No	BWR/PWR
2385	AP-187	AP-61	VII.C3.AP-187	VII.C3-1(AP-61)	Heat exchanger tubes	Stainless steel	Raw water	Reduction of heat transfer #*#due to fouling	Chapter XI.M20, "Open-Cycle Cooling Water System"	No	BWR/PWR
1558	AP-139	AP-62	VII.E3.AP-139	VII.E3-6(AP-62)	Heat exchanger tubes	Stainless steel	Treated water	Reduction of heat transfer #*#due to fouling	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR
1557	AP-139	AP-62	VII.A4.AP-139	VII.A4-4(AP-62)	Heat exchanger tubes	Stainless steel	Treated water	Reduction of heat transfer #*#due to fouling	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR
2390	AP-188	AP-63	VII.E4.AP-188	VII.E4-3(AP-63)	Heat exchanger tubes	Stainless steel	Closed-cycle cooling water	Reduction of heat transfer #*#due to fouling	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR
2389	AP-188	AP-63	VII.E3.AP-188	VII.E3-5(AP-63)	Heat exchanger tubes	Stainless steel	Closed-cycle cooling water	Reduction of heat transfer #*#due to fouling	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR

2388	AP-188	AP-63	VII.C2. AP-188	VII.C2-3(AP-63)	Heat exchanger tubes	Stainless steel	Closed-cycle cooling water	Reduction of heat transfer #*#due to fouling	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR
1559	AP-140	AP-64	VII.A4. AP-140	VII.A4-7(AP-64)	Piping, piping components, and piping elements	Copper alloy	Treated water	Loss of material #*#due to general, pitting, crevice, and galvanic corrosion	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR
1560	AP-140	AP-64	VII.E3. AP-140	VII.E3-9(AP-64)	Piping, piping components, and piping elements	Copper alloy	Treated water	Loss of material #*#due to general, pitting, crevice, and galvanic corrosion	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR
1561	AP-140	AP-64	VII.E4. AP-140	VII.E4-7(AP-64)	Piping, piping components, and piping elements	Copper alloy	Treated water	Loss of material #*#due to general, pitting, crevice, and galvanic corrosion	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR
1562	AP-141	AP-73	VII.E2. AP-141	VII.E2-1(AP-73)	Piping, piping components, and piping elements	Stainless steel	Sodium pentaborate solution	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR
1566	AP-142	AP-74	VII.F4. AP-142	VII.F4-10(AP-74)	Piping, piping components, and piping elements	Aluminum	Condensation	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components"	No	BWR/PWR
1563	AP-142	AP-74	VII.F1. AP-142	VII.F1-14(AP-74)	Piping, piping components, and piping elements	Aluminum	Condensation	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components"	No	BWR/PWR
1564	AP-142	AP-74	VII.F2. AP-142	VII.F2-12(AP-74)	Piping, piping components, and piping elements	Aluminum	Condensation	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components"	No	BWR/PWR

1565	AP-142	AP-74	VII.F3. AP-142	VII.F3-14(AP-74)	Piping, piping components, and piping elements	Aluminum	Condensation	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components"	No	BWR/PWR
2449	AP-207	AP-75	VII.C1. AP-207	VII.C1-1(AP-75)	Elastomer: seals and components	Elastomers	Raw water	Hardening and loss of strength #*#due to elastomer degradation	Chapter XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components"	No	BWR/PWR
2450	AP-208	AP-76	VII.C1. AP-208	VII.C1-2(AP-76)	Elastomer: seals and components	Elastomers	Raw water	Loss of material #*#due to erosion	Chapter XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components"	No	BWR/PWR
2441	AP-204	AP-77	VII.F3. AP-204	VII.F3-13(AP-77)	Heat exchanger tubes	Steel	Closed-cycle cooling water	Reduction of heat transfer #*#due to fouling	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR
2442	AP-204	AP-77	VII.F4. AP-204	VII.F4-9(AP-77)	Heat exchanger tubes	Steel	Closed-cycle cooling water	Reduction of heat transfer #*#due to fouling	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR
2440	AP-204	AP-77	VII.F2. AP-204	VII.F2-11(AP-77)	Heat exchanger tubes	Steel	Closed-cycle cooling water	Reduction of heat transfer #*#due to fouling	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR
2439	AP-204	AP-77	VII.F1. AP-204	VII.F1-13(AP-77)	Heat exchanger tubes	Steel	Closed-cycle cooling water	Reduction of heat transfer #*#due to fouling	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR
1567	AP-143	AP-78	VII.G.AP-143	VII.G-9(AP-78)	Piping, piping components, and piping elements	Copper alloy	Condensation (Internal)	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components"	No	BWR/PWR
2446	AP-205	AP-80	VII.F3. AP-205	VII.F3-12(AP-80)	Heat exchanger tubes	Copper Alloy	Closed-cycle cooling water	Reduction of heat transfer #*#due to fouling	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR
2445	AP-205	AP-80	VII.F2. AP-205	VII.F2-10(AP-80)	Heat exchanger tubes	Copper Alloy	Closed-cycle cooling water	Reduction of heat transfer #*#due to fouling	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR

2444	AP-205	AP-80	VII.F1.AP-205	VII.F1-12(AP-80)	Heat exchanger tubes	Copper Alloy	Closed-cycle cooling water	Reduction of heat transfer #*#due to fouling	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR
2443	AP-205	AP-80	VII.C2.AP-205	VII.C2-2(AP-80)	Heat exchanger tubes	Copper Alloy	Closed-cycle cooling water	Reduction of heat transfer #*#due to fouling	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR
1888	AP-180	AP-83	VII.G.AP-180	VII.G-8(AP-83)	Piping, piping components, and piping elements	Aluminum	Raw water	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M27, "Fire Water System"	No	BWR/PWR
1648	CP-31	C-01	II.A1.CP-31	II.A1-2(C-01)	Concrete (accessible areas): dome; wall; basemat; ring girders; buttresses	Concrete	Air – outdoor	Loss of material (spalling, scaling) and cracking #*#due to freeze-thaw	Chapter XI.S2, “ASME Section XI, Subsection IWL”	No	PWR
1649	CP-32	C-02	II.A1.CP-32	II.A1-6(C-02)	Concrete (accessible areas): dome; wall; basemat; ring girders; buttresses	Concrete	Water – flowing	Increase in porosity and permeability #*#due to leaching of calcium hydroxide and carbonation	Chapter XI.S2, “ASME Section XI, Subsection IWL”	No	PWR
1989	CP-100	C-03	II.A1.CP-100	II.A1-4(C-03)	Concrete (inaccessible areas): dome; wall; basemat; ring girders; buttresses	Concrete	Air – indoor, uncontrolled or Air – outdoor or Ground water/soil	Increase in porosity and permeability; cracking; loss of material (spalling, scaling) #*#due to aggressive chemical attack	Chapter XI.S2, “ASME Section XI, Subsection IWL,” or #*#Chapter XI.S6, "Structure Monitoring"	No	PWR
1650	CP-33	C-04	II.A1.CP-33	II.A1-3(C-04)	Concrete (accessible areas): dome; wall; basemat; ring girders; buttresses	Concrete	Any environment	Cracking #*#due to expansion from reaction with aggregates	Chapter XI.S2, “ASME Section XI, Subsection IWL”	No	PWR

1896	CP-68	C-05	II.A1.CP-68	II.A1-7(C-05)	Concrete (accessible areas): dome; wall; basemat; ring girders; buttresses; reinforcing steel	Concrete; steel	Air – indoor, uncontrolled or Air – outdoor	Cracking; loss of bond; and loss of material (spalling, scaling) #*#due to corrosion of embedded steel	Chapter XI.S2, “ASME Section XI, Subsection IWL”	No	PWR
1996	CP-105	C-06	II.B3.2.CP-105	II.B3.2-1(C-06)	Concrete elements, all	Concrete	Soil	Cracking and distortion #*#due to increased stress levels from settlement	Chapter XI.S2, “ASME Section XI, Subsection IWL” #*#If a de-watering system is relied upon for control of settlement, then the licensee is to ensure proper functioning of the de-watering system through the period of extended operation.	Yes, if a de-watering system is relied upon to control settlement	BWR
1994	CP-105	C-06	II.B1.2.CP-105	II.B1.2-1(C-06)	Concrete elements, all	Concrete	Soil	Cracking and distortion #*#due to increased stress levels from settlement	Chapter XI.S2, “ASME Section XI, Subsection IWL” #*#If a de-watering system is relied upon for control of settlement, then the licensee is to ensure proper functioning of the de-watering system through the period of extended operation.	Yes, if a de-watering system is relied upon to control settlement	BWR
1995	CP-105	C-06	II.B2.2.CP-105	II.B2.2-1(C-06)	Concrete elements, all	Concrete	Soil	Cracking and distortion #*#due to increased stress levels from settlement	Chapter XI.S2, “ASME Section XI, Subsection IWL” #*#If a de-watering system is relied upon for control of settlement, then the licensee is to ensure proper functioning of the de-watering system through the period of extended operation.	Yes, if a de-watering system is relied upon to control settlement	BWR

1651	CP-34	C-08	II.A1.CP-34	II.A1-1(C-08)	Concrete: dome; wall; basemat; ring girders; buttresses	Concrete	Air – indoor, uncontrolled or Air – outdoor	Reduction of strength and modulus #*#due to elevated temperature (>150°F general; >200°F local)	Plant-specific aging management program #*# #*#The implementation of 10 CFR 50.55a and ASME Section XI, Subsection IWL would not be able to identify the reduction of strength and modulus of elasticity due to elevated temperature. Thus, for any portions of concrete containment that exceed specified temperature limits, further evaluations are warranted. Subsection CC-3400 of ASME Section III, Division 2, specifies the concrete temperature limits for normal operation or any other long-term period. The temperatures shall not exceed 150°F except for local areas, such as around penetrations, which are not allowed to exceed 200°F. If significant equipment loads are supported by concrete at temperatures exceeding 150°F, an evaluation of the ability to withstand the postulated design loads is to be made. #*# #*#Higher temperatures than given above may be allowed in the concrete if tests and/or calculations are provided to evaluate the reduction in strength and modulus of elasticity and these reductions are applied to the design calculations.	Yes, if temperature limits are exceeded	PWR
1652	CP-35	C-09	II.A1.CP-35	II.A1-11(C-09)	Steel elements (accessible areas): liner; liner anchors; integral attachments	Steel	Air – indoor, uncontrolled	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.S1, “ASME Section XI, Subsection IWE,” and #*#Chapter XI.S4, “10 CFR Part 50, Appendix J”	No	PWR

1653	CP-35	C-09	II.A2.CP-35	II.A2-9(C-09)	Steel elements (accessible areas): liner; liner anchors; integral attachments	Steel	Air – indoor, uncontrolled	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.S1, “ASME Section XI, Subsection IWE,” and #*#Chapter XI.S4, “10 CFR Part 50, Appendix J”	No	PWR
1654	CP-35	C-09	II.B3.2.CP-35	II.B3.2-9(C-09)	Steel elements (accessible areas): liner; liner anchors; integral attachments	Steel	Air – indoor, uncontrolled	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.S1, “ASME Section XI, Subsection IWE,” and #*#Chapter XI.S4, “10 CFR Part 50, Appendix J”	No	BWR
1655	CP-36	C-12	II.A3.CP-36	II.A3-1(C-12)	Penetration sleeves	Steel; dissimilar metal welds	Air – indoor, uncontrolled or Air – outdoor	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.S1, “ASME Section XI, Subsection IWE,” and #*#Chapter XI.S4, “10 CFR Part 50, Appendix J” #*#(Note: IWE examination category E-F, surface examination of dissimilar metal welds, specified in 1992 edition of ASME Code is recommended)	No	PWR
1656	CP-36	C-12	II.B4.CP-36	II.B4-1(C-12)	Penetration sleeves	Steel; dissimilar metal welds	Air – indoor, uncontrolled or Air – outdoor	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.S1, “ASME Section XI, Subsection IWE,” and #*#Chapter XI.S4, “10 CFR Part 50, Appendix J” #*#(Note: IWE examination category E-F, surface examination of dissimilar metal welds, specified in 1992 edition of ASME Code is recommended)	No	BWR
1658	CP-37	C-14	II.B4.CP-37	II.B4-3(C-14)	penetration sleeves; penetration bellows	Steel; stainless steel; dissimilar metal welds	Air – indoor, uncontrolled or Air – outdoor	Cracking #*#due to cyclic loading #*#(CLB fatigue analysis does not exist)	Chapter XI.S1, “ASME Section XI, Subsection IWE,” and #*#Chapter XI.S4, “10 CFR Part 50, Appendix J”	No	BWR
1657	CP-37	C-14	II.A3.CP-37	II.A3-3(C-14)	penetration sleeves; penetration bellows	Steel; stainless steel; dissimilar metal welds	Air – indoor, uncontrolled or Air – outdoor	Cracking #*#due to cyclic loading #*#(CLB fatigue analysis does not exist)	Chapter XI.S1, “ASME Section XI, Subsection IWE,” and #*#Chapter XI.S4, “10 CFR Part 50, Appendix J”	No	PWR

1659	CP-38	C-15	II.A3.CP-38	II.A3-2(C-15)	Penetration sleeves; penetration bellows	Stainless steel; dissimilar metal welds	Air – indoor, uncontrolled or Air – outdoor	Cracking #*#due to stress corrosion cracking	Chapter XI.S1, “ASME Section XI, Subsection IWE,” and #*#Chapter XI.S4, “10 CFR Part 50, Appendix J”	Yes, detection of aging effects is to be evaluated	PWR
1660	CP-38	C-15	II.B4.CP-38	II.B4-2(C-15)	Penetration sleeves; penetration bellows	Stainless steel; dissimilar metal welds	Air – indoor, uncontrolled or Air – outdoor	Cracking #*#due to stress corrosion cracking	Chapter XI.S1, “ASME Section XI, Subsection IWE,” and #*#Chapter XI.S4, “10 CFR Part 50, Appendix J”	Yes, detection of aging effects is to be evaluated	BWR
1661	CP-39	C-17	II.A3.CP-39	II.A3-5(C-17)	Personnel airlock, equipment hatch, CRD hatch: locks, hinges, and closure mechanisms	Steel	Air – indoor, uncontrolled or Air – outdoor	Loss of leak tightness #*#due to mechanical wear of locks, hinges and closure mechanisms	Chapter XI.S1, “ASME Section XI, Subsection IWE,” and #*#Chapter XI.S4, “10 CFR Part 50, Appendix J”	No	PWR
1662	CP-39	C-17	II.B4.CP-39	II.B4-5(C-17)	Personnel airlock, equipment hatch, CRD hatch: locks, hinges, and closure mechanisms	Steel	Air – indoor, uncontrolled or Air – outdoor	Loss of leak tightness #*#due to mechanical wear of locks, hinges and closure mechanisms	Chapter XI.S1, “ASME Section XI, Subsection IWE,” and #*#Chapter XI.S4, “10 CFR Part 50, Appendix J”	No	BWR
1663	CP-40	C-18	II.A3.CP-40	II.A3-7(C-18)	Moisture barriers (caulking, flashing, and other sealants)	Elastomers, rubber and other similar materials	Air – indoor, uncontrolled	Loss of sealing #*#due to wear, damage, erosion, tear, surface cracks, or other defects	Chapter XI.S1, “ASME Section XI, Subsection IWE”	No	PWR

1664	CP-40	C-18	II.B4.C P-40	II.B4-7(C-18)	Moisture barriers (caulking, flashing, and other sealants)	Elastomers, rubber and other similar materials	Air – indoor, uncontrolled	Loss of sealing #*#due to wear, damage, erosion, tear, surface cracks, or other defects	Chapter XI.S1, “ASME Section XI, Subsection IWE”	No	BWR
1667	CP-43	C-19	II.B1.1. CP-43	II.B1.1-2(C-19)	Steel elements (accessible areas): drywell shell; drywell head; drywell shell in sand pocket regions;	Steel	Air – indoor, uncontrolled	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.S1, “ASME Section XI, Subsection IWE,” and #*#Chapter XI.S4, “10 CFR Part 50, Appendix J”	No	BWR
1668	CP-43	C-19	II.B3.1. CP-43	II.B3.1-8(C-19)	Steel elements (accessible areas): drywell shell; drywell head	Steel	Air – indoor, uncontrolled	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.S1, “ASME Section XI, Subsection IWE,” and #*#Chapter XI.S4, “10 CFR Part 50, Appendix J”	No	BWR
1674	CP-49	C-20	II.B1.1. CP-49	II.B1.1-3(C-20)	Steel elements: torus; vent line; vent header; vent line bellows; downcomers	Steel; stainless steel	Air – indoor, uncontrolled	Cracking #*#due to cyclic loading #*#(CLB fatigue analysis does not exist)	Chapter XI.S1, “ASME Section XI, Subsection IWE,” and #*#Chapter XI.S4, “10 CFR Part 50, Appendix J”	No	BWR
1675	CP-50	C-22	II.B1.1. CP-50	II.B1.1-5(C-22)	Steel elements: vent line bellows	Stainless steel	Air – indoor, uncontrolled	Cracking #*#due to stress corrosion cracking	Chapter XI.S1, “ASME Section XI, Subsection IWE,” and #*#Chapter XI.S4, “10 CFR Part 50, Appendix J”	No	BWR
1901	CP-71	C-25	II.B3.1. CP-71	II.B3.1-1(C-25)	Concrete (inaccessible areas): basemat	Concrete	Ground water/soil	Increase in porosity and permeability; cracking; loss of material (spalling, scaling) #*#due to aggressive chemical attack	Chapter XI.S6, "Structures Monitoring"	No	BWR

1900	CP-71	C-25	II.A2.CP-71	II.A2-4(C-25)	Concrete (inaccessible areas): basemat	Concrete	Ground water/soil	Increase in porosity and permeability; cracking; loss of material (spalling, scaling) #*#due to aggressive chemical attack	Chapter XI.S6, "Structures Monitoring"	No	PWR
1998	CP-106	C-26	II.B2.2.CP-106	II.B2.2-5(C-26)	Concrete: containment; wall; basemat	Concrete	Air – indoor, uncontrolled or Air – outdoor	Increase in porosity and permeability; cracking; loss of material (spalling, scaling) #*#due to aggressive chemical attack	Chapter XI.S2, “ASME Section XI, Subsection IWL,” or #*#Chapter XI.S6, "Structure Monitoring"	No	BWR
1997	CP-106	C-26	II.B1.2.CP-106	II.B1.2-5(C-26)	Concrete: containment; wall; basemat	Concrete	Air – indoor, uncontrolled or Air – outdoor	Increase in porosity and permeability; cracking; loss of material (spalling, scaling) #*#due to aggressive chemical attack	Chapter XI.S2, “ASME Section XI, Subsection IWL,” or #*#Chapter XI.S6, "Structure Monitoring"	No	BWR
1915	CP-84	C-27	II.B3.2.CP-84	II.B3.2-5(C-27)	Concrete (accessible areas): dome; wall; basemat	Concrete	Air – indoor, uncontrolled or Air – outdoor or Ground water/soil	Increase in porosity and permeability; cracking; loss of material (spalling, scaling) #*#due to aggressive chemical attack	Chapter XI.S2, “ASME Section XI, Subsection IWL,” or #*#Chapter XI.S6, "Structure Monitoring"	No	BWR
1676	CP-51	C-28	II.A2.CP-51	II.A2-2(C-28)	Concrete (accessible areas): basemat	Concrete	Air – outdoor	Loss of material (spalling, scaling) and cracking #*#due to freeze-thaw	Chapter XI.S2, “ASME Section XI, Subsection IWL”	No	PWR

1677	CP-52	C-29	II.B3.2. CP-52	II.B3.2-3(C-29)	Concrete (accessible areas): dome; wall; basemat	Concrete	Air – outdoor or Ground water/soil	Loss of material (spalling, scaling) and cracking #*#due to freeze-thaw	Chapter XI.S2, "ASME Section XI, Subsection IWL"	No	BWR
1679	CP-53	C-30	II.B3.1. CP-53	II.B3.1-3(C-30)	Concrete (inaccessible areas): basemat	Concrete	Water – flowing	Increase in porosity and permeability #*#due to leaching of calcium hydroxide and carbonation	Further evaluation is required to determine if a plant-specific aging management program is needed to manage increase in porosity, and permeability due to leaching of calcium hydroxide and carbonation of concrete in Inaccessible Areas. A plant-specific aging management program is not required if #*#(1) There is evidence in the accessible areas of adjacent structures that the flowing water has not caused leaching and carbonation, or #*#(2) Evaluation determined that the observed leaching of calcium hydroxide and carbonation in accessible areas has no impact on the intended function of the concrete structure.	Yes, if leaching is observed in accessible areas that impact intended function	BWR
1678	CP-53	C-30	II.A2.CP-53	II.A2-6(C-30)	Concrete (inaccessible areas): basemat	Concrete	Water – flowing	Increase in porosity and permeability #*#due to leaching of calcium hydroxide and carbonation	Further evaluation is required to determine if a plant-specific aging management program is needed to manage increase in porosity, and permeability due to leaching of calcium hydroxide and carbonation of concrete in Inaccessible Areas. A plant-specific aging management program is not required if #*#(1) There is evidence in the accessible areas of adjacent structures that the flowing water has not caused leaching and carbonation, or #*#(2) Evaluation determined that the observed leaching of calcium hydroxide and carbonation in accessible areas has no impact on the intended function of the concrete structure.	Yes, if leaching is observed in accessible areas that impact intended function	PWR

1680	CP-54	C-31	II.B1.2. CP-54	II.B1.2-6(C-31)	Concrete (accessible areas): containment; wall; basemat	Concrete	Water – flowing	Increase in porosity and permeability #*#due to leaching of calcium hydroxide and carbonation	Chapter XI.S2, “ASME Section XI, Subsection IWL”	No	BWR
1681	CP-54	C-31	II.B2.2. CP-54	II.B2.2-6(C-31)	Concrete (accessible areas): containment; wall; basemat	Concrete	Water – flowing	Increase in porosity and permeability #*#due to leaching of calcium hydroxide and carbonation	Chapter XI.S2, “ASME Section XI, Subsection IWL”	No	BWR
1682	CP-55	C-32	II.B3.2. CP-55	II.B3.2-6(C-32)	Concrete (accessible areas): dome; wall; basemat	Concrete	Water – flowing	Increase in porosity and permeability #*#due to leaching of calcium hydroxide and carbonation	Chapter XI.S2, “ASME Section XI, Subsection IWL”	No	BWR

2000	CP-108	C-33	II.B3.2.CP-108	II.B3.2-2(C-33)	Concrete: dome; wall; basemat	Concrete	Air – indoor, uncontrolled or Air – outdoor	Reduction of strength and modulus #*#due to elevated temperature (>150°F general; >200°F local)	Plant-specific aging management program #*#The implementation of 10 CFR 50.55a and ASME Section XI, Subsection IWL would not be able to identify the reduction of strength and modulus of elasticity due to elevated temperature. Thus, for any portions of concrete containment that exceed specified temperature limits, further evaluations are warranted. Subsection CC-3400 of ASME Section III, Division 2, specifies the concrete temperature limits for normal operation or any other long-term period. The temperatures shall not exceed 150°F except for local areas, such as around penetrations, which are not allowed to exceed 200°F. If significant equipment loads are supported by concrete at temperatures exceeding 150°F, an evaluation of the ability to withstand the postulated design loads is to be made. #*#Higher temperatures than given above may be allowed in the concrete if tests and/or calculations are provided to evaluate the reduction in strength and modulus of elasticity and these reductions are applied to the design calculations.	Yes, if temperature limits are exceeded	BWR

1684	CP-57	C-35	II.B1.2. CP-57	II.B1.2-3(C-35)	Concrete: containment; wall; basemat	Concrete	Air – indoor, uncontrolled or Air – outdoor	Reduction of strength and modulus #*#due to elevated temperature (>150°F general; >200°F local)	Plant-specific aging management program #*# #*#The implementation of 10 CFR 50.55a and ASME Code, Section XI, Subsection IWL would not be able to identify the reduction of strength and modulus due to elevated temperature. Thus, for any portions of concrete containment that exceed specified temperature limits, further evaluations are warranted. Subsection CC-3400 of ASME Section III, Division 2, specifies the concrete temperature limits for normal operation or any other long-term period. The temperatures shall not exceed 150°F except for local areas, such as around penetrations, which are not allowed to exceed 200°F. If significant equipment loads are supported by concrete at temperatures exceeding 150°F, an evaluation of the ability to withstand the postulated design loads is to be made. #*# #*#Higher temperatures than given above may be allowed in the concrete if tests and/or calculations are provided to evaluate the reduction in strength and modulus of elasticity, and these reductions are applied to the design calculations.	Yes, if temperature limits are exceeded	BWR

1685	CP-57	C-35	II.B2.2.CP-57	II.B2.2-3(C-35)	Concrete: containment; wall; basemat	Concrete	Air – indoor, uncontrolled or Air – outdoor	Reduction of strength and modulus #*#due to elevated temperature (>150°F general; >200°F local)	Plant-specific aging management program #*# #*#The implementation of 10 CFR 50.55a and ASME Section XI, Subsection IWL would not be able to identify the reduction of strength and modulus due to elevated temperature. Thus, for any portions of concrete containment that exceed specified temperature limits, further evaluations are warranted. Subsection CC-3400 of ASME Section III, Division 2, specifies the concrete temperature limits for normal operation or any other long-term period. The temperatures shall not exceed 150°F except for local areas, such as around penetrations, which are not allowed to exceed 200°F. If significant equipment loads are supported by concrete at temperatures exceeding 150°F, an evaluation of the ability to withstand the postulated design loads is to be made. #*# #*#Higher temperatures than given above may be allowed in the concrete if tests and/or calculations are provided to evaluate the reduction in strength and modulus of elasticity, and these reductions are applied to the design calculations.	Yes, if temperature limits are exceeded	BWR
1897	CP-69	C-36	II.A2.CP-69	II.A2-5(C-36)	Concrete: basemat	Concrete	Soil	Cracking and distortion #*#due to increased stress levels from settlement	Chapter XI.S2, "ASME Section XI, Subsection IWL" #*#If a de-watering system is relied upon for control of settlement, then the licensee is to ensure proper functioning of the de-watering system through the period of extended operation.	Yes, if a de-watering system is relied upon to control settlement	PWR

1898	CP-69	C-36	II.B3.1. CP-69	II.B3.1-2(C-36)	Concrete: basemat	Concrete	Soil	Cracking and distortion #*#due to increased stress levels from settlement	Chapter XI.S2, “ASME Section XI, Subsection IWL” #*#If a de-watering system is relied upon for control of settlement, then the licensee is to ensure proper functioning of the de-watering system through the period of extended operation.	Yes, if a de-watering system is relied upon to control settlement	BWR
1990	CP-101	C-37	II.A1.CP-101	II.A1-5(C-37)	Concrete: dome; wall; basemat; ring girders; buttresses	Concrete	Soil	Cracking and distortion #*#due to increased stress levels from settlement	Chapter XI.S2, “ASME Section XI, Subsection IWL” #*#If a de-watering system is relied upon for control of settlement, then the licensee is to ensure proper functioning of the de-watering system through the period of extended operation.	Yes, if a de-watering system is relied upon to control settlement	PWR
1686	CP-58	C-38	II.A2.CP-58	II.A2-3(C-38)	Concrete (accessible areas): basemat	Concrete	Any environment	Cracking #*#due to expansion from reaction with aggregates	Chapter XI.S2, “ASME Section XI, Subsection IWL”	No	PWR
1687	CP-59	C-39	II.B1.2. CP-59	II.B1.2-4(C-39)	Concrete (accessible areas): containment; wall; basemat	Concrete	Any environment	Cracking #*#due to expansion from reaction with aggregates	Chapter XI.S2, “ASME Section XI, Subsection IWL”	No	BWR
1688	CP-59	C-39	II.B2.2. CP-59	II.B2.2-4(C-39)	Concrete (accessible areas): containment; wall; basemat	Concrete	Any environment	Cracking #*#due to expansion from reaction with aggregates	Chapter XI.S2, “ASME Section XI, Subsection IWL”	No	BWR
1689	CP-60	C-40	II.B3.2. CP-60	II.B3.2-4(C-40)	Concrete (accessible areas): dome; wall; basemat	Concrete	Any environment	Cracking #*#due to expansion from reaction with aggregates	Chapter XI.S2, “ASME Section XI, Subsection IWL”	No	BWR
1911	CP-80	C-41	II.B2.2. CP-80	II.B2.2-2(C-41)	Concrete (inaccessible areas): basemat; reinforcing steel	Concrete; steel	Air – indoor, uncontrolled or Air – outdoor	Cracking; loss of bond; and loss of material (spalling, scaling) #*#due to corrosion of embedded steel	Chapter XI.S2, “ASME Section XI, Subsection IWL,” or #*#Chapter XI.S6, "Structure Monitoring"	No	BWR

1910	CP-79	C-41	II.B1.2. CP-79	II.B1.2-2(C-41)	Concrete (accessible areas): basemat; reinforcing steel	Concrete; steel	Air – indoor, uncontrolled or Air – outdoor	Cracking; loss of bond; and loss of material (spalling, scaling) #*#due to corrosion of embedded steel	Chapter XI.S2, “ASME Section XI, Subsection IWL”	No	BWR
1917	CP-88	C-42	II.B3.2. CP-88	II.B3.2-7(C-42)	Concrete (accessible areas): dome; wall; basemat; reinforcing steel	Concrete; steel	Air – indoor, uncontrolled or Air – outdoor	Cracking; loss of bond; and loss of material (spalling, scaling) #*#due to corrosion of embedded steel	Chapter XI.S2, “ASME Section XI, Subsection IWL”	No	BWR
1906	CP-75	C-43	II.A2.CP-75	II.A2-7(C-43)	Concrete (inaccessible areas): basemat; reinforcing steel	Concrete; steel	Air – indoor, uncontrolled or Air – outdoor	Cracking; loss of bond; and loss of material (spalling, scaling) #*#due to corrosion of embedded steel	Chapter XI.S2, “ASME Section XI, Subsection IWL,” or #*#Chapter XI.S6, "Structure Monitoring"	No	PWR
1905	CP-74	C-43	II.B3.1. CP-74	II.B3.1-6(C-43)	Concrete (accessible areas): basemat; reinforcing steel	Concrete; steel	Air – indoor, uncontrolled or Air – outdoor	Cracking; loss of bond; and loss of material (spalling, scaling) #*#due to corrosion of embedded steel	Chapter XI.S2, “ASME Section XI, Subsection IWL”	No	BWR
1999	CP-107	C-44	II.B2.1. CP-107	II.B2.1-3(C-44)	Suppression pool shell	Steel; stainless steel; dissimilar metal welds	Air – indoor, uncontrolled or Treated Water	Cracking #*#due to cyclic loading #*#(CLB fatigue analysis does not exist)	Chapter XI.S1, “ASME Section XI, Subsection IWE,” and #*#Chapter XI.S4, “10 CFR Part 50, Appendix J”	No	BWR

1692	CP-63	C-46	II.B1.2. CP-63	II.B1.2-8(C-46)	Steel elements (inaccessible areas): suppression chamber; drywell; drywell head; embedded shell; region shielded by diaphragm floor (as applicable)	Steel	Air – indoor, uncontrolled or Treated water	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.S1, “ASME Section XI, Subsection IWE” #*#Chapter XI.S4, “10 CFR Part 50, Appendix J” #*#Additional plant-specific activitities are warranted if loss of material due to corrosion is significant for inaccessible areas (embedded containment steel shell or liner).#*#Loss of material due to corrosion is not significant if the following conditions are satisfied: #*#1. Concrete meeting the requirements of ACI 318 or 349 and the guidance of 201.2R was used for the concrete in contact with the embedded containment shell or liner. #*#2. The moisture barrier, at the junction where the shell or liner becomes embedded, is subject to aging management activities in accordance with ASME Section XI, Subsection IWE requirements. #*#3. The concrete is monitored to ensure that it is free of penetrating cracks that provide a path for water seepage to the surface of the containment shell or liner. #*#4. Borated water spills and water ponding on the concrete floor are common and when detected are cleaned up or diverted to a sump in a timely manner. #*# Operating experience has identified significant corrosion in some plants.#*# #*#If any of the	Yes, if corrosion is indicated from the IWE examinations	BWR

1693	CP-63	C-46	II.B2.1. CP-63	II.B2.1-1(C-46)	Steel elements (inaccessible areas): suppression chamber; drywell; drywell head; embedded shell; region shielded by diaphragm floor (as applicable)	Steel	Air – indoor, uncontrolled or Treated water	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.S1, "ASME Section XI, Subsection IWE" #*# #*#Chapter XI.S4, "10 CFR Part 50, Appendix J" #*# #*# Additional plant-specific activitities are warranted if loss of material due to corrosion is significant for inaccessible areas (embedded containment steel shell or liner).#*# #*#Loss of material due to corrosion is not significant if the following conditions are satisfied: #*#1. Concrete meeting the requirements of ACI 318 or 349 and the guidance of 201.2R was used for the concrete in contact with the embedded containment shell or liner. #*#2. The moisture barrier, at the junction where the shell or liner becomes embedded, is subject to aging management activities in accordance with ASME Section XI, Subsection IWE requirements. #*#3. The concrete is monitored to ensure that it is free of penetrating cracks that provide a path for water seepage to the surface of the containment shell or liner. #*#4. Borated water spills and water ponding on the concrete floor are common and when detected are cleaned up or diverted to a sump in a timely manner. #*# Operating experience has identified significant corrosion in some plants.#*# #*#If any of the	Yes, if corrosion is indicated from the IWE examinations	BWR

1694	CP-63	C-46	II.B2.2. CP-63	II.B2.2-10(C-46)	Steel elements (inaccessible areas): suppression chamber; drywell; drywell head; embedded shell; region shielded by diaphragm floor (as applicable)	Steel	Air – indoor, uncontrolled or Treated water	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.S1, “ASME Section XI, Subsection IWE” #*# #*#Chapter XI.S4, “10 CFR Part 50, Appendix J” #*# #*# Additional plant-specific activitities are warranted if loss of material due to corrosion is significant for inaccessible areas (embedded containment steel shell or liner).#*# #*#Loss of material due to corrosion is not significant if the following conditions are satisfied: #*#1. Concrete meeting the requirements of ACI 318 or 349 and the guidance of 201.2R was used for the concrete in contact with the embedded containment shell or liner. #*#2. The moisture barrier, at the junction where the shell or liner becomes embedded, is subject to aging management activities in accordance with ASME Section XI, Subsection IWE requirements. #*#3. The concrete is monitored to ensure that it is free of penetrating cracks that provide a path for water seepage to the surface of the containment shell or liner. #*#4. Borated water spills and water ponding on the concrete floor are common and when detected are cleaned up or diverted to a sump in a timely manner. #*# Operating experience has identified significant corrosion in some plants.#*# #*#If any of the	Yes, if corrosion is indicated from the IWE examinations	BWR
1695	CP-64	C-47	II.B2.2. CP-64	II.B2.2-13(C-47)	Steel elements: vent header; downcomers	Steel; stainless steel	Air – indoor, uncontrolled or Treated water	Cracking #*#due to cyclic loading #*#(CLB fatigue analysis does not exist)	Chapter XI.S1, “ASME Section XI, Subsection IWE”	No	BWR

1696	CP-65	C-50	II.B3.1.CP-65	II.B3.1-4(C-50)	Concrete: basemat, concrete fill-in annulus	Concrete	Air – indoor, uncontrolled or Air – outdoor	Reduction of strength and modulus #*#due to elevated temperature (>150°F general; >200°F local)	Plant-specific aging management program #*# #*#The implementation of 10 CFR 50.55a and ASME Section XI, Subsection IWL would not be able to identify the reduction of strength and modulus of elasticity due to elevated temperature. Thus, for any portions of concrete containment that exceed specified temperature limits, further evaluations are warranted. Subsection CC-3400 of ASME Section III, Division 2, specifies the concrete temperature limits for normal operation or any other long-term period. The temperatures shall not exceed 150°F except for local areas, such as around penetrations, which are not allowed to exceed 200°F. If significant equipment loads are supported by concrete at temperatures exceeding 150°F, an evaluation of the ability to withstand the postulated design loads is to be made. #*# #*#Higher temperatures than given above may be allowed in the concrete if tests and/or calculations are provided to evaluate the reduction in strength and modulus of elasticity and these reductions are applied to the design calculations.	Yes, if temperature limits are exceeded	BWR
1697	CP-66	C-51	II.B3.1.CP-66	II.B3.1-5(C-51)	Concrete (accessible areas): basemat, concrete fill-in annulus	Concrete	Any environment	Cracking #*#due to expansion from reaction with aggregates	Chapter XI.S2, “ASME Section XI, Subsection IWL”	No	BWR
1424	EP-59	E-06	V.B.EP-59	V.B-4(E-06)	Elastomer seals and components	Elastomers	Air – indoor, uncontrolled (External)	Hardening and loss of strength #*#due to elastomer degradation	Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components"	No	BWR

1423	EP-58	E-06	V.B.EP-58	V.B-4(E-06)	Elastomer seals and components	Elastomers	Air – indoor, uncontrolled (Internal)	Hardening and loss of strength #*#due to elastomer degradation	Chapter XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components"	No	BWR
1425	EP-60	E-08	V.D2.EP-60	V.D2-33(E-08)	Piping, piping components, and piping elements	Steel	Treated water	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR
1426	EP-61	E-14	V.D2.EP-61	V.D2-35(E-14)	Piping, piping components, and piping elements (Internal surfaces)	Stainless steel	Condensation (Internal)	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components"	No	BWR
2305	EP-92	E-17	V.A.EP-92	V.A-9(E-17)	Heat exchanger components	Steel	Closed-cycle cooling water	Loss of material #*#due to general, pitting, crevice, and galvanic corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	PWR
2306	EP-92	E-17	V.D1.EP-92	V.D1-6(E-17)	Heat exchanger components	Steel	Closed-cycle cooling water	Loss of material #*#due to general, pitting, crevice, and galvanic corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	PWR
2307	EP-92	E-17	V.D2.EP-92	V.D2-7(E-17)	Heat exchanger components	Steel	Closed-cycle cooling water	Loss of material #*#due to general, pitting, crevice, and galvanic corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR

1874	EP-90	E-18	V.D1.EP-90	V.D1-7(E-18)	Heat exchanger components	Steel	Raw water	Loss of material #*#due to general, pitting, crevice, and microbiologically-influenced corrosion; fouling that leads to corrosion	Chapter XI.M20, "Open-Cycle Cooling Water System"	No	PWR
1873	EP-90	E-18	V.A.EP-90	V.A-10(E-18)	Heat exchanger components	Steel	Raw water	Loss of material #*#due to general, pitting, crevice, and microbiologically-influenced corrosion; fouling that leads to corrosion	Chapter XI.M20, "Open-Cycle Cooling Water System"	No	PWR
1875	EP-90	E-18	V.D2.EP-90	V.D2-8(E-18)	Heat exchanger components	Steel	Raw water	Loss of material #*#due to general, pitting, crevice, and microbiologically-influenced corrosion; fouling that leads to corrosion	Chapter XI.M20, "Open-Cycle Cooling Water System"	No	BWR
2310	EP-93	E-19	V.D2.EP-93	V.D2-5(E-19)	Heat exchanger components	Stainless steel	Closed-cycle cooling water	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR
2309	EP-93	E-19	V.D1.EP-93	V.D1-4(E-19)	Heat exchanger components	Stainless steel	Closed-cycle cooling water	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	PWR

2308	EP-93	E-19	V.A.EP-93	V.A-7(E-19)	Heat exchanger components	Stainless steel	Closed-cycle cooling water	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	PWR
1876	EP-91	E-20	V.A.EP-91	V.A-8(E-20)	Heat exchanger components	Stainless steel	Raw water	Loss of material #*#due to pitting, crevice, and microbiologically-influenced corrosion; fouling that leads to corrosion	Chapter XI.M20, "Open-Cycle Cooling Water System"	No	PWR
1877	EP-91	E-20	V.D1.EP-91	V.D1-5(E-20)	Heat exchanger components	Stainless steel	Raw water	Loss of material #*#due to pitting, crevice, and microbiologically-influenced corrosion; fouling that leads to corrosion	Chapter XI.M20, "Open-Cycle Cooling Water System"	No	PWR
1878	EP-91	E-20	V.D2.EP-91	V.D2-6(E-20)	Heat exchanger components	Stainless steel	Raw water	Loss of material #*#due to pitting, crevice, and microbiologically-influenced corrosion; fouling that leads to corrosion	Chapter XI.M20, "Open-Cycle Cooling Water System"	No	BWR
1427	EP-62	E-31	V.C.EP-62	V.C-6(E-31)	Containment isolation piping and components (Internal surfaces)	Steel	Treated water	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
1428	EP-63	E-33	V.C.EP-63	V.C-4(E-33)	Containment isolation piping and components (Internal surfaces)	Stainless steel	Treated water	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR

2583	EP-111	E-42	V.B.EP-111	V.B-9(E-42)	Piping, piping components, and piping elements	Steel (with coating or wrapping)	Soil	Loss of material #*#due to general, pitting, crevice, and microbiologically-influenced corrosion	Chapter XI.M41, "Buried, Underground, and Limited-Access Piping and Tanks"	No	BWR/PWR
1429	EP-64	EP-1	V.E.EP-64	V.E-1(EP-1)	Bolting	Steel; stainless steel	Air – outdoor (External)	Loss of material #*#due to general (steel only), pitting, and crevice corrosion	Chapter XI.M18, "Bolting Integrity"	No	BWR/PWR
2313	EP-94	EP-13	V.D2.EP-94	V.D2-3(EP-13)	Heat exchanger components	Copper alloy	Closed-cycle cooling water	Loss of material #*#due to pitting, crevice, and galvanic corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR
2312	EP-94	EP-13	V.D1.EP-94	V.D1-2(EP-13)	Heat exchanger components	Copper alloy	Closed-cycle cooling water	Loss of material #*#due to pitting, crevice, and galvanic corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	PWR
2311	EP-94	EP-13	V.A.EP-94	V.A-5(EP-13)	Heat exchanger components	Copper alloy	Closed-cycle cooling water	Loss of material #*#due to pitting, crevice, and galvanic corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	PWR
2379	EP-101	EP-2	V.D1.EP-101	V.D2-18(EP-2)	Piping, piping components, and piping elements	Aluminum	Air with borated water leakage	Loss of material #*#due to boric acid corrosion	Chapter XI.M10, “Boric Acid Corrosion”	No	PWR
1441	EP-69	EP-24	V.E.EP-69	V.E-5(EP-24)	Closure bolting	Steel; stainless steel	Air – indoor, uncontrolled (External)	Loss of preload #*#due to thermal effects, gasket creep, and self-loosening	Chapter XI.M18, "Bolting Integrity"	No	BWR/PWR

1442	EP-70	EP-25	V.E.EP-70	V.E-4(EP-25)	Closure bolting	Steel; stainless steel	Air – indoor, uncontrolled (External)	Loss of material #*#due to general (steel only), pitting, and crevice corrosion	Chapter XI.M18, "Bolting Integrity"	No	BWR/PWR
1443	EP-71	EP-26	V.D2.EP-71	V.D2-19(EP-26)	Piping, piping components, and piping elements	Aluminum	Treated water	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR
1445	EP-72	EP-31	V.D2.EP-72	V.D2-27(EP-31)	Piping, piping components, and piping elements	Stainless steel	Soil	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M41, "Buried, Underground, and Limited-Access Piping and Tanks"	No	BWR
1444	EP-72	EP-31	V.D1.EP-72	V.D1-26(EP-31)	Piping, piping components, and piping elements	Stainless steel	Soil	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M41, "Buried, Underground, and Limited-Access Piping and Tanks"	No	PWR
1446	EP-73	EP-32	V.D2.EP-73	V.D2-28(EP-32)	Piping, piping components, and piping elements	Stainless steel	Treated water	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR
2314	EP-95	EP-33	V.A.EP-95	V.A-23(EP-33)	Piping, piping components, and piping elements	Stainless steel	Closed-cycle cooling water	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	PWR
2317	EP-95	EP-33	V.D2.EP-95	V.D2-25(EP-33)	Piping, piping components, and piping elements	Stainless steel	Closed-cycle cooling water	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR
2315	EP-95	EP-33	V.C.EP-95	V.C-7(EP-33)	Piping, piping components, and piping elements	Stainless steel	Closed-cycle cooling water	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR
2316	EP-95	EP-33	V.D1.EP-95	V.D1-22(EP-33)	Piping, piping components, and piping elements	Stainless steel	Closed-cycle cooling water	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	PWR

1448	EP-74	EP-34	V.D2.EP-74	V.D2-13(EP-34)	Heat exchanger tubes	Stainless steel	Treated water	Reduction of heat transfer #*#due to fouling	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR
1447	EP-74	EP-34	V.A.EP-74	V.A-16(EP-34)	Heat exchanger tubes	Stainless steel	Treated water	Reduction of heat transfer #*#due to fouling	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR
2320	EP-96	EP-35	V.D2.EP-96	V.D2-10(EP-35)	Heat exchanger tubes	Stainless steel	Closed-cycle cooling water	Reduction of heat transfer #*#due to fouling	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR
2318	EP-96	EP-35	V.A.EP-96	V.A-13(EP-35)	Heat exchanger tubes	Stainless steel	Closed-cycle cooling water	Reduction of heat transfer #*#due to fouling	Chapter XI.M21A, "Closed Treated Water Systems"	No	PWR
2319	EP-96	EP-35	V.D1.EP-96	V.D1-19(EP-35)	Heat exchanger tubes	Stainless steel	Closed-cycle cooling water	Reduction of heat transfer #*#due to fouling	Chapter XI.M21A, "Closed Treated Water Systems"	No	PWR
2324	EP-97	EP-36	V.D2.EP-97	V.D2-21(EP-36)	Piping, piping components, and piping elements	Copper alloy	Closed-cycle cooling water	Loss of material #*#due to pitting, crevice, and galvanic corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR
2323	EP-97	EP-36	V.D1.EP-97	V.D1-17(EP-36)	Piping, piping components, and piping elements	Copper alloy	Closed-cycle cooling water	Loss of material #*#due to pitting, crevice, and galvanic corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	PWR
2322	EP-97	EP-36	V.B.EP-97	V.B-6(EP-36)	Piping, piping components, and piping elements	Copper alloy	Closed-cycle cooling water	Loss of material #*#due to pitting, crevice, and galvanic corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR
2321	EP-97	EP-36	V.A.EP-97	V.A-20(EP-36)	Piping, piping components, and piping elements	Copper alloy	Closed-cycle cooling water	Loss of material #*#due to pitting, crevice, and galvanic corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	PWR

2330	EP-100	EP-39	V.A.EP-100	V.A-11(EP-39)	Heat exchanger tubes	Copper alloy	Closed-cycle cooling water	Reduction of heat transfer #*#due to fouling	Chapter XI.M21A, "Closed Treated Water Systems"	No	PWR
1450	EP-75	EP-40	V.D1.EP-75	V.D1-12(EP-40)	Heat exchanger tubes	Steel	Lubricating oil	Reduction of heat transfer #*#due to fouling	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR
1451	EP-75	EP-40	V.D2.EP-75	V.D2-14(EP-40)	Heat exchanger tubes	Steel	Lubricating oil	Reduction of heat transfer #*#due to fouling	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR
1449	EP-75	EP-40	V.A.EP-75	V.A-17(EP-40)	Heat exchanger tubes	Steel	Lubricating oil	Reduction of heat transfer #*#due to fouling	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR
2327	EP-98	EP-44	V.D1.EP-98	V.D1-23(EP-44)	Piping, piping components, and piping elements	Stainless steel	Closed-cycle cooling water >60°C (>140°F)	Cracking #*#due to stress corrosion cracking	Chapter XI.M21A, "Closed Treated Water Systems"	No	PWR
2325	EP-98	EP-44	V.A.EP-98	V.A-24(EP-44)	Piping, piping components, and piping elements	Stainless steel	Closed-cycle cooling water >60°C (>140°F)	Cracking #*#due to stress corrosion cracking	Chapter XI.M21A, "Closed Treated Water Systems"	No	PWR
2326	EP-98	EP-44	V.C.EP-98	V.C-8(EP-44)	Piping, piping components, and piping elements	Stainless steel	Closed-cycle cooling water >60°C (>140°F)	Cracking #*#due to stress corrosion cracking	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR
2328	EP-98	EP-44	V.D2.EP-98	V.D2-26(EP-44)	Piping, piping components, and piping elements	Stainless steel	Closed-cycle cooling water >60°C (>140°F)	Cracking #*#due to stress corrosion cracking	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR
1453	EP-76	EP-45	V.D1.EP-76	V.D1-19(EP-45)	Piping, piping components, and piping elements	Copper alloy	Lubricating oil	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR
1452	EP-76	EP-45	V.A.EP-76	V.A-21(EP-45)	Piping, piping components, and piping elements	Copper alloy	Lubricating oil	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR

1454	EP-76	EP-45	V.D2.EP-76	V.D2-22(EP-45)	Piping, piping components, and piping elements	Copper alloy	Lubricating oil	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR
1456	EP-77	EP-46	V.D1.EP-77	V.D1-28(EP-46)	Piping, piping components, and piping elements	Steel	Lubricating oil	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR
1457	EP-77	EP-46	V.D2.EP-77	V.D2-30(EP-46)	Piping, piping components, and piping elements	Steel	Lubricating oil	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR
1455	EP-77	EP-46	V.A.EP-77	V.A-25(EP-46)	Piping, piping components, and piping elements	Steel	Lubricating oil	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR
1458	EP-78	EP-47	V.A.EP-78	V.A-12(EP-47)	Heat exchanger tubes	Copper alloy	Lubricating oil	Reduction of heat transfer #*#due to fouling	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR
1459	EP-78	EP-47	V.D1.EP-78	V.D1-8(EP-47)	Heat exchanger tubes	Copper alloy	Lubricating oil	Reduction of heat transfer #*#due to fouling	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR
1460	EP-78	EP-47	V.D2.EP-78	V.D2-9(EP-47)	Heat exchanger tubes	Copper alloy	Lubricating oil	Reduction of heat transfer #*#due to fouling	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR
2329	EP-99	EP-48	V.C.EP-99	V.C-9(EP-48)	Piping, piping components, and piping elements	Steel	Closed-cycle cooling water	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	BWR/PWR
2595	EP-112	EP-5	V.F.EP-112	V.F-17(EP-5)	Piping, piping components, and piping elements	Steel	Concrete - dry	None	None	No	BWR/PWR

1463	EP-79	EP-50	V.D2.EP-79	V.D2-11(EP-50)	Heat exchanger tubes	Stainless steel	Lubricating oil	Reduction of heat transfer #*#due to fouling	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, "One-Time Inspection"	No	BWR
1461	EP-79	EP-50	V.A.EP-79	V.A-14(EP-50)	Heat exchanger tubes	Stainless steel	Lubricating oil	Reduction of heat transfer #*#due to fouling	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, "One-Time Inspection"	No	PWR
1462	EP-79	EP-50	V.D1.EP-79	V.D1-10(EP-50)	Heat exchanger tubes	Stainless steel	Lubricating oil	Reduction of heat transfer #*#due to fouling	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, "One-Time Inspection"	No	PWR
1464	EP-80	EP-51	V.D1.EP-80	V.D1-24(EP-51)	Piping, piping components, and piping elements	Stainless steel	Lubricating oil	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, "One-Time Inspection"	No	PWR
1465	EP-81	EP-53	V.A.EP-81	V.A-26(EP-53)	Piping, piping components, and piping elements (Internal surfaces); tanks	Stainless steel	Condensation (Internal)	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components"	No	PWR
1466	EP-81	EP-53	V.D1.EP-81	V.D1-29(EP-53)	Piping, piping components, and piping elements (Internal surfaces); tanks	Stainless steel	Condensation (Internal)	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components"	No	PWR

1880	LP-33	L-01	VI.A.LP-33	VI.A-2(L-01)	Insulation material for electrical cables and connections (including terminal blocks, fuse holders, etc.)	Various organic polymers (e.g., EPR, SR, EPDM, XLPE)	Adverse localized environment caused by heat, radiation, or moisture	Reduced insulation resistance #*#due to thermal/thermoxidative degradation of organics, radiolysis, and photolysis (UV sensitive materials only) of organics; #*#radiation-induced oxidation; #*#moisture intrusion	Chapter XI.E1, "Insulation Material for Electrical Cables and Connections Not Subject to 10 CFR 50.49 Environmental Qualification Requirements	No	BWR/PWR
1881	LP-34	L-02	VI.A.LP-34	VI.A-3(L-02)	Insulation material for electrical cables and connections used in instrumentation circuits that are sensitive to reduction in conductor insulation resistance (IR)	Various organic polymers (e.g., EPR, SR, EPDM, XLPE)	Adverse localized environment caused by heat, radiation, or moisture	Reduced insulation resistance #*#due to thermal/thermoxidative degradation of organics, radiolysis, and photolysis (UV sensitive materials only) of organics; #*#radiation-induced oxidation; #*#moisture intrusion	Chapter XI.E2, "Insulation Material for Electrical Cables and Connections Not Subject to 10 CFR 50.49 Environmental Qualification Requirements Used in Instrumentation Circuits"	No	BWR/PWR

1882	LP-35	L-03	VI.A.LP-35	VI.A-4(L-03)	Conductor insulation for inaccessible power cables greater than or equal to 480 volts (e.g., installed in conduit or direct buried)	Various organic polymers (e.g., EPR, SR, EPDM, XLPE)	Adverse localized environment caused by significant moisture	Reduced insulation resistance #*#due to moisture	Chapter XI.E3, "Inaccessible Power Cables Not Subject to 10 CFR 50.49 Environmental Qualification Requirements"	No	BWR/PWR
1883	LP-36	L-04	VI.A.LP-36	VI.A-5(L-04)	Connector contacts for electrical connectors exposed to borated water leakage	Various metals used for electrical contacts	Air with borated water leakage	Increased resistance of connection #*#due to corrosion of connector contact surfaces caused by intrusion of borated water	Chapter XI.M10, “Boric Acid Corrosion”	No	PWR

1271	LP-23	LP-01	VI.A.LP-23	VI.A-8(LP-01)	Fuse holders (not part of active equipment): metallic clamps	Various metals used for electrical connections	Air – indoor, uncontrolled	Increased resistance of connection #*#due to chemical contamination, corrosion, and oxidation (in an air, indoor controlled environment, increased resistance of connection due to chemical contamination, corrosion and oxidation do not apply); #*#fatigue #*#due to ohmic heating, thermal cycling, electrical transients	Chapter XI.E5, "Fuse Holders"	No	BWR/PWR
1272	LP-24	LP-02	VI.A.LP-24	VI.A-7(LP-02)	Fuse holders (not part of active equipment): insulation material	Insulation material: bakelite; phenolic melamine or ceramic; molded polycarbonate; other	Air – indoor, controlled or uncontrolled	None	None	No	BWR/PWR

1273	LP-25	LP-04	VI.A.LP-25	VI.A-11(LP-04)	Metal enclosed bus: bus/connections	Various metals used for electrical bus and connections	Air – indoor, controlled or uncontrolled or Air – outdoor	Increased resistance of connection #*#due to the loosening of bolts caused by thermal cycling and ohmic heating	Chapter XI.E4, "Metal Enclosed Bus"	No	BWR/PWR
1274	LP-26	LP-05	VI.A.LP-26	VI.A-14(LP-05)	Metal enclosed bus: insulation; insulators	Porcelain; xenoy; thermo-plastic organic polymers	Air – indoor, controlled or uncontrolled or Air – outdoor	Reduced insulation resistance #*#due to thermal/thermoxidative degradation of organics/thermoplastics, radiation-induced oxidation, moisture/debris intrusion, and ohmic heating	Chapter XI.E4, "Metal Enclosed Bus"	No	BWR/PWR
1276	LP-28	LP-07	VI.A.LP-28	VI.A-9(LP-07)	High-voltage insulators	Porcelain; malleable iron; aluminum; galvanized steel; cement	Air – outdoor	Reduced insulation resistance #*#due to presence of salt deposits or surface contamination	A plant-specific aging management program is to be evaluated for plants located such that the potential exists for salt deposits or surface contamination (e.g., in the vicinity of salt water bodies or industrial pollution)	Yes, plant-specific	BWR/PWR

1885	LP-38	LP-08	VI.A.LP-38	VI.A-16(LP-08)	Transmission conductors and connections	Aluminum; steel	Air – outdoor	Loss of material #*#due to wind-induced abrasion; #*#Loss of conductor strength #*#due to corrosion;#*#Increased resistance of connection #*#due to oxidation or loss of pre-load	A plant-specific aging management program is to be evaluated	Yes, plant-specific	BWR/PWR
1886	LP-39	LP-09	VI.A.LP-39	VI.A-15(LP-09)	Switchyard bus and connections	Aluminum; copper; bronze; stainless steel; galvanized steel	Air – outdoor	Loss of material #*#due to wind-induced abrasion; #*#Increased resistance of connection #*#due to oxidation or loss of pre-load	A plant-specific aging management program is to be evaluated	Yes, plant-specific	BWR/PWR
1277	LP-29	LP-10	VI.A.LP-29	VI.A-12(LP-10)	Metal enclosed bus: enclosure assemblies	Elastomers	Air – indoor, controlled or uncontrolled or Air – outdoor	Hardening and loss of strength #*#due to elastomer degradation	Chapter XI.E4, "Metal Enclosed Bus," or #*#Chapter XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components"	No	BWR/PWR
1879	LP-32	LP-11	VI.A.LP-32	VI.A-10(LP-11)	High-voltage insulators	Porcelain; malleable iron; aluminum; galvanized steel; cement	Air – outdoor	Loss of material #*#due to mechanical wear caused by wind blowing on transmission conductors	A plant-specific aging management program is to be evaluated	Yes, plant-specific	BWR/PWR

1278	LP-30	LP-12	VI.A.LP-30	VI.A-1(LP-12)	Cable connections (metallic parts)	Various metals used for electrical contacts	Air – indoor, controlled or uncontrolled or Air – outdoor	Increased resistance of connection #*#due to thermal cycling, ohmic heating, electrical transients, vibration, chemical contamination, corrosion, and oxidation	Chapter XI.E6, "Electrical Cable Connections Not Subject to 10 CFR 50.49 Environmental Qualification Requirements"	No	BWR/PWR
2260	TP-300	New Record	III.A2.TP-300		High-strength structural bolting	Low-alloy steel, actual measured yield strength ≥ 150 ksi (1,034 MPa)	Air – indoor, uncontrolled or Air – outdoor	Cracking #*#due to stress corrosion cracking	Chapter XI.S6, "Structures Monitoring"	No	BWR
2259	TP-300	New Record	III.A1.TP-300		High-strength structural bolting	Low-alloy steel, actual measured yield strength ≥ 150 ksi (1,034 MPa)	Air – indoor, uncontrolled or Air – outdoor	Cracking #*#due to stress corrosion cracking	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR

2253	TP-287	New Record	III.A8.TP-287	High-strength structural bolting	Low-alloy steel, actual measured yield strength≥ 150 ksi (1,034 MPa)	Air – indoor, uncontrolled or Air – outdoor	Loss of material #*#due to general and pitting corrosion	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
2261	TP-300	New Record	III.A3.TP-300	High-strength structural bolting	Low-alloy steel, actual measured yield strength≥ 150 ksi (1,034 MPa)	Air – indoor, uncontrolled or Air – outdoor	Cracking #*#due to stress corrosion cracking	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
2262	TP-300	New Record	III.A4.TP-300	High-strength structural bolting	Low-alloy steel, actual measured yield strength≥ 150 ksi (1,034 MPa)	Air – indoor, uncontrolled or Air – outdoor	Cracking #*#due to stress corrosion cracking	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
2263	TP-300	New Record	III.A5.TP-300	High-strength structural bolting	Low-alloy steel, actual measured yield strength≥ 150 ksi (1,034 MPa)	Air – indoor, uncontrolled or Air – outdoor	Cracking #*#due to stress corrosion cracking	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR

2248	TP-287	New Record	III.A3.TP-287	High-strength structural bolting	Low-alloy steel, actual measured yield strength ≥ 150 ksi (1,034 MPa)	Air – indoor, uncontrolled or Air – outdoor	Loss of material #*#due to general and pitting corrosion	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
2236	TP-274	New Record	III.A4.TP-274	Structural bolting	Steel; galvanized steel	Air – outdoor	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
2237	TP-274	New Record	III.A5.TP-274	Structural bolting	Steel; galvanized steel	Air – outdoor	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
2239	TP-274	New Record	III.A7.TP-274	Structural bolting	Steel; galvanized steel	Air – outdoor	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
2240	TP-274	New Record	III.A8.TP-274	Structural bolting	Steel; galvanized steel	Air – outdoor	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
2241	TP-274	New Record	III.A9.TP-274	Structural bolting	Steel; galvanized steel	Air – outdoor	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.S6, "Structures Monitoring"	No	BWR

2242	TP-274	New Record	III.B2.TP-274	Structural bolting	Steel; galvanized steel	Air – outdoor	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
2243	TP-274	New Record	III.B3.TP-274	Structural bolting	Steel; galvanized steel	Air – outdoor	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
2244	TP-274	New Record	III.B4.TP-274	Structural bolting	Steel; galvanized steel	Air – outdoor	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
2245	TP-274	New Record	III.B5.TP-274	Structural bolting	Steel; galvanized steel	Air – outdoor	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
2254	TP-287	New Record	III.A9.TP-287	High-strength structural bolting	Low-alloy steel, actual measured yield strength ≥ 150 ksi (1,034 MPa)	Air – indoor, uncontrolled or Air – outdoor	Loss of material #*#due to general and pitting corrosion	Chapter XI.S6, "Structures Monitoring"	No	BWR

2247	TP-287	New Record	III.A2.TP-287	High-strength structural bolting	Low-alloy steel, actual measured yield strength≥ 150 ksi (1,034 MPa)	Air – indoor, uncontrolled or Air – outdoor	Loss of material #*#due to general and pitting corrosion	Chapter XI.S6, "Structures Monitoring"	No	BWR
2258	TP-287	New Record	III.B5.TP-287	High-strength structural bolting	Low-alloy steel, actual measured yield strength≥ 150 ksi (1,034 MPa)	Air – indoor, uncontrolled or Air – outdoor	Loss of material #*#due to general and pitting corrosion	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
2249	TP-287	New Record	III.A4.TP-287	High-strength structural bolting	Low-alloy steel, actual measured yield strength≥ 150 ksi (1,034 MPa)	Air – indoor, uncontrolled or Air – outdoor	Loss of material #*#due to general and pitting corrosion	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
2250	TP-287	New Record	III.A5.TP-287	High-strength structural bolting	Low-alloy steel, actual measured yield strength≥ 150 ksi (1,034 MPa)	Air – indoor, uncontrolled or Air – outdoor	Loss of material #*#due to general and pitting corrosion	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR

2252	TP-287	New Record	III.A7.TP-287	High-strength structural bolting	Low-alloy steel, actual measured yield strength≥ 150 ksi (1,034 MPa)	Air – indoor, uncontrolled or Air – outdoor	Loss of material #*#due to general and pitting corrosion	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
2128	CP-148	New Record	II.A3.CP-148	Structural bolting	Steel	Air – indoor, uncontrolled or Air – outdoor	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.S1, “ASME Section XI, Subsection IWE”	No	PWR
2136	TP-108	New Record	III.A2.TP-108	Groups 1-3, 5, 7-9:Concrete (inaccessible areas): foundation	Concrete	Air – outdoor	Loss of material (spalling, scaling) and cracking #*#due to freeze-thaw	Further evaluation is required for plants that are located in moderate to severe weathering conditions (weathering index >100 day-inch/yr) (NUREG-1557) to determine if a plant-specific aging management program is needed. A plant-specific aging management program is not required if documented evidence confirms that the existing concrete had air entrainment content (as per Table CC-2231-2 of the ASME Section III Division 2), and subsequent inspections of accessible areas did not exhibit degradation related to freeze-thaw. Such inspections should be considered a part of the evaluation. If this condition is not satisfied, then a plant-specific aging management program is required to manage loss of material (spalling, scaling) and cracking due to freeze-thaw of concrete in inaccessible areas. #*#The weathering index for the continental US is shown in ASTM C33-90, Fig. 1.	Yes, for plants located in moderate to severe weathering conditions	BWR

2265	TP-300	New Record	III.A7.TP-300	High-strength structural bolting	Low-alloy steel, actual measured yield strength≥ 150 ksi (1,034 MPa)	Air – indoor, uncontrolled or Air – outdoor	Cracking #*#due to stress corrosion cracking	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
2255	TP-287	New Record	III.B2.TP-287	High-strength structural bolting	Low-alloy steel, actual measured yield strength≥ 150 ksi (1,034 MPa)	Air – indoor, uncontrolled or Air – outdoor	Loss of material #*#due to general and pitting corrosion	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
2256	TP-287	New Record	III.B3.TP-287	High-strength structural bolting	Low-alloy steel, actual measured yield strength≥ 150 ksi (1,034 MPa)	Air – indoor, uncontrolled or Air – outdoor	Loss of material #*#due to general and pitting corrosion	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
2257	TP-287	New Record	III.B4.TP-287	High-strength structural bolting	Low-alloy steel, actual measured yield strength≥ 150 ksi (1,034 MPa)	Air – indoor, uncontrolled or Air – outdoor	Loss of material #*#due to general and pitting corrosion	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR

2246	TP-287	New Record	III.A1.TP-287	High-strength structural bolting	Low-alloy steel, actual measured yield strength≥ 150 ksi (1,034 MPa)	Air – indoor, uncontrolled or Air – outdoor	Loss of material #*#due to general and pitting corrosion	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
2117	CP-99	New Record	II.B2.2.CP-99	Concrete (inaccessible areas): containment; wall; basemat	Concrete	Any environment	Cracking #*#due to expansion from reaction with aggregates	Further evaluation is required to determine if a plant-specific aging management program is needed to manage cracking and expansion due to reaction with aggregate of concrete in Inaccessible Areas. A plant-specific aging management program is not required if (1) as described in NUREG-1557, investigations, tests, and petrographic examinations of aggregates performed in accordance with ASTM C295 and other ASTM reactivity tests, as required, can demonstrate that those aggregates do not adversely react within concrete, or (2) For potentially reactive aggregates, aggregate concrete reaction is not significant if it is demonstrated that the in-place concrete can perform its intended function.	Yes, if concrete is not constructed as stated	BWR
2269	TP-300	New Record	III.B3.TP-300	High-strength structural bolting	Low-alloy steel, actual measured yield strength≥ 150 ksi (1,034 MPa)	Air – indoor, uncontrolled or Air – outdoor	Cracking #*#due to stress corrosion cracking	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR

2270	TP-300	New Record	III.B4.TP-300		High-strength structural bolting	Low-alloy steel, actual measured yield strength ≥ 150 ksi (1,034 MPa)	Air – indoor, uncontrolled or Air – outdoor	Cracking #*#due to stress corrosion cracking	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
2271	TP-300	New Record	III.B5.TP-300		High-strength structural bolting	Low-alloy steel, actual measured yield strength ≥ 150 ksi (1,034 MPa)	Air – indoor, uncontrolled or Air – outdoor	Cracking #*#due to stress corrosion cracking	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
2272	TP-301	New Record	III.A4.TP-301		Service Level I coatings	Coatings	Air – indoor, uncontrolled	Loss of coating integrity #*#due to blistering, cracking, flaking, peeling, physical damage	Chapter XI.S8, "Protective Coating Monitoring and Maintenance"	No	BWR/PWR
2302	LP-41	New Record	VI.A.LP-41	VI.A-13(LP-06)	Metal enclosed bus: external surface of enclosure assemblies	Galvanized steel; aluminum	Air – indoor, controlled or uncontrolled	None	None	No	BWR/PWR
2303	LP-42	New Record	VI.A.LP-42	VI.A-13(LP-06)	Metal enclosed bus: external surface of enclosure assemblies	Galvanized steel; aluminum	Air – outdoor	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.E4, "Metal Enclosed Bus," or #*#Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
2130	CP-150	New Record	II.A3.CP-150		Structural bolting	Any	Any environment	Loss of preload #*#due to self-loosening	Chapter XI.S1, “ASME Section XI, Subsection IWE,” and #*#Chapter XI.S4, “10 CFR Part 50, Appendix J”	No	PWR

2118	CP-79	New Record	II.B2.2. CP-79	Concrete (accessible areas): basemat; reinforcing steel	Concrete; steel	Air – indoor, uncontrolled or Air – outdoor	Cracking; loss of bond; and loss of material (spalling, scaling) #*#due to corrosion of embedded steel	Chapter XI.S2, “ASME Section XI, Subsection IWL”	No	BWR
2121	CP-75	New Record	II.B3.1. CP-75	Concrete (inaccessible areas): basemat; reinforcing steel	Concrete; steel	Air – indoor, uncontrolled or Air – outdoor	Cracking; loss of bond; and loss of material (spalling, scaling) #*#due to corrosion of embedded steel	Chapter XI.S2, “ASME Section XI, Subsection IWL,” or #*#Chapter XI.S6, "Structure Monitoring"	No	BWR
2116	CP-110	New Record	II.B2.2. CP-110	Concrete (inaccessible areas): containment; wall; basemat	Concrete	Water – flowing	Increase in porosity and permeability #*#due to leaching of calcium hydroxide and carbonation	Further evaluation is required to determine if a plant-specific aging management program is needed to manage increase in porosity, and permeability due to leaching of calcium hydroxide and carbonation of concrete in Inaccessible Areas. A plant-specific aging management program is not required if (1) There is evidence in the accessible areas that the flowing water has not caused leaching and carbonation, or (2) Evaluation determined that the observed leaching of calcium hydroxide and carbonation in accessible areas has no impact on the intended function of the concrete structure.	Yes, if leaching is observed in accessible areas that impact intended function	BWR

2115	CP-135	New Record	II.B3.2.CP-135	Concrete (inaccessible areas): dome; wall; basemat	Concrete	Air – outdoor or Ground water/soil	Loss of material (spalling, scaling) and cracking #*#due to freeze-thaw	Further evaluation is required for plants that are located in moderate to severe weathering conditions (weathering index >100 day-inch/yr) (NUREG-1557) to determine if a plant-specific aging management program is needed. A plant-specific aging management program is not required if documented evidence confirms that the existing concrete had air entrainment content (as per Table CC-2231-2 of the ASME Section III Division 2), and subsequent inspections of accessible areas did not exhibit degradation related to freeze-thaw. Such inspections should be considered a part of the evaluation. If this condition is not satisfied, then a plant-specific aging management program is required to manage loss of material (spalling, scaling) and cracking due to freeze-thaw of concrete in inaccessible areas. #*#The weathering index for the continental US is shown in ASTM C33-90, Fig. 1.	Yes, for plants located in moderate to severe weathering conditions	BWR
2113	CP-72	New Record	II.B3.1.CP-72	Concrete (accessible areas): basemat	Concrete	Ground water/soil	Increase in porosity and permeability; cracking; loss of material (spalling, scaling) #*#due to aggressive chemical attack	Chapter XI.S2, “ASME Section XI, Subsection IWL,” or #*#Chapter XI.S6, "Structure Monitoring"	No	BWR

2111	CP-109	New Record	II.B3.1.CP-109	Steel elements: suppression chamber shell (interior surface)	Steel	Air – indoor, uncontrolled or Treated water	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.S1, "ASME Section XI, Subsection IWE" #*#Plant-specific aging management program is required if plant operating experience identified significant corrosion. If protective coating is credited for preventing corrosion, the coating should be included in scope of license renewal and subject to aging management review.	Yes, if corrosion is significant	BWR
2110	CP-48	New Record	II.B1.1.CP-48	Steel elements: torus shell	Steel	Air – indoor, uncontrolled or Treated water	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.S1, "ASME Section XI, Subsection IWE," and #*#Chapter XI.S4, "10 CFR Part 50, Appendix J" #*#Significant corrosion of the torus shell and degradation of its protective coating are identified in IN 88-82. Other industrywide operating indicates a number of incidences of torus corrosion. License renewal applicants are advised to address their plant specific operating experience related to the torus shell corrosion. If the identified corrosion is significant, a plant specific aging management is required. If protective coating is credited for preventing corrosion of the torus shell, the coating should be included in scope of license renewal and subject to aging management review .	Yes, if corrosion is significant #*#Recoating of the torus is recommended.	BWR
2109	CP-113	New Record	II.B3.1.CP-113	Steel elements (inaccessible areas): drywell shell; drywell head; and drywell shell in sand pocket regions	Steel	Air – indoor, uncontrolled or Concrete	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.S1, "ASME Section XI, Subsection IWE," and #*#Chapter XI.S4, "10 CFR Part 50, Appendix J"	Yes, if corrosion is indicated from the IWE examinations	BWR

2304	LP-43	New Record	VI.A.LP-43	VI.A-13(LP-06)	Metal enclosed bus: external surface of enclosure assemblies	Steel	Air – indoor, uncontrolled or Air – outdoor	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.E4, "Metal Enclosed Bus," or #*#Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
2225	TP-261	New Record	III.A6.TP-261		Structural bolting	Any	Any environment	Loss of preload #*#due to self-loosening	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
2266	TP-300	New Record	III.A8.TP-300		High-strength structural bolting	Low-alloy steel, actual measured yield strength ≥ 150 ksi (1,034 MPa)	Air – indoor, uncontrolled or Air – outdoor	Cracking #*#due to stress corrosion cracking	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
2267	TP-300	New Record	III.A9.TP-300		High-strength structural bolting	Low-alloy steel, actual measured yield strength ≥ 150 ksi (1,034 MPa)	Air – indoor, uncontrolled or Air – outdoor	Cracking #*#due to stress corrosion cracking	Chapter XI.S6, "Structures Monitoring"	No	BWR
2268	TP-300	New Record	III.B2.TP-300		High-strength structural bolting	Low-alloy steel, actual measured yield strength ≥ 150 ksi (1,034 MPa)	Air – indoor, uncontrolled or Air – outdoor	Cracking #*#due to stress corrosion cracking	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR

2133	CP-152	New Record	II.B4.CP-152	Service Level I coatings	Coatings	Air – indoor, uncontrolled	Loss of coating integrity #*#due to blistering, cracking, flaking, peeling, physical damage	Chapter XI.S8, "Protective Coating Monitoring and Maintenance"	No	BWR
2132	CP-152	New Record	II.A3.CP-152	Service Level I coatings	Coatings	Air – indoor, uncontrolled	Loss of coating integrity #*#due to blistering, cracking, flaking, peeling, physical damage	Chapter XI.S8, "Protective Coating Monitoring and Maintenance"	No	PWR
2131	CP-150	New Record	II.B4.CP-150	Structural bolting	Any	Any environment	Loss of preload #*#due to self-loosening	Chapter XI.S1, “ASME Section XI, Subsection IWE,” and #*#Chapter XI.S4, “10 CFR Part 50, Appendix J”	No	BWR
2119	CP-80	New Record	II.B1.1.CP-80	Concrete (inaccessible areas): basemat; reinforcing steel	Concrete; steel	Air – indoor, uncontrolled or Air – outdoor	Cracking; loss of bond; and loss of material (spalling, scaling) #*#due to corrosion of embedded steel	Chapter XI.S6, "Structures Monitoring"	No	BWR
2129	CP-148	New Record	II.B4.CP-148	Structural bolting	Steel	Air – indoor, uncontrolled or Air – outdoor	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.S1, “ASME Section XI, Subsection IWE”	No	BWR
2120	CP-74	New Record	II.A2.CP-74	Concrete (accessible areas): basemat; reinforcing steel	Concrete; steel	Air – indoor, uncontrolled or Air – outdoor	Cracking; loss of bond; and loss of material (spalling, scaling) #*#due to corrosion of embedded steel	Chapter XI.S2, “ASME Section XI, Subsection IWL”	No	PWR

2127	CP-147	New Record	II.A1.CP-147	Concrete (inaccessible areas): dome; wall; basemat; ring girders; buttresses	Concrete	Air – outdoor or Ground water/soil	Loss of material (spalling, scaling) and cracking #*#due to freeze-thaw	Further evaluation is required for plants that are located in moderate to severe weathering conditions (weathering index >100 day-inch/yr) (NUREG-1557) to determine if a plant-specific aging management program is needed. A plant-specific aging management program is not required if documented evidence confirms that the existing concrete had air entrainment content (as per Table CC-2231-2 of the ASME Section III Division 2), and subsequent inspections of accessible areas did not exhibit degradation related to freeze-thaw. Such inspections should be considered a part of the evaluation. If this condition is not satisfied, then a plant-specific aging management program is required to manage loss of material (spalling, scaling) and cracking due to freeze-thaw of concrete in inaccessible areas. #*#The weathering index for the continental US is shown in ASTM C33-90, Fig. 1.	Yes, for plants located in moderate to severe weathering conditions	PWR
2126	CP-114	New Record	II.B2.1.CP-114	Steel elements (inaccessible areas): support skirt	Steel	Concrete	None	None	No	BWR
2125	CP-117	New Record	II.B1.2.CP-117	Steel elements: downcomer pipes	Steel	Air – indoor, uncontrolled or Treated water	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.S1, “ASME Section XI, Subsection IWE”	No	BWR

2124	CP-46	New Record	II.B2.1. CP-46		Steel elements (accessible areas): suppression chamber; drywell; drywell head; embedded shell; region shielded by diaphragm floor (as applicable)	Steel	Air – indoor, uncontrolled or Treated water	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.S1, “ASME Section XI, Subsection IWE,” and #*#Chapter XI.S4, “10 CFR Part 50, Appendix J”	No	BWR
2123	CP-46	New Record	II.B2.2. CP-46		Steel elements (accessible areas): suppression chamber; drywell; drywell head; embedded shell; region shielded by diaphragm floor (as applicable)	Steel	Air – indoor, uncontrolled or Treated water	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.S1, “ASME Section XI, Subsection IWE,” and #*#Chapter XI.S4, “10 CFR Part 50, Appendix J”	No	BWR
2122	CP-142	New Record	II.B2.1. CP-142		Unbraced downcomers	Steel; stainless steel; dissimilar metal welds	Air – indoor, uncontrolled or Treated water	Cracking #*#due to cyclic loading #*#(CLB fatigue analysis does not exist)	Chapter XI.S1, “ASME Section XI, Subsection IWE”	No	BWR
2134	CP-114	New Record	II.B2.2. CP-114		Steel elements (inaccessible areas): support skirt	Steel	Concrete	None	None	No	BWR
2235	TP-274	New Record	III.A3.TP-274		Structural bolting	Steel; galvanized steel	Air – outdoor	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
2178	TP-212	New Record	III.A2.TP-212		Groups 1-3, 5, 7-9 - concrete (inaccessible areas): below-grade exterior; foundation	Concrete	Ground water/soil	Cracking; loss of bond; and loss of material (spalling, scaling) #*#due to corrosion of embedded steel	Chapter XI.S6, "Structures Monitoring"	No	BWR
2227	TP-261	New Record	III.A8.TP-261		Structural bolting	Any	Any environment	Loss of preload #*#due to self-loosening	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR

2205	TP-235	New Record	III.B1.2.TP-235	Structural bolting	Steel; galvanized steel	Air – outdoor	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.S3, “ASME Section XI, Subsection IWF”	No	BWR/PWR
2206	TP-235	New Record	III.B1.3.TP-235	Structural bolting	Steel; galvanized steel	Air – outdoor	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.S3, “ASME Section XI, Subsection IWF”	No	BWR/PWR
2207	TP-248	New Record	III.A1.TP-248	Structural bolting	Steel	Air – indoor, uncontrolled	Loss of material #*#due to general, pitting and crevice corrosion	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
2208	TP-248	New Record	III.A2.TP-248	Structural bolting	Steel	Air – indoor, uncontrolled	Loss of material #*#due to general, pitting and crevice corrosion	Chapter XI.S6, "Structures Monitoring"	No	BWR
2209	TP-248	New Record	III.A3.TP-248	Structural bolting	Steel	Air – indoor, uncontrolled	Loss of material #*#due to general, pitting and crevice corrosion	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
2203	TP-232	New Record	III.B1.3.TP-232	Structural bolting	Stainless steel	Treated water	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M2, “Water Chemistry,” for BWR water, and #*#Chapter XI.S3, “ASME Section XI, Subsection IWF”	No	BWR/PWR
2211	TP-248	New Record	III.A5.TP-248	Structural bolting	Steel	Air – indoor, uncontrolled	Loss of material #*#due to general, pitting and crevice corrosion	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
2202	TP-232	New Record	III.B1.2.TP-232	Structural bolting	Stainless steel	Treated water	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M2, “Water Chemistry,” for BWR water, and #*#Chapter XI.S3, “ASME Section XI, Subsection IWF”	No	BWR/PWR

2364	RP-249	New Record	IV.B4.RP-249	IV.B4-12(R-196)	Core barrel assembly: baffle plate accessible surfaces within one inch around each baffle plate flow and bolt hole	Stainless steel	Reactor coolant and neutron flux	Loss of fracture toughness #*#due to neutron irradiation embrittlement	Chapter XI.M16A, “PWR Vessel Internals” #*#Primary components (identified in the "Structure and Components" column) #*#(for Expansion components see AMR Line Item IV.B4.RP-250)	No	PWR
2177	TP-212	New Record	III.A1.TP-212		Groups 1-3, 5, 7-9 - concrete (inaccessible areas): below-grade exterior; foundation	Concrete	Ground water/soil	Cracking; loss of bond; and loss of material (spalling, scaling) #*#due to corrosion of embedded steel	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
2176	TP-204	New Record	III.A9.TP-204		All Groups except Group 6:Concrete (inaccessible areas): all	Concrete	Any environment	Cracking #*#due to expansion from reaction with aggregates	Further evaluation is required to determine if a plant-specific aging management program is needed to manage cracking and expansion due to reaction with aggregate of concrete in Inaccessible Areas. A plant-specific aging management program is not required if (1) as described in NUREG-1557, investigations, tests, and petrographic examinations of aggregates performed in accordance with ASTM C295 and other ASTM reactivity tests, as required, can demonstrate that those aggregates do not adversely react within concrete, or (2) For potentially reactive aggregates, aggregate concrete reaction is not significant if it is demonstrated that the in-place concrete can perform its intended function.	Yes, if concrete is not constructed as stated	BWR

2175	TP-204	New Record	III.A8.TP-204	All Groups except Group 6:Concrete (inaccessible areas): all	Concrete	Any environment	Cracking #*#due to expansion from reaction with aggregates	Further evaluation is required to determine if a plant-specific aging management program is needed to manage cracking and expansion due to reaction with aggregate of concrete in Inaccessible Areas. A plant-specific aging management program is not required if (1) as described in NUREG-1557, investigations, tests, and petrographic examinations of aggregates performed in accordance with ASTM C295 and other ASTM reactivity tests, as required, can demonstrate that those aggregates do not adversely react within concrete, or (2) For potentially reactive aggregates, aggregate concrete reaction is not significant if it is demonstrated that the in-place concrete can perform its intended function.	Yes, if concrete is not constructed as stated	BWR/PWR

2174	TP-204	New Record	III.A7.TP-204	All Groups except Group 6:Concrete (inaccessible areas): all	Concrete	Any environment	Cracking #*#due to expansion from reaction with aggregates	Further evaluation is required to determine if a plant-specific aging management program is needed to manage cracking and expansion due to reaction with aggregate of concrete in Inaccessible Areas. A plant-specific aging management program is not required if (1) as described in NUREG-1557, investigations, tests, and petrographic examinations of aggregates performed in accordance with ASTM C295 and other ASTM reactivity tests, as required, can demonstrate that those aggregates do not adversely react within concrete, or (2) For potentially reactive aggregates, aggregate concrete reaction is not significant if it is demonstrated that the in-place concrete can perform its intended function.	Yes, if concrete is not constructed as stated	BWR/PWR

2173	TP-204	New Record	III.A5.TP-204	All Groups except Group 6:Concrete (inaccessible areas): all	Concrete	Any environment	Cracking #*#due to expansion from reaction with aggregates	Further evaluation is required to determine if a plant-specific aging management program is needed to manage cracking and expansion due to reaction with aggregate of concrete in Inaccessible Areas. A plant-specific aging management program is not required if (1) as described in NUREG-1557, investigations, tests, and petrographic examinations of aggregates performed in accordance with ASTM C295 and other ASTM reactivity tests, as required, can demonstrate that those aggregates do not adversely react within concrete, or (2) For potentially reactive aggregates, aggregate concrete reaction is not significant if it is demonstrated that the in-place concrete can perform its intended function.	Yes, if concrete is not constructed as stated	BWR/PWR

2172	TP-204	New Record	III.A4.TP-204	All Groups except Group 6:Concrete (inaccessible areas): all	Concrete	Any environment	Cracking #*#due to expansion from reaction with aggregates	Further evaluation is required to determine if a plant-specific aging management program is needed to manage cracking and expansion due to reaction with aggregate of concrete in Inaccessible Areas. A plant-specific aging management program is not required if (1) as described in NUREG-1557, investigations, tests, and petrographic examinations of aggregates performed in accordance with ASTM C295 and other ASTM reactivity tests, as required, can demonstrate that those aggregates do not adversely react within concrete, or (2) For potentially reactive aggregates, aggregate concrete reaction is not significant if it is demonstrated that the in-place concrete can perform its intended function.	Yes, if concrete is not constructed as stated	BWR/PWR
2210	TP-248	New Record	III.A4.TP-248	Structural bolting	Steel	Air – indoor, uncontrolled	Loss of material #*#due to general, pitting and crevice corrosion	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
2188	TP-223	New Record	III.A6.TP-223	Group 6: Wooden Piles; sheeting	Wood	Air – outdoor or Water – flowing or standing or Ground water/soil	Loss of material; change in material properties #*#due to weathering, chemical degradation, and insect infestation repeated wetting and drying, fungal decay	Chapter XI.S7, “Regulatory Guide 1.127, Inspection of Water-Control Structures Associated with Nuclear Power Plants” or the FERC / US Army Corp of Engineers dam inspections and maintenance programs.	No	BWR/PWR

2184	TP-219	New Record	III.A3.TP-219	Steel components: piles	Steel	Ground water/soil	Loss of material #*#due to corrosion	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
2183	TP-212	New Record	III.A9.TP-212	Groups 1-3, 5, 7-9 - concrete (inaccessible areas): below-grade exterior; foundation	Concrete	Ground water/soil	Cracking; loss of bond; and loss of material (spalling, scaling) #*#due to corrosion of embedded steel	Chapter XI.S6, "Structures Monitoring"	No	BWR
2182	TP-212	New Record	III.A8.TP-212	Groups 1-3, 5, 7-9 - concrete (inaccessible areas): below-grade exterior; foundation	Concrete	Ground water/soil	Cracking; loss of bond; and loss of material (spalling, scaling) #*#due to corrosion of embedded steel	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
2181	TP-212	New Record	III.A7.TP-212	Groups 1-3, 5, 7-9 - concrete (inaccessible areas): below-grade exterior; foundation	Concrete	Ground water/soil	Cracking; loss of bond; and loss of material (spalling, scaling) #*#due to corrosion of embedded steel	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
2180	TP-212	New Record	III.A5.TP-212	Groups 1-3, 5, 7-9 - concrete (inaccessible areas): below-grade exterior; foundation	Concrete	Ground water/soil	Cracking; loss of bond; and loss of material (spalling, scaling) #*#due to corrosion of embedded steel	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
2179	TP-212	New Record	III.A3.TP-212	Groups 1-3, 5, 7-9 - concrete (inaccessible areas): below-grade exterior; foundation	Concrete	Ground water/soil	Cracking; loss of bond; and loss of material (spalling, scaling) #*#due to corrosion of embedded steel	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
2204	TP-235	New Record	III.B1.1.TP-235	Structural bolting	Steel; galvanized steel	Air – outdoor	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.S3, “ASME Section XI, Subsection IWF”	No	BWR/PWR

2187	TP-222	New Record	III.A6.TP-222	Structural bolting	Steel	Any environment	Loss of preload #*#due to self-loosening	Chapter XI.S7, “Regulatory Guide 1.127, Inspection of Water-Control Structures Associated with Nuclear Power Plants” or the FERC / US Army Corp of Engineers dam inspections and maintenance programs.	No	BWR/PWR
2169	TP-204	New Record	III.A1.TP-204	All Groups except Group 6:Concrete (inaccessible areas): all	Concrete	Any environment	Cracking #*#due to expansion from reaction with aggregates	Further evaluation is required to determine if a plant-specific aging management program is needed to manage cracking and expansion due to reaction with aggregate of concrete in Inaccessible Areas. A plant-specific aging management program is not required if (1) as described in NUREG-1557, investigations, tests, and petrographic examinations of aggregates performed in accordance with ASTM C295 and other ASTM reactivity tests, as required, can demonstrate that those aggregates do not adversely react within concrete, or (2) For potentially reactive aggregates, aggregate concrete reaction is not significant if it is demonstrated that the in-place concrete can perform its intended function.	Yes, if concrete is not constructed as stated	BWR/PWR
2195	TP-226	New Record	III.B1.1.TP-226	Structural Bolting	Steel	Air – indoor, uncontrolled	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.S3, “ASME Section XI, Subsection IWF”	No	BWR/PWR
2196	TP-226	New Record	III.B1.2.TP-226	Structural Bolting	Steel	Air – indoor, uncontrolled	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.S3, “ASME Section XI, Subsection IWF”	No	BWR/PWR

2197	TP-226	New Record	III.B1.3.TP-226	Structural bolting	Steel	Air – indoor, uncontrolled	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.S3, “ASME Section XI, Subsection IWF”	No	BWR/PWR
2198	TP-229	New Record	III.B1.1.TP-229	Structural bolting	Any	Any environment	Loss of preload #*#due to self-loosening	Chapter XI.S3, “ASME Section XI, Subsection IWF”	No	BWR/PWR
2199	TP-229	New Record	III.B1.2.TP-229	Structural bolting	Any	Any environment	Loss of preload #*#due to self-loosening	Chapter XI.S3, “ASME Section XI, Subsection IWF”	No	BWR/PWR
2200	TP-229	New Record	III.B1.3.TP-229	Structural bolting	Any	Any environment	Loss of preload #*#due to self-loosening	Chapter XI.S3, “ASME Section XI, Subsection IWF”	No	BWR/PWR
2201	TP-232	New Record	III.B1.1.TP-232	Structural bolting	Stainless steel	Treated water	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M2, “Water Chemistry,” for BWR water, and #*#Chapter XI.S3, “ASME Section XI, Subsection IWF”	No	BWR/PWR
2186	TP-221	New Record	III.A6.TP-221	Structural bolting	Steel	Air – indoor, uncontrolled or Air – outdoor or Water – flowing or standing	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.S7, “Regulatory Guide 1.127, Inspection of Water-Control Structures Associated with Nuclear Power Plants” or the FERC / US Army Corp of Engineers dam inspections and maintenance programs.	No	BWR/PWR

2185	TP-220	New Record	III.A6.TP-220	Groups 6 - concrete (inaccessible areas): all	Concrete	Any environment	Cracking #*#due to expansion from reaction with aggregates	Further evaluation is required to determine if a plant-specific aging management program is needed to manage cracking and expansion due to reaction with aggregate of concrete in Inaccessible Areas. A plant-specific aging management program is not required if (1) as described in NUREG-1557, investigations, tests, and petrographic examinations of aggregates performed in accordance with ASTM C295 and other ASTM reactivity tests, as required, can demonstrate that those aggregates do not adversely react within concrete, or (2) For potentially reactive aggregates, aggregate concrete reaction is not significant if it is demonstrated that the in-place concrete can perform its intended function.	Yes, if concrete is not constructed as stated	BWR/PWR
2144	TP-67	New Record	III.A1.TP-67	Groups 1-3, 5, 7-9 - concrete (inaccessible areas): exterior above- and below-grade; foundation	Concrete	Water – flowing	Increase in porosity and permeability; loss of strength #*#due to leaching of calcium hydroxide and carbonation	Further evaluation is required to determine if a plant-specific aging management program is needed to manage increase in porosity, and permeability due to leaching of calcium hydroxide and carbonation of concrete in Inaccessible Areas. A plant-specific aging management program is not required if (1) There is evidence in the accessible areas that the flowing water has not caused leaching and carbonation, or (2) Evaluation determined that the observed leaching of calcium hydroxide and carbonation in accessible areas has no impact on the intended function of the concrete structure.	Yes, if leaching is observed in accessible areas that impact intended function	BWR/PWR

2143	TP-108	New Record	III.A9.TP-108	Groups 1-3, 5, 7-9:Concrete (inaccessible areas): foundation	Concrete	Air – outdoor	Loss of material (spalling, scaling) and cracking #*#due to freeze-thaw	Further evaluation is required for plants that are located in moderate to severe weathering conditions (weathering index >100 day-inch/yr) (NUREG-1557) to determine if a plant-specific aging management program is needed. A plant-specific aging management program is not required if documented evidence confirms that the existing concrete had air entrainment content (as per Table CC-2231-2 of the ASME Section III Division 2), and subsequent inspections of accessible areas did not exhibit degradation related to freeze-thaw. Such inspections should be considered a part of the evaluation. If this condition is not satisfied, then a plant-specific aging management program is required to manage loss of material (spalling, scaling) and cracking due to freeze-thaw of concrete in inaccessible areas. #*#The weathering index for the continental US is shown in ASTM C33-90, Fig. 1.	Yes, for plants located in moderate to severe weathering conditions	BWR

2142	TP-108	New Record	III.A8.TP-108	Groups 1-3, 5, 7-9:Concrete (inaccessible areas): foundation	Concrete	Air – outdoor	Loss of material (spalling, scaling) and cracking #*#due to freeze-thaw	Further evaluation is required for plants that are located in moderate to severe weathering conditions (weathering index >100 day-inch/yr) (NUREG-1557) to determine if a plant-specific aging management program is needed. A plant-specific aging management program is not required if documented evidence confirms that the existing concrete had air entrainment content (as per Table CC-2231-2 of the ASME Section III Division 2), and subsequent inspections of accessible areas did not exhibit degradation related to freeze-thaw. Such inspections should be considered a part of the evaluation. If this condition is not satisfied, then a plant-specific aging management program is required to manage loss of material (spalling, scaling) and cracking due to freeze-thaw of concrete in inaccessible areas. #*#The weathering index for the continental US is shown in ASTM C33-90, Fig. 1.	Yes, for plants located in moderate to severe weathering conditions	BWR

2141	TP-108	New Record	III.A5.TP-108	Groups 1-3, 5, 7-9:Concrete (inaccessible areas): foundation	Concrete	Air – outdoor	Loss of material (spalling, scaling) and cracking #*#due to freeze-thaw	Further evaluation is required for plants that are located in moderate to severe weathering conditions (weathering index >100 day-inch/yr) (NUREG-1557) to determine if a plant-specific aging management program is needed. A plant-specific aging management program is not required if documented evidence confirms that the existing concrete had air entrainment content (as per Table CC-2231-2 of the ASME Section III Division 2), and subsequent inspections of accessible areas did not exhibit degradation related to freeze-thaw. Such inspections should be considered a part of the evaluation. If this condition is not satisfied, then a plant-specific aging management program is required to manage loss of material (spalling, scaling) and cracking due to freeze-thaw of concrete in inaccessible areas. #*#The weathering index for the continental US is shown in ASTM C33-90, Fig. 1.	Yes, for plants located in moderate to severe weathering conditions	BWR

2138	TP-108	New Record	III.A7.TP-108	Groups 1-3, 5, 7-9:Concrete (inaccessible areas): foundation	Concrete	Air – outdoor	Loss of material (spalling, scaling) and cracking #*#due to freeze-thaw	Further evaluation is required for plants that are located in moderate to severe weathering conditions (weathering index >100 day-inch/yr) (NUREG-1557) to determine if a plant-specific aging management program is needed. A plant-specific aging management program is not required if documented evidence confirms that the existing concrete had air entrainment content (as per Table CC-2231-2 of the ASME Section III Division 2), and subsequent inspections of accessible areas did not exhibit degradation related to freeze-thaw. Such inspections should be considered a part of the evaluation. If this condition is not satisfied, then a plant-specific aging management program is required to manage loss of material (spalling, scaling) and cracking due to freeze-thaw of concrete in inaccessible areas. #*#The weathering index for the continental US is shown in ASTM C33-90, Fig. 1.	Yes, for plants located in moderate to severe weathering conditions	BWR

2137	TP-108	New Record	III.A3.TP-108	Groups 1-3, 5, 7-9:Concrete (inaccessible areas): foundation	Concrete	Air – outdoor	Loss of material (spalling, scaling) and cracking #*#due to freeze-thaw	Further evaluation is required for plants that are located in moderate to severe weathering conditions (weathering index >100 day-inch/yr) (NUREG-1557) to determine if a plant-specific aging management program is needed. A plant-specific aging management program is not required if documented evidence confirms that the existing concrete had air entrainment content (as per Table CC-2231-2 of the ASME Section III Division 2), and subsequent inspections of accessible areas did not exhibit degradation related to freeze-thaw. Such inspections should be considered a part of the evaluation. If this condition is not satisfied, then a plant-specific aging management program is required to manage loss of material (spalling, scaling) and cracking due to freeze-thaw of concrete in inaccessible areas. #*#The weathering index for the continental US is shown in ASTM C33-90, Fig. 1.	Yes, for plants located in moderate to severe weathering conditions	BWR

2171	TP-204	New Record	III.A3.TP-204	All Groups except Group 6:Concrete (inaccessible areas): all	Concrete	Any environment	Cracking #*#due to expansion from reaction with aggregates	Further evaluation is required to determine if a plant-specific aging management program is needed to manage cracking and expansion due to reaction with aggregate of concrete in Inaccessible Areas. A plant-specific aging management program is not required if (1) as described in NUREG-1557, investigations, tests, and petrographic examinations of aggregates performed in accordance with ASTM C295 and other ASTM reactivity tests, as required, can demonstrate that those aggregates do not adversely react within concrete, or (2) For potentially reactive aggregates, aggregate concrete reaction is not significant if it is demonstrated that the in-place concrete can perform its intended function.	Yes, if concrete is not constructed as stated	BWR/PWR
2224	TP-261	New Record	III.A5.TP-261	Structural bolting	Any	Any environment	Loss of preload #*#due to self-loosening	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
2221	TP-261	New Record	III.A2.TP-261	Structural bolting	Any	Any environment	Loss of preload #*#due to self-loosening	Chapter XI.S6, "Structures Monitoring"	No	BWR
2226	TP-261	New Record	III.A7.TP-261	Structural bolting	Any	Any environment	Loss of preload #*#due to self-loosening	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
2228	TP-261	New Record	III.A9.TP-261	Structural bolting	Any	Any environment	Loss of preload #*#due to self-loosening	Chapter XI.S6, "Structures Monitoring"	No	BWR
2229	TP-261	New Record	III.B2.TP-261	Structural bolting	Any	Any environment	Loss of preload #*#due to self-loosening	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
2230	TP-261	New Record	III.B3.TP-261	Structural bolting	Any	Any environment	Loss of preload #*#due to self-loosening	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR

2231	TP-261	New Record	III.B4.TP-261	Structural bolting	Any	Any environment	Loss of preload #*#due to self-loosening	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
2232	TP-261	New Record	III.B5.TP-261	Structural bolting	Any	Any environment	Loss of preload #*#due to self-loosening	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
2233	TP-274	New Record	III.A1.TP-274	Structural bolting	Steel; galvanized steel	Air – outdoor	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
2223	TP-261	New Record	III.A4.TP-261	Structural bolting	Any	Any environment	Loss of preload #*#due to self-loosening	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
2214	TP-248	New Record	III.A8.TP-248	Structural bolting	Steel	Air – indoor, uncontrolled	Loss of material #*#due to general, pitting and crevice corrosion	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
2234	TP-274	New Record	III.A2.TP-274	Structural bolting	Steel; galvanized steel	Air – outdoor	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.S6, "Structures Monitoring"	No	BWR
2168	RP-201	New Record	IV.A1.RP-201	Top head enclosure: closure studs and nuts	High-strength, low-alloy steel	Air with reactor coolant leakage	Cumulative fatigue damage #*#due to fatigue	Fatigue is a time-limited aging analysis (TLAA) to be evaluated for the period of extended operation. See the SRP, Section 4.3 “Metal Fatigue,” for acceptable methods for meeting the requirements of 10 CFR 54.21(c)(1).	Yes, TLAA	BWR
2167	RP-200	New Record	IV.B1.RP-200	Reactor vessel internals components	X-750 alloy	Reactor coolant >250°C (>482°F) and neutron flux	Loss of fracture toughness #*#due to thermal aging, neutron irradiation embrittlement	Chapter XI.M9, "BWR Vessel Internals"	No	BWR

2149	TP-67	New Record	III.A9.TP-67	Groups 1-3, 5, 7-9 - concrete (inaccessible areas): exterior above- and below-grade; foundation	Concrete	Water – flowing	Increase in porosity and permeability; loss of strength #*#due to leaching of calcium hydroxide and carbonation	Further evaluation is required to determine if a plant-specific aging management program is needed to manage increase in porosity, and permeability due to leaching of calcium hydroxide and carbonation of concrete in Inaccessible Areas. A plant-specific aging management program is not required if (1) There is evidence in the accessible areas that the flowing water has not caused leaching and carbonation, or (2) Evaluation determined that the observed leaching of calcium hydroxide and carbonation in accessible areas has no impact on the intended function of the concrete structure.	Yes, if leaching is observed in accessible areas that impact intended function	BWR
2148	TP-67	New Record	III.A8.TP-67	Groups 1-3, 5, 7-9 - concrete (inaccessible areas): exterior above- and below-grade; foundation	Concrete	Water – flowing	Increase in porosity and permeability; loss of strength #*#due to leaching of calcium hydroxide and carbonation	Further evaluation is required to determine if a plant-specific aging management program is needed to manage increase in porosity, and permeability due to leaching of calcium hydroxide and carbonation of concrete in Inaccessible Areas. A plant-specific aging management program is not required if (1) There is evidence in the accessible areas that the flowing water has not caused leaching and carbonation, or (2) Evaluation determined that the observed leaching of calcium hydroxide and carbonation in accessible areas has no impact on the intended function of the concrete structure.	Yes, if leaching is observed in accessible areas that impact intended function	BWR/PWR

2147	TP-67	New Record	III.A7.TP-67	Groups 1-3, 5, 7-9 - concrete (inaccessible areas): exterior above- and below-grade; foundation	Concrete	Water – flowing	Increase in porosity and permeability; loss of strength #*#due to leaching of calcium hydroxide and carbonation	Further evaluation is required to determine if a plant-specific aging management program is needed to manage increase in porosity, and permeability due to leaching of calcium hydroxide and carbonation of concrete in Inaccessible Areas. A plant-specific aging management program is not required if (1) There is evidence in the accessible areas that the flowing water has not caused leaching and carbonation, or (2) Evaluation determined that the observed leaching of calcium hydroxide and carbonation in accessible areas has no impact on the intended function of the concrete structure.	Yes, if leaching is observed in accessible areas that impact intended function	BWR/PWR
2146	TP-67	New Record	III.A5.TP-67	Groups 1-3, 5, 7-9 - concrete (inaccessible areas): exterior above- and below-grade; foundation	Concrete	Water – flowing	Increase in porosity and permeability; loss of strength #*#due to leaching of calcium hydroxide and carbonation	Further evaluation is required to determine if a plant-specific aging management program is needed to manage increase in porosity, and permeability due to leaching of calcium hydroxide and carbonation of concrete in Inaccessible Areas. A plant-specific aging management program is not required if (1) There is evidence in the accessible areas that the flowing water has not caused leaching and carbonation, or (2) Evaluation determined that the observed leaching of calcium hydroxide and carbonation in accessible areas has no impact on the intended function of the concrete structure.	Yes, if leaching is observed in accessible areas that impact intended function	BWR/PWR

2145	TP-67	New Record	III.A3.TP-67	Groups 1-3, 5, 7-9 - concrete (inaccessible areas): exterior above- and below-grade; foundation	Concrete	Water – flowing	Increase in porosity and permeability; loss of strength #*#due to leaching of calcium hydroxide and carbonation	Further evaluation is required to determine if a plant-specific aging management program is needed to manage increase in porosity, and permeability due to leaching of calcium hydroxide and carbonation of concrete in Inaccessible Areas. A plant-specific aging management program is not required if (1) There is evidence in the accessible areas that the flowing water has not caused leaching and carbonation, or (2) Evaluation determined that the observed leaching of calcium hydroxide and carbonation in accessible areas has no impact on the intended function of the concrete structure.	Yes, if leaching is observed in accessible areas that impact intended function	BWR/PWR
2213	TP-248	New Record	III.A7.TP-248	Structural bolting	Steel	Air – indoor, uncontrolled	Loss of material #*#due to general, pitting and crevice corrosion	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
2222	TP-261	New Record	III.A3.TP-261	Structural bolting	Any	Any environment	Loss of preload #*#due to self-loosening	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
2215	TP-248	New Record	III.A9.TP-248	Structural bolting	Steel	Air – indoor, uncontrolled	Loss of material #*#due to general, pitting and crevice corrosion	Chapter XI.S6, "Structures Monitoring"	No	BWR
2216	TP-248	New Record	III.B2.TP-248	Structural bolting	Steel	Air – indoor, uncontrolled	Loss of material #*#due to general, pitting and crevice corrosion	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR

2217	TP-248	New Record	III.B3.TP-248	Structural bolting	Steel	Air – indoor, uncontrolled	Loss of material #*#due to general, pitting and crevice corrosion	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
2218	TP-248	New Record	III.B4.TP-248	Structural bolting	Steel	Air – indoor, uncontrolled	Loss of material #*#due to general, pitting and crevice corrosion	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
2219	TP-248	New Record	III.B5.TP-248	Structural bolting	Steel	Air – indoor, uncontrolled	Loss of material #*#due to general, pitting and crevice corrosion	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
2220	TP-261	New Record	III.A1.TP-261	Structural bolting	Any	Any environment	Loss of preload #*#due to self-loosening	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
2170	TP-204	New Record	III.A2.TP-204	All Groups except Group 6:Concrete (inaccessible areas): all	Concrete	Any environment	Cracking #*#due to expansion from reaction with aggregates	Further evaluation is required to determine if a plant-specific aging management program is needed to manage cracking and expansion due to reaction with aggregate of concrete in Inaccessible Areas. A plant-specific aging management program is not required if (1) as described in NUREG-1557, investigations, tests, and petrographic examinations of aggregates performed in accordance with ASTM C295 and other ASTM reactivity tests, as required, can demonstrate that those aggregates do not adversely react within concrete, or (2) For potentially reactive aggregates, aggregate concrete reaction is not significant if it is demonstrated that the in-place concrete can perform its intended function.	Yes, if concrete is not constructed as stated	BWR

2212	TP-248	New Record	III.A6.TP-248	Structural bolting	Steel	Air – indoor, uncontrolled	Loss of material #*#due to general, pitting and crevice corrosion	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
2545	AP-209	New Record	VII.F4.AP-209	Piping, piping components, and piping elements; tanks	Stainless steel	Air – outdoor	Cracking #*#due to stress corrosion cracking	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for ASME Code components or #*#Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components" for non-ASME Code components	Yes, environmental conditions need to be evaluated	BWR/PWR
2554	SP-118	New Record	VIII.D2.SP-118	Piping, piping components, and piping elements; tanks	Stainless steel	Air – outdoor	Cracking #*#due to stress corrosion cracking	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for ASME Code components or #*#Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components" for non-ASME Code components	Yes, environmental conditions need to be evaluated	BWR/PWR
2537	AP-209	New Record	VII.C1.AP-209	Piping, piping components, and piping elements; tanks	Stainless steel	Air – outdoor	Cracking #*#due to stress corrosion cracking	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for ASME Code components or #*#Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components" for non-ASME Code components	Yes, environmental conditions need to be evaluated	BWR/PWR
2538	AP-209	New Record	VII.C2.AP-209	Piping, piping components, and piping elements; tanks	Stainless steel	Air – outdoor	Cracking #*#due to stress corrosion cracking	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for ASME Code components or #*#Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components" for non-ASME Code components	Yes, environmental conditions need to be evaluated	BWR/PWR
2539	AP-209	New Record	VII.C3.AP-209	Piping, piping components, and piping elements; tanks	Stainless steel	Air – outdoor	Cracking #*#due to stress corrosion cracking	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for ASME Code components or #*#Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components" for non-ASME Code components	Yes, environmental conditions need to be evaluated	BWR/PWR

2540	AP-209	New Record	VII.D.AP-209	Piping, piping components, and piping elements; tanks	Stainless steel	Air – outdoor	Cracking #*#due to stress corrosion cracking	Chapter XI.M1, "ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD" for ASME Code components or #*#Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components" for non-ASME Code components	Yes, environmental conditions need to be evaluated	BWR/PWR
2541	AP-209	New Record	VII.E1.AP-209	Piping, piping components, and piping elements; tanks	Stainless steel	Air – outdoor	Cracking #*#due to stress corrosion cracking	Chapter XI.M1, "ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD" for ASME Code components or #*#Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components" for non-ASME Code components	Yes, environmental conditions need to be evaluated	BWR/PWR
2542	AP-209	New Record	VII.E4.AP-209	Piping, piping components, and piping elements; tanks	Stainless steel	Air – outdoor	Cracking #*#due to stress corrosion cracking	Chapter XI.M1, "ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD" for ASME Code components or #*#Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components" for non-ASME Code components	Yes, environmental conditions need to be evaluated	BWR/PWR
2535	EP-103	New Record	V.D1.EP-103	Piping, piping components, and piping elements; tanks	Stainless steel	Air – outdoor	Cracking #*#due to stress corrosion cracking	Chapter XI.M1, "ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD" for ASME Code components or #*#Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components" for non-ASME Code components	Yes, environmental conditions need to be evaluated	BWR/PWR
2544	AP-209	New Record	VII.F2.AP-209	Piping, piping components, and piping elements; tanks	Stainless steel	Air – outdoor	Cracking #*#due to stress corrosion cracking	Chapter XI.M1, "ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD" for ASME Code components or #*#Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components" for non-ASME Code components	Yes, environmental conditions need to be evaluated	BWR/PWR
2534	EP-103	New Record	V.C.EP-103	Piping, piping components, and piping elements; tanks	Stainless steel	Air – outdoor	Cracking #*#due to stress corrosion cracking	Chapter XI.M1, "ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD" for ASME Code components or #*#Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components" for non-ASME Code components	Yes, environmental conditions need to be evaluated	BWR/PWR

2546	AP-209	New Record	VII.G.AP-209	Piping, piping components, and piping elements; tanks	Stainless steel	Air – outdoor	Cracking #*#due to stress corrosion cracking	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for ASME Code components or #*#Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components" for non-ASME Code components	Yes, environmental conditions need to be evaluated	BWR/PWR
2547	AP-209	New Record	VII.H1.AP-209	Piping, piping components, and piping elements; tanks	Stainless steel	Air – outdoor	Cracking #*#due to stress corrosion cracking	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for ASME Code components or #*#Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components" for non-ASME Code components	Yes, environmental conditions need to be evaluated	BWR/PWR
2548	AP-209	New Record	VII.H2.AP-209	Piping, piping components, and piping elements; tanks	Stainless steel	Air – outdoor	Cracking #*#due to stress corrosion cracking	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for ASME Code components or #*#Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components" for non-ASME Code components	Yes, environmental conditions need to be evaluated	BWR/PWR
2549	SP-118	New Record	VIII.A.SP-118	Piping, piping components, and piping elements; tanks	Stainless steel	Air – outdoor	Cracking #*#due to stress corrosion cracking	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for ASME Code components or #*#Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components" for non-ASME Code components	Yes, environmental conditions need to be evaluated	BWR/PWR
2550	SP-118	New Record	VIII.B1.SP-118	Piping, piping components, and piping elements; tanks	Stainless steel	Air – outdoor	Cracking #*#due to stress corrosion cracking	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for ASME Code components or #*#Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components" for non-ASME Code components	Yes, environmental conditions need to be evaluated	BWR/PWR
2551	SP-118	New Record	VIII.B2.SP-118	Piping, piping components, and piping elements; tanks	Stainless steel	Air – outdoor	Cracking #*#due to stress corrosion cracking	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for ASME Code components or #*#Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components" for non-ASME Code components	Yes, environmental conditions need to be evaluated	BWR/PWR

2552	SP-118	New Record	VIII.C. SP-118		Piping, piping components, and piping elements; tanks	Stainless steel	Air – outdoor	Cracking #*#due to stress corrosion cracking	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for ASME Code components or #*#Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components" for non-ASME Code components	Yes, environmental conditions need to be evaluated	BWR/PWR
2362	RP-247	New Record	IV.B4. RP-247	IV.B4-13(R-194)	Core barrel assembly: accessible lower core barrel (LCB) bolts and locking devices	Stainless steel; nickel alloy	Reactor coolant and neutron flux	Cracking #*#due to stress corrosion cracking	Chapter XI.M2, “Water Chemistry,” for PWR primary water, and Chapter XI.M16A, “PWR Vessel Internals” #*#Primary components (identified in the "Structure and Components" column) #*#(for Expansion components see AMR Line Items IV.B4.RP-245, IV.B4.RP-246, IV.B4.RP-254, and IV.B4.RP-256)	No	PWR
2543	AP-209	New Record	VII.F1. AP-209		Piping, piping components, and piping elements; tanks	Stainless steel	Air – outdoor	Cracking #*#due to stress corrosion cracking	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for ASME Code components or #*#Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components" for non-ASME Code components	Yes, environmental conditions need to be evaluated	BWR/PWR
2522	RP-336	New Record	IV.B3. RP-336	IV.B3-22(R-170)	Lower support structure: A286 fuel alignment pins (all plants with core shroud assembled in two vertical sections)	Stainless steel	Reactor coolant and neutron flux	Loss of material #*#due to wear; #*#loss of fracture toughness #*#due to neutron irradiation embrittlement; change in dimension #*#due to void swelling	Chapter XI.M16A, “PWR Vessel Internals” #*#Existing Program components (identified in the "Structure and Components" column) #*#no Expansion components	No	PWR

2513	RP-327	New Record	IV.B3.RP-327	IV.B3-15(R-155)	Core support barrel assembly: upper core support barrel flange weld (accessible surfaces)	Stainless steel	Reactor coolant and neutron flux	Cracking #*#due to stress corrosion cracking	Chapter XI.M2, “Water Chemistry,” for PWR primary water, and #*#Chapter XI.M16A, “PWR Vessel Internals” #*#Primary components (identified in the "Structure and Components" column) #*#(for Expansion components see AMR Line Items IV.B3.RP-328, IV.B3.RP-329, IV.B3.RP-335, IV.B3.RP-362, IV.B3.RP-363, IV.B3.RP-364)	No	PWR
2514	RP-328	New Record	IV.B3.RP-328	IV.B3-15	Core support barrel assembly: surfaces of the lower core barrel flange weld (accessible surfaces)	Stainless steel	Reactor coolant and neutron flux	Cracking #*#due to stress corrosion cracking and fatigue	Chapter XI.M2, “Water Chemistry,” for PWR primary water, and #*#Chapter XI.M16A, “PWR Vessel Internals” #*#Expansion components (identified in the "Structure and Components" column) #*#(for Primary components see AMR Line Item IV.B3.RP-327)	No	PWR
2515	RP-329	New Record	IV.B3.RP-329	IV.B3-15(R-155)	Core support barrel assembly: remaining core barrel assembly welds	Stainless steel	Reactor coolant and neutron flux	Cracking #*#due to stress corrosion cracking	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M16A, “PWR Vessel Internals” #*#Expansion components (identified in the "Structure and Components" column) #*#(for Primary components see AMR Line Item IV.B3.RP-327)	No	PWR
2516	RP-330	New Record	IV.B3.RP-330	IV.B3-23(R-167)	Lower support structure: core support column bolts	Stainless steel	Reactor coolant and neutron flux	Cracking #*#due to irradiation-assisted stress corrosion cracking and fatigue	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M16A, “PWR Vessel Internals” #*#Expansion components (identified in the "Structure and Components" column) #*#(for Primary components see AMR Line Item 'IV.B3.RP-314)	No	PWR
2517	RP-331	New Record	IV.B3.RP-331		Lower support structure: core support column bolts	Stainless steel	Reactor coolant and neutron flux	Loss of fracture toughness #*#due to neutron irradiation embrittlement	Chapter XI.M16A, “PWR Vessel Internals” #*#Expansion components (identified in the "Structure and Components" column) #*#(for Primary components see AMR Line Item 'IV.B3.RP-315)	No	PWR

2518	RP-332	New Record	IV.B3.RP-332	IV.B3-17(R-156)	Core support barrel assembly: upper core barrel flange	Stainless steel	Reactor coolant and neutron flux	Loss of material #*#due to wear	Chapter XI.M16A, “PWR Vessel Internals” #*#Existing Program components (identified in the "Structure and Components" column) #*#no Expansion components	No	PWR
2519	RP-333	New Record	IV.B3.RP-333		Core support barrel assembly: lower flange weld, if fatigue life cannot be demonstrated by TLAA	Stainless steel	Reactor coolant and neutron flux	Cracking #*#due to fatigue	'Chapter XI.M2, “Water Chemistry,” for PWR primary water, and #*#Chapter XI.M16A, “PWR Vessel Internals” #*#Primary components (identified in the "Structure and Components" column) #*#no Expansion components	Yes, TLAA	PWR
2536	EP-103	New Record	V.D2.EP-103		Piping, piping components, and piping elements; tanks	Stainless steel	Air – outdoor	Cracking #*#due to stress corrosion cracking	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for ASME Code components or #*#Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components" for non-ASME Code components	Yes, environmental conditions need to be evaluated	BWR/PWR
2521	RP-335	New Record	IV.B3.RP-335	IV.B3-23(R-167)	Lower support structure: core support column welds	Stainless steel	Reactor coolant and neutron flux	Cracking #*#due to stress corrosion cracking, irradiation-assisted stress corrosion cracking, and fatigue	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M16A, “PWR Vessel Internals” #*#Expansion components (identified in the "Structure and Components" column) #*#(for Primary components see AMR Line Item IV.B3.RP-327)	No	PWR
2555	SP-118	New Record	VIII.E.SP-118		Piping, piping components, and piping elements; tanks	Stainless steel	Air – outdoor	Cracking #*#due to stress corrosion cracking	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for ASME Code components or #*#Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components" for non-ASME Code components	Yes, environmental conditions need to be evaluated	BWR/PWR

2523	RP-337	New Record	IV.B3.RP-337		Lower support structure: beam-to-beam lower support structure (applicable to plants with core shrouds assembled with full height shroud plates), if fatigue life cannot be demonstrated by TLAA	Stainless steel	Reactor coolant and neutron flux	Cracking #*#due to fatigue	'Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M16A, “PWR Vessel Internals” #*#Primary components (identified in the "Structure and Components" column) #*#no Expansion components	No	PWR
2524	RP-338	New Record	IV.B3.RP-338		Upper internals assembly: fuel alignment plate (applicable to plants with core shrouds assembled with full height shroud plates), if fatigue life cannot be demonstrated by TLAA	Stainless steel	Reactor coolant and neutron flux	Cracking #*#due to fatigue	'Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M16A, “PWR Vessel Internals” #*#Primary components (identified in the "Structure and Components" column) #*#no Expansion components	No	PWR
2525	RP-339	New Record	IV.B3.RP-339	IV.B3-24(R-53)	Reactor vessel internal components	Stainless steel; nickel alloy	Reactor coolant and neutron flux	Cumulative fatigue damage #*#due to fatigue	Fatigue is a time-limited aging analysis (TLAA) to be evaluated for the period of extended operation. See the SRP, Section 4.3 “Metal Fatigue,” for acceptable methods for meeting the requirements of 10 CFR 54.21(c)(1).	Yes, TLAA	PWR
2526	RP-340	New Record	IV.B3.RP-340	IV.B3-25(R-24)	Reactor vessel internal components	Stainless steel; nickel alloy	Reactor coolant and neutron flux	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M2, “Water Chemistry” for PWR primary water	No	PWR
2528	RP-342	New Record	IV.B3.RP-342		Core shroud assemblies: deep beams (applicable assemblies with full height shroud plates)	Stainless stee	Reactor coolant and neutron flux	Cracking #*#due to stress corrosion cracking, irradiation-assisted stress corrosion cracking, and fatigue	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M16A, “PWR Vessel Internals” #*#Primary components (identified in the "Structure and Components" column) #*#no Expansion components	No	PWR

2530	LP-44	New Record	VI.A.LP-44	VI.A-13(LP-06)	Metal enclosed bus: External surface of enclosure assemblies	Steel	Air – indoor, controlled	None	None	No	BWR/PWR
2531	RP-343	New Record	IV.B3.RP-343		Lower support structure: core support plate (applicable to plants with a core support plate), if fatigue life cannot be demonstrated by TLAA	Stainless steel	Reactor coolant and neutron flux	Cracking #*#due to fatigue	Chapter XI.M2, “Water Chemistry”, and #*#Chapter XI.M16A, “PWR Vessel Internals” #*#Primary components (identified in the "Structure and Components" column) #*#no Expansion components	No	PWR
2533	EP-103	New Record	V.B.EP-103		Piping, piping components, and piping elements; tanks	Stainless steel	Air – outdoor	Cracking #*#due to stress corrosion cracking	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for ASME Code components or #*#Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components" for non-ASME Code components	Yes, environmental conditions need to be evaluated	BWR/PWR
2520	RP-334	New Record	IV.B3.RP-334	IV.B3-23(R-167)	Lower support structure: A286 fuel alignment pins (all plants with core shroud assembled with full-height shroud plates)	Stainless steel	Reactor coolant and neutron flux	Cracking #*#due to irradiation-assisted stress corrosion cracking and fatigue	'Chapter XI.M2, “Water Chemistry,” for PWR primary water, and #*#Chapter XI.M16A, “PWR Vessel Internals” #*#Existing Program components (identified in the "Structure and Components" column) #*#no Expansion components	No	PWR
2606	RP-361	New Record	IV.B3.RP-361		Core shroud assembly (for welded core shrouds with full-height shroud plates): remaining axial welds, ribs, and rings	Stainless steel	Reactor coolant and neutron flux	Loss of fracture toughness #*#due to neutron irradiation embrittlement	Chapter XI.M16A, "PWR Vessel Internals" #*#Expansion components (identified in the "Structure and Components" column) #*#(for Primary components see AMR Line Items IV.B3.RP-360)	No	PWR
2553	SP-118	New Record	VIII.D1.SP-118		Piping, piping components, and piping elements; tanks	Stainless steel	Air – outdoor	Cracking #*#due to stress corrosion cracking	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for ASME Code components or #*#Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components" for non-ASME Code components	Yes, environmental conditions need to be evaluated	BWR/PWR

2592	RP-352	New Record	IV.B4.RP-352	Upper grid assembly: alloy X-750 dowel-to-upper fuel assembly support pad welds (all plants except Davis-Besse)	Nickel alloy	Reactor coolant and neurton flux	Cracking #*#due to stress corrosion cracking	Chapter XI.M2, “Water Chemistry,” for PWR primary water, and #*#Chapter XI.M16A, “PWR Vessel Internals” #*#Expansion components (identified in the "Structure and Components" column) #*#(for Primary components see AMR Line Item IV.B4.RP-261)	No	PWR
2599	RP-354	New Record	IV.B2.RP-354	Baffle-to-former assembly: barrel-edge bolts (all plants with baffle-edge bolts)	Stainless steel	Reactor coolant and neutron flux	Loss of fracture toughness; #*#due to neutron irradiation embrittlement; #*#change in dimension #*#due to void swelling; #*#loss of preload #*#due to stress relaxation	Chapter XI.M16A, “PWR Vessel Internals” #*#Primary components (identified in the "Structure and Components" column) #*#no Expansion components	No	PWR
2600	RP-355	New Record	IV.B2.RP-355	Control rod guide tube assemblies: guide tube support pins	Nickel alloy	Reactor coolant and neutron flux	Cracking #*#due to stress corrosion cracking and fatigue	Chapter XI.M2, "Water Chemistry," and #*#Chapter XI.M16A, “PWR Vessel Internals” #*# Existngn Program components (identified in the "Structure and Components" column)#*#no Expansion components	No	PWR
2601	RP-356	New Record	IV.B2.RP-356	Control rod guide tube assemblies: guide tube support pins	Nickel alloy	Reactor coolant and neutron flux	Loss of material #*#due to wear	Chapter XI.M16A, “PWR Vessel Internals” #*# Existing Program components (identified in the "Structure and Components" column)#*#no Expansion components	No	PWR
2602	RP-357	New Record	IV.B3.RP-357	Incore instrumentation (ICI): ICI thimble tubes - lower	Zircaloy-4	Reactor coolant and neutron flux	Loss of material #*#due to wear	Chapter XI.M16A, “PWR Vessel Internals” #*#Existing Progrm components (identified in the "Structure and Components" column) #*#no Expansion components	No	PWR

2603	RP-358	New Record	IV.B3.RP-358	Core shroud assemblies (for bolted core shroud assemblies): (a) shroud plates and (b) former plates	Stainless steel	Reactor coolant and neutron flux	Cracking #*#due to irradiation-assisted stress corrosion cracking	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M16A, “PWR Vessel Internals” #*#Expansion components (identified in the "Structure and Components" column) #*#(for Primary component see AMR Line Item IV.B3.RP-314)	No	PWR
2585	RP-345	New Record	IV.B2.RP-345	Core barrel assembly: core barrel flange	Stainless steel	Reactor coolant and neutron flux	Loss of material #*#due to wear	Chapter XI.M16A, “PWR Vessel Internals” #*# Existing Program components (identified in the "Structure and Components" column)#*#no Expansion components	No	PWR
2605	RP-360	New Record	IV.B3.RP-360	Core shroud assembly (for welded core shrouds with full-height shroud plates): axial weld seams at the core shroud re-entrant corners, at the core mid-plane (+3 feet in height) as visible from the core side of the shroud	Stainless steel	Reactor coolant and neutron flux	Loss of fracture toughness #*#due to neutron irradiation embrittlement	Chapter XI.M16A, "PWR Vessel Internals" #*#Primary components (identified in the "Structure and Components" column) #*#(for Expansion components see AMR Line Items IV.B3.RP-361)	No	PWR
2582	SP-127	New Record	VIII.G.SP-127	Piping, piping components, and piping elements; tanks	Stainless steel	Air – outdoor	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for ASME Code components or #*#Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components" for non-ASME Code components	Yes, environmental conditions need to be evaluated	BWR/PWR
2607	RP-362	New Record	IV.B3.RP-362	Core support barrel assembly: lower cylinder welds	Stainless steel	Reactor coolant and neutron flux	Loss of fracture toughness #*#due to neutron irradiation embrittlement	Chapter XI.M16A, "PWR Vessel Internals" #*#Expansion components (identified in the "Structure and Components" column) #*#(for Primary components see AMR Line Items IV.B3RP-327)	No	PWR

2608	RP-363	New Record	IV.B3.RP-363		Lower support structure: core support column welds	Stainless steel	Reactor coolant and neutron flux	Loss of fracture toughness #*#due to neutron irradiation embrittlement	Chapter XI.M16A, "PWR Vessel Internals" #*#Expansion components (identified in the "Structure and Components" column) #*#(for Primary components see AMR Line Items IV.B3RP-327)	No	PWR
2609	RP-364	New Record	IV.B3.RP-364		Lower support structure: core support column welds	Cast austenitic stainless steel	Reactor coolant and neutron flux	Loss of fracture toughness #*#due to neutron irradiation and thermal embrittlement	Chapter XI.M16A, "PWR Vessel Internals" #*#Expansion components (identified in the "Structure and Components" column) #*#(for Primary components see AMR Line Items IV.B3RP-327)	No	PWR
2610	RP-365	New Record	IV.B3.RP-365		Lower support structure: core support plate	Stainless steel	Reactor coolant and neutron flux	Loss of fracture toughness #*#due to neutron irradiation embrittlement	Chapter XI.M16A, "PWR Vessel Internals" #*#Primary component (identified in the "Structure and Components" column) #*# no Expansion components	No	PWR
2611	RP-366	New Record	IV.B3.RP-366		Core shroud assemblies: deep beams (applicable assemblies with full height shroud plates)	Stainless stee	Reactor coolant and neutron flux	Loss of fracture toughness #*#due to neutron irradiation embrittlement	Chapter XI.M16A, “PWR Vessel Internals” #*#Primary components (identified in the "Structure and Components" column) #*#no Expansion components	No	PWR
2615	RP-370	New Record	IV.A1.RP-370	IV.A1-5(R-69)	Penetrations: control rod drive stub tubes; jet pump nozzles; flux monitor	Stainless steel; nickel alloy	Reactor coolant	Cracking #*#due to stress corrosion cracking, intergranular stress corrosion cracking, cyclic loading	Chapter XI.M9, “BWR Vessel Internals,” and Chapter XI.M2, “Water Chemistry” for BWR water	No	BWR
2616	RP-371	New Record	IV.A1.RP-371	IV.A1-5(R-69)	Penetrations: drain line	Stainless steel; nickel alloy	Reactor coolant	Cracking #*#due to stress corrosion cracking, intergranular stress corrosion cracking, cyclic loading	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD,” and #*#Chapter XI.M2, “Water Chemistry”	No	BWR

2617	RP-372	New Record	IV.D1.RP-372	Steam generator components: shell assembly	Steel	Secondary feedwater or steam	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M2, “Water Chemistry” for PWR secondary water, and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR
2604	RP-359	New Record	IV.B3.RP-359	Core shroud assemblies (welded): (shroud plates and (b) former plates	Stainless steel	Reactor coolant and neutron flux	Loss of fracture toughness #*#due to neutron irradiation embittlement; #*#change in dimension #*#due to void swelling	Chapter XI.M16A, “PWR Vessel Internals,” Primary components (identified in the "Structure and Components" column) #*# no Expansion components	No	PWR
2565	AP-221	New Record	VII.D.AP-221	Piping, piping components, and piping elements; tanks	Stainless steel	Air – outdoor	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for ASME Code components or #*#Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components" for non-ASME Code components	Yes, environmental conditions need to be evaluated	BWR/PWR
2556	SP-118	New Record	VIII.F.SP-118	Piping, piping components, and piping elements; tanks	Stainless steel	Air – outdoor	Cracking #*#due to stress corrosion cracking	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for ASME Code components or #*#Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components" for non-ASME Code components	Yes, environmental conditions need to be evaluated	BWR/PWR
2557	SP-118	New Record	VIII.G.SP-118	Piping, piping components, and piping elements; tanks	Stainless steel	Air – outdoor	Cracking #*#due to stress corrosion cracking	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for ASME Code components or #*#Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components" for non-ASME Code components	Yes, environmental conditions need to be evaluated	BWR/PWR

2558	EP-107	New Record	V.B.EP-107	Piping, piping components, and piping elements; tanks	Stainless steel	Air – outdoor	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M1, "ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD" for ASME Code components or #*#Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components" for non-ASME Code components	Yes, environmental conditions need to be evaluated	BWR/PWR
2559	EP-107	New Record	V.C.EP-107	Piping, piping components, and piping elements; tanks	Stainless steel	Air – outdoor	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M1, "ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD" for ASME Code components or #*#Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components" for non-ASME Code components	Yes, environmental conditions need to be evaluated	BWR/PWR
2560	EP-107	New Record	V.D1.EP-107	Piping, piping components, and piping elements; tanks	Stainless steel	Air – outdoor	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M1, "ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD" for ASME Code components or #*#Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components" for non-ASME Code components	Yes, environmental conditions need to be evaluated	BWR/PWR
2561	EP-107	New Record	V.D2.EP-107	Piping, piping components, and piping elements; tanks	Stainless steel	Air – outdoor	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M1, "ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD" for ASME Code components or #*#Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components" for non-ASME Code components	Yes, environmental conditions need to be evaluated	BWR/PWR
2562	AP-221	New Record	VII.C1.AP-221	Piping, piping components, and piping elements; tanks	Stainless steel	Air – outdoor	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M1, "ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD" for ASME Code components or #*#Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components" for non-ASME Code components	Yes, environmental conditions need to be evaluated	BWR/PWR
2586	RP-346	New Record	IV.B2.RP-346	Upper internals assembly: upper support ring or skirt	Stainless steel	Reactor coolant and neutron flux	Cracking #*#due to stress corrosion cracking and fatigue	Chapter XI.M2, "Water Chemistry," and #*#Chapter XI.M16A, "PWR Vessel Internals" #*# Existing Program components (identified in the "Structure and Components" column)#*#no Expansion components	No	PWR

2564	AP-221	New Record	VII.C3. AP-221	Piping, piping components, and piping elements; tanks	Stainless steel	Air – outdoor	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M1, "ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD" for ASME Code components or #*#Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components" for non-ASME Code components	Yes, environmental conditions need to be evaluated	BWR/PWR
2510	RP-324	New Record	IV.B3. RP-324	Core shroud assembly (for welded core shrouds with full-height shroud plates): axial weld seams at the core shroud re-entrant corners, at the core mid-plane (+3 feet in height) as visible from the core side of the shroud	Stainless steel	Reactor coolant and neutron flux	Cracking #*#due to irradiation-assisted stress corrosion cracking	Chapter XI.M2, "Water Chemistry," and #*#Chapter XI.M16A, "PWR Vessel Internals" #*#Primary components (identified in the "Structure and Components" column) #*#(for Expansion components see AMR Line Item IV.B3.RP-325)	No	PWR
2566	AP-221	New Record	VII.E1. AP-221	Piping, piping components, and piping elements; tanks	Stainless steel	Air – outdoor	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M1, "ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD" for ASME Code components or #*#Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components" for non-ASME Code components	Yes, environmental conditions need to be evaluated	BWR/PWR
2567	AP-221	New Record	VII.E4. AP-221	Piping, piping components, and piping elements; tanks	Stainless steel	Air – outdoor	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M1, "ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD" for ASME Code components or #*#Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components" for non-ASME Code components	Yes, environmental conditions need to be evaluated	BWR/PWR
2568	AP-221	New Record	VII.F1. AP-221	Piping, piping components, and piping elements; tanks	Stainless steel	Air – outdoor	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M1, "ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD" for ASME Code components or #*#Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components" for non-ASME Code components	Yes, environmental conditions need to be evaluated	BWR/PWR

2569	AP-221	New Record	VII.F2. AP-221	Piping, piping components, and piping elements; tanks	Stainless steel	Air – outdoor	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for ASME Code components or #*#Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components" for non-ASME Code components	Yes, environmental conditions need to be evaluated	BWR/PWR
2578	SP-127	New Record	VIII.D1. SP-127	Piping, piping components, and piping elements; tanks	Stainless steel	Air – outdoor	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for ASME Code components or #*#Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components" for non-ASME Code components	Yes, environmental conditions need to be evaluated	BWR/PWR
2579	SP-127	New Record	VIII.D2. SP-127	Piping, piping components, and piping elements; tanks	Stainless steel	Air – outdoor	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for ASME Code components or #*#Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components" for non-ASME Code components	Yes, environmental conditions need to be evaluated	BWR/PWR
2580	SP-127	New Record	VIII.E. SP-127	Piping, piping components, and piping elements; tanks	Stainless steel	Air – outdoor	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for ASME Code components or #*#Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components" for non-ASME Code components	Yes, environmental conditions need to be evaluated	BWR/PWR
2581	SP-127	New Record	VIII.F.SP-127	Piping, piping components, and piping elements; tanks	Stainless steel	Air – outdoor	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for ASME Code components or #*#Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components" for non-ASME Code components	Yes, environmental conditions need to be evaluated	BWR/PWR
2563	AP-221	New Record	VII.C2. AP-221	Piping, piping components, and piping elements; tanks	Stainless steel	Air – outdoor	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for ASME Code components or #*#Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components" for non-ASME Code components	Yes, environmental conditions need to be evaluated	BWR/PWR

2455	RP-269	New Record	IV.B2.RP-269		Reactor vessel internal components (inaccessible locations)	Stainless steel; nickel alloy	Reactor coolant and neutron flux	Loss of fracture toughness #*#due to neutron irradiation embrittlement; #*#change in dimension #*#due to void swelling; #*#loss of preload #*#due to stress relaxation; #*#loss of material #*#due to wear	Chapter XI.M16A, “PWR Vessel Internals”	Yes, if accessible Primary, Expansion or Existing program components have aging effects that need manageme nt	PWR
2512	RP-326	New Record	IV.B3.RP-326		Core shroud assembly (for welded core shrouds in two vertical sections): gap between the upper and lower plates	Stainless steel	Reactor coolant and neutron flux	Change in dimension #*#due to void swelling	Chapter XI.M16A, "PWR Vessel Internals" #*#Primary components (identified in the "Structure and Components" column) #*#no Expansion components	No	PWR
2374	RP-259	New Record	IV.B4.RP-259	IV.B4-31(R-205)	Incore Monitoring Instrumentation (IMI) guide tube assembly: accessible top surfaces of IMI guide tube spider-to-lower grid rib sections welds	Stainless steel; nickel alloy	Reactor coolant and neutron flux	Loss of fracture toughness #*#due to thermal aging, neutron irradiation embrittlement	Chapter XI.M16A, “PWR Vessel Internals” #*#Primary components (identified in the "Structure and Components" column) #*#(for Expansion components see Line Item IV.B4.RP-260)	No	PWR
2375	RP-260	New Record	IV.B4.RP-260	IV.B4-31(R-205)	Lower grid assembly: (a) accessible pads; (b) accessible pad-to-rib section welds; (c) accessible alloy X-750 dowels, cap screws and locking devices	Stainless steel; nickel alloy	Reactor coolant and neutron flux	Loss of fracture toughness #*#due to neutron irradiation embrittlement	Chapter XI.M16A, “PWR Vessel Internals” #*#Expansion components (identified in the "Structure and Components" column) #*#(for Primary components see AMR Line Items IV.B4.RP-258 and IV.B4.RP-259)	No	PWR

2376	RP-261	New Record	IV.B4.RP-261	IV.B4-32(R-203)	Lower grid assembly: alloy X-750 dowel-to-guide block welds	Nickel alloy	Reactor coolant and neutron flux	Cracking #*#due to stress corrosion cracking	Chapter XI.M2, “Water Chemistry,” for PWR primary water, and #*#Chapter XI.M16A, “PWR Vessel Internals” #*#Primary components (identified in the "Structure and Components" column) #*#(for Expansion components see AMR Line Item IV.B4.RP-262 and IV.B4.RP-352)	No	PWR
2377	RP-262	New Record	IV.B4.RP-262	IV.B4-32(R-203)	Lower grid assembly: accessible alloy X-750 dowel-to-lower fuel assembly suppport pad welds	Stainless steel; nickel alloy	Reactor coolant and neutron flux	Cracking #*#due to stress corrosion cracking	Chapter XI.M2, “Water Chemistry,” for PWR primary water, and #*#Chapter XI.M16A, “PWR Vessel Internals” #*#Expansion components (identified in the "Structure and Components" column) #*#(for Primary components see AMR Line Item IV.B4.RP-261)	No	PWR
1627	SP-93	New Record	VIII.I.SP-93		Piping, piping components, and piping elements	Aluminum	Air – indoor, uncontrolled (Internal/External)	None	None	No	BWR/PWR
2451	RP-265	New Record	IV.B2.RP-265		Reactor vessel internal components with no additional measures	Stainless steel; nickel alloy	Reactor coolant and neutron flux	Cracking #*#due to stress corrosion cracking, and irradiation-assisted stress corrosion cracking	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M16A, “PWR Vessel Internals” #*#Note: Components with no additional measures are not uniquely identified in GALL tables - Components with no additional measures are defined in Section 3.3.1 of MRP-227, "Materials Reliability Program: Pressurized Water Reactor Internals Inspection and Evaluation Guidelines"	No	PWR
2371	RP-256	New Record	IV.B4.RP-256	IV.B4-25(R-210)	Flow distributor assembly: flow distributor bolts and locking devices	Stainless steel; nickel alloy	Reactor coolant and neutron flux	Cracking #*#due to stress corrosion cracking	Chapter XI.M2, “Water Chemistry,” for PWR primary water, and #*#Chapter XI.M16A, “PWR Vessel Internals,” Expansion components (identified in the "Structure and Components" column) #*#(for Primary components see ARM Line Item IV.B4.RP-247)	No	PWR

2454	RP-268	New Record	IV.B2.RP-268		Reactor vessel internal components (inaccessible locations)	Stainless steel; nickel alloy	Reactor coolant and neutron flux	Cracking #*#due to stress corrosion cracking, and irradiation-assisted stress corrosion cracking	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M16A, “PWR Vessel Internals”	Yes, if accessible Primary, Expansion or Existing program components have aging effects that need manageme nt	PWR
2369	RP-254	New Record	IV.B4.RP-254	IV.B4-25(R-210)	Lower grid assembly: #*#alloy X-750 lower grid shock pad bolts and locking devices (TMI-1, only)	Nickel alloy	Reactor coolant and neutron flux	Cracking #*#due to stress corrosion cracking	Chapter XI.M2, “Water Chemistry,” for PWR primary water, and #*#Chapter XI.M16A, “PWR Vessel Internals,” Expansion components (identified in the "Structure and Components" column) #*#(for Primary components see ARM Line Item IV.B4.RP-247)	No	PWR
2456	RP-270	New Record	IV.B2.RP-270	IV.B2-1(R-124)	Baffle-to-former assembly: baffle and former plates	Stainless steel	Reactor coolant and neutron flux	Change in dimension #*#due to void swelling	Chapter XI.M16A, “PWR Vessel Internals” #*# Primary components (identified in the "Structure and Components" column) #*#no Expansion components	No	PWR
2457	RP-271	New Record	IV.B2.RP-271	IV.B2-10(R-125)	Baffle-to-former assembly: accessible baffle-to-former bolts	Stainless steel	Reactor coolant and neutron flux	Cracking #*#due to irradiation-assisted stress corrosion cracking and fatigue	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M16A, “PWR Vessel Internals” #*#Primary components (identified in the "Structure and Components" column) #*#(for Expansion components see AMR Line Items IV.B2.RP-273 and IV.B2.RP-286)	No	PWR

2458	RP-272	New Record	IV.B2.RP-272	IV.B2-6(R-128)	Baffle-to-former assembly: accessible baffle-to-former bolts	Stainless steel	Reactor coolant and neutron flux	Loss of fracture toughness; #*#due to neutron irradiation embrittlement #*#change in dimension #*#due to void swelling; #*#loss of preload #*#due to stress relaxation	Chapter XI.M16A, “PWR Vessel Internals” #*# Primary components (identified in the "Structure and Components" column) #*#(for Expansion components see AMR Line Items IV.B2.RP-274 and IV.B2.RP-287)	No	PWR
2459	RP-273	New Record	IV.B2.RP-273	IV.B2-10(R-125)	Baffle-to-former assembly: barrel-to-former bolts	Stainless steel	Reactor coolant and neutron flux	Cracking #*#due to irradiation-assisted stress corrosion cracking and fatigue	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M16A, “PWR Vessel Internals” #*#Expansion components (identified in the "Structure and Components" column) #*#(for Primary components see AMR Line Item IV.B2.RP-271)	No	PWR
2460	RP-274	New Record	IV.B2.RP-274	IV.B2-6(R-128)	Baffle-to-former assembly: inaccessible baffle-to-former bolts	Stainless steel	Reactor coolant and neutron flux	Loss of fracture toughness; #*#due to neutron irradiation embrittlement; #*#change in dimension #*#due to void swelling; #*#loss of preload #*#due to stress relaxation	Chapter XI.M16A, “PWR Vessel Internals” #*# Expansion components (identified in the "Structure and Components" column) #*#(for Primary components see AMR Line Item IV.B2.RP-272)	No	PWR
2461	RP-275	New Record	IV.B2.RP-275	IV.B2-6(R-128)	Baffle-to-former assembly: barrel-edge bolts (all plants with baffle-edge bolts)	Stainless steel	Reactor coolant and neutron flux	Cracking #*#due to irradiation-assisted stress corrosion cracking and fatigue	Chapter XI.M2, “Water Chemistry,” for PWR primary water, and #*#Chapter XI.M16A, “PWR Vessel Internals” #*#Primary components (identified in the "Structure and Components" column) #*#no Expansion components	No	PWR

2462	RP-276	New Record	IV.B2.RP-276	IV.B2-8(R-120)	Core barrel assembly: upper core barrel flange weld	Stainless steel	Reactor coolant and neutron flux	Cracking #*#due to stress corrosion cracking and irradiation-assisted stress corrosion cracking	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M16A, “PWR Vessel Internals” #*#Primary components (identified in the "Structure and Components" column) #*#(for Expansion components see AMR Line Items IV.B2.RP-278, IV.B2.RP-280, IV.B2.RP-282, and 'IV.B2.RP-294, IV.B2.RP-295, and IV. B4.RP-281)	No	PWR
2464	RP-278	New Record	IV.B2.RP-278	IV.B2-8(R-120)	Core barrel assembly: core barrel outlet nozzle welds	Stainless steel	Reactor coolant and neutron flux	Cracking #*#due to stress corrosion cracking and fatigue	Chapter XI.M2, “Water Chemistry,” for PWR primary water, and #*#Chapter XI.M16A, “PWR Vessel Internals” #*#Expansion component (identified in the "Structure and Components" column) #*#(for Primary components see AMR Line Item IV.B2.RP-276)	No	PWR
2453	RP-267	New Record	IV.B2.RP-267		Reactor vessel internal components with no additional measures	Stainless steel; nickel alloy	Reactor coolant and neutron flux	Loss of fracture toughness #*#due to neutron irradiation embrittlement; #*#change in dimension #*#due to void swelling; #*#loss of preload #*#due to stress relaxation; #*#loss of material #*#due to wear	Chapter XI.M16A, “PWR Vessel Internals” #*#No additional measures #*#Note: Components with no additional measures are not uniquiely identified in GALL tables - Components with no additional measures are defined in Section 3.3.1 of MRP-227, "Materials Reliability Program: Pressurized Water Reactor Internals Inspection and Evaluation Guidelines"	No	PWR

2359	RP-244	New Record	IV.B4.RP-244	IV.B4-7(R125)	Core barrel assembly; (a) external baffle-to-baffle bolts; (b) core barrel-to-former bolts; (c) locking devices (including welds) of external baffle-to-baffle bolts and core barrel-to-former bolts	Stainless steel	Reactor coolant and neutron flux	Cracking #*#due to stress corrosion cracking, irradiation-assisted stress corrosion cracking	Chapter XI.M2, "Water Chemistry" for PWR primary water, and #*#Chapter XI.M16A, "PWR Vessel Internals" #*#Expansion components (identified in the "Structure and Components" column) #*#(for Primary components see AMR Line Item IV.B4.RP-241)	No	PWR
2350	CP-156	New Record	II.B3.1.CP-156	II.B3.1-3(C-30)	Concrete (accessible areas): basemat	Concrete	Water – flowing	Increase in porosity and permeability #*#due to leaching of calcium hydroxide and carbonation	Chapter XI.S2, “ASME Section XI, Subsection IWL”	No	BWR
2351	RP-236	New Record	IV.B4.RP-236		Reactor vessel internal components with no additional measures	Stainless steel; nickel alloy	Reactor coolant and neutron flux	Cracking #*#due to stress corrosion cracking, and irradiation-assisted stress corrosion cracking	Chapter XI.M2, “Water Chemistry” for PWR primary water, and #*#Chapter XI.M16A, “PWR Vessel Internals” #*#Note: Components with no additional measures are not uniquely identifies in GALL tables - Components with no additional measures are defined in Section 3.3.1 of MRP-227, "Materials Reliability Program: Pressurized Water Reactor Internals Inspection and Evaluation Guidelines"	No	PWR

2352	RP-237	New Record	IV.B4. RP-237	Reactor vessel internal components with no additional measures	Stainless steel; nickel alloy	Reactor coolant and neutron flux	Loss of fracture toughness #*#due to neutron irradiation embrittlement; #*#change in dimension #*#due to void swelling; #*#loss of preload #*#due to stress relaxation; #*#loss of material #*#due to wear	Chapter XI.M16A, “PWR Vessel Internals” #*#Note: Components with no additional measures are not uniquely identified in GALL tables - Components with no additional measures are defined in Section 3.3.1 of MRP-227, "Materials Reliability Program: Pressurized Water Reactor Internals Inspection and Evaluation Guidelines"	No	PWR
2353	RP-238	New Record	IV.B4. RP-238	Reactor vessel internal components (inaccessible locations)	Stainless steel; nickel alloy	Reactor coolant and neutron flux	Cracking #*#due to stress corrosion cracking, and irradiation-assisted stress corrosion cracking	Chapter XI.M2, “Water Chemistry” for PWR primary water, and #*#Chapter XI.M16A, “PWR Vessel Internals”	Yes, if accessible Primary, Expansion or Existing program components have aging effects that need manageme nt	PWR

2354	RP-239	New Record	IV.B4.RP-239		Reactor vessel internal components (inaccessible locations)	Stainless steel; nickel alloy	Reactor coolant and neutron flux	Loss of fracture toughness #*#due to neutron irradiation embrittlement; #*#change in dimension #*#due to void swelling; #*#loss of preload #*#due to stress relaxation; #*#loss of material #*#due to wear	Chapter XI.M16A, “PWR Vessel Internals”	Yes, if accessible Primary, Expansion or Existing program components have aging effects that need manageme nt	PWR
2355	RP-240	New Record	IV.B4.RP-240	IV.B4-1(R-128) IV.B4-8(R-199)	Core barrel assembly: baffle/former assembly; (a) accessible baffle-to-former bolts and screws; (b) accessible locking devices (including welds) of baffle-to-former bolts and internal baffle-to-baffle bolts; (c) internal baffle-to-baffle bolts	Stainless steel	Reactor coolant and neutron flux	Loss of fracture toughness #*#due to neutron irradiation embrittlement; #*#loss of preload #*#due to stress relaxation; #*# loss of material #*#due to wear	Chapter XI.M16A, “PWR Vessel Internals.” #*#Primary components (identified in the "Structure and Components" column) #*# (for Expansion components see AMR Line Item IV.B4.RP-243.)	No	PWR
2356	RP-241	New Record	IV.B4.RP-241	IV.B4-7(R125)	Core barrel assembly: baffle/former assembly; (a) accessible baffle-to-former bolts and screws; (b) accessible locking devices (including welds) of baffle-to-former bolts and internal baffle-to-baffle bolts; (c) internal baffle-to-baffle bolts	Stainless steel	Reactor coolant and neutron flux	Cracking #*#due to stress corrosion cracking, irradiation-assisted stress corrosion cracking	Chapter XI.M2, “Water Chemistry” for PWR primary water, and #*#Chapter XI.M16A, “PWR Vessel Internals” #*#Primary Components (identified in the "Structure and Components" column) #*#(for Expansion components see AMR Line Item IV.B4.RP-244)	No	PWR

2373	RP-258	New Record	IV.B4.RP-258	IV.B4-4(R-183)	Incore Monitoring Instrumentation (IMI) guide tube assembly: accessible top surfaces of IMI Incore guide tube spider castings	Cast austenitic stainless steel	Reactor coolant and neutron flux	Loss of fracture toughness #*#due to thermal aging, neutron irradiation embrittlement	Chapter XI.M16A, “PWR Vessel Internals” #*#Primary components (identified in the "Structure and Components" column) #*#(for Expansion components see Line Items IV.B4.RP-242 and IV.B4.RP-260)	No	PWR
2358	RP-243	New Record	IV.B4.RP-243	IV.B4-1(R-128) IV.B4-8(R-199)	Core barrel assembly; (a) external baffle-to-baffle bolts; (b) core barrel-to-former bolts; (c) locking devices (including welds) of external baffle-to-baffle bolts and core barrel-to-former bolts	Stainless steel	Reactor coolant and neutron flux	Loss of fracture toughness #*#due to neutron irradiation embrittlement; #*#loss of preload #*#due to stress relaxation #*#loss of material #*#due to wear	Chapter XI.M16A, "PWR Vessel Internals" #*#Expansion components (identified in the "Structure and Components" column) #*#(for Primary components see AMR Line Item IV.B4.RP-240)	No	PWR
2468	RP-282	New Record	IV.B2.RP-282	IV.B2-8(R-120)	Core barrel assembly: lower core barrel flange weld	Stainless steel	Reactor coolant and neutron flux	Cracking #*#due to stress corrosion cracking	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M16A, “PWR Vessel Internals” #*#Expansion components (identified in the "Structure and Components" column) #*#(for Primary components see AMR Line Item IV.B2.RP-276)	No	PWR
2360	RP-245	New Record	IV.B4.RP-245	IV.B4-13(R-194)	Core barrel assembly: (a) upper thermal shield bolts; (b) surveillance specimen holder tube bolts (Davis-Besse, only); (c) surveillance specimen holder studs, and nuts (Crystal River Unit 3, only)	Stainless steel; nickel alloy	Reactor coolant and neutron flux	Cracking #*#due to stress corrosion cracking	Chapter XI.M2, “Water Chemistry,” for PWR primary water, and #*#Chapter XI.M16A, “PWR Vessel Internals” #*#Expansion components (identified in the "Structure and Components" column) #*#(for Primary components see AMR Line Item IV.B4.RP-247)	No	PWR

2361	RP-246	New Record	IV.B4.RP-246	IV.B4-12(R-196)	Lower grid assembly: #*#lower thermal shield (LTS) bolts	Stainless steel; nickel alloy	Reactor coolant and neutron flux	Cracking #*#due to stress corrosion cracking	'Chapter XI.M2, “Water Chemistry,” for PWR primary water, and #*#Chapter XI.M16A, “PWR Vessel Internals” #*#Expansion components (identified in the "Structure and Components" column) #*#(for Primary components see AMR Line Item IV.B4.RP-247)	No	PWR
2108	CP-41	New Record	II.B4.CP-41		Seals and gaskets	Elastomers, rubber and other similar materials	Air – indoor, uncontrolled or Air – outdoor	Loss of sealing #*#due to wear, damage, erosion, tear, surface cracks, or other defects	Chapter XI.S4, “10 CFR Part 50, Appendix J "	No	BWR
2363	RP-248	New Record	IV.B4.RP-248	IV.B4-12(R-196)	Core support shield (CSS) assembly: #*#accessible upper core barrel (UCB) bolts and locking devices	Stainless steel; nickel alloy	Reactor coolant and neutron flux	Cracking #*#due to stress corrosion cracking	Chapter XI.M2, “Water Chemistry,” for PWR primary water, and Chapter XI.M16A, “PWR Vessel Internals” #*#Primary components (identified in the "Structure and Components" column) #*#(for Expansion components see AMR Line Items IV.B4.RP-245, IV.B4.RP-246, IV.B4.RP-254, and IV.B4.RP-256)	No	PWR
2365	RP-250	New Record	IV.B4.RP-250	IV.B4-12(R-196)	Core barrel assembly: core barrel cylinder (including vertical and circumferential seam welds); former plates	Stainless steel	Reactor coolant and neutron flux	Loss of fracture toughness #*#due to neutron irradiation embrittlement	Chapter XI.M16A, “PWR Vessel Internals” #*#Expansion components (identified in the "Structure and Components" column) #*#(for Primary components see AMR Line Item IV.B4.RP-249)	No	PWR
2366	RP-251	New Record	IV.B4.RP-251	IV.B4-15(R-190)	Core support shield (CSS) assembly: CSS top flange; plenum cover assembly: plenum cover weldment rib pads and plenum cover support flange	Stainless steel; nickel alloy	Reactor coolant and neutron flux	Loss of material #*#due to wear	Chapter XI.M16A, “PWR Vessel Internals” #*#Primary component (identified in the "Structure and Components" column) #*#No Expansion components	No	PWR

2367	RP-252	New Record	IV.B4.RP-252	IV.B4-16(R-188)	Core support shield (CSS) assembly: (a) CSS vent valve disc shaft or hinge pin (b) CSS vent valve top retaining ring (c) CSS vent valve bottom retaining ring	Stainless steel; nickel alloy	Reactor coolant and neutron flux	Loss of fracture toughness #*#due to thermal aging embrittlement	Chapter XI.M16A, “PWR Vessel Internals” #*#Primary components (identified in the "Structure and Components" column) #*#No Expansion components	No	PWR
2368	RP-253	New Record	IV.B4.RP-253	IV.B4-21(R-191)	Core support shield (CSS) assembly: (a) CSS cast outlet nozzles (Oconee Unit 3 and Davis-Besse, only); (b) CSS vent valve discs	Cast austenitic stainless steel	Reactor coolant and neutron flux	Loss of fracture toughness #*#due to thermal aging embrittlement	Chapter XI.M16A, “PWR Vessel Internals” #*#Primary components (identified in the "Structure and Components" column) #*#(for Expansion components see ARM Line Item IV.B4.RP-242)	No	PWR
2357	RP-242	New Record	IV.B4.RP-242	IV.B4-4(R-183)	Control rod guide tube (CRGT) assembly: accessible surfaces at four screw locations (every 90 degrees) for CRGT spacer castings	Cast austenitic stainless steel	Reactor coolant and neutron flux	Loss of fracture toughness #*#due to thermal aging embrittlement	Chapter XI.M16A, “PWR Vessel Internals” #*#Expansion components (identified in the "Structure and Components" column) #*# (for Primary components see AMR Line Items IV.B4.RP-253 and IV.B4.RP-258)	No	PWR
2502	RP-316	New Record	IV.B3.RP-316	IV.B3-9(R-162)	Core shroud assemblies (for bolted core shroud assemblies): barrel-shroud bolts	Stainless steel	Reactor coolant and neutron flux	Cracking #*#due to irradiation-assisted stress corrosion cracking	Chapter XI.M2, "Water Chemistry," and #*#Chapter XI.M16A, "PWR Vessel Internals" #*#Expansion components (identified in the "Structure and Components" column) #*#(for Primary components see AMR Line Item IV.B3.RP-314)	No	PWR
2490	RP-304	New Record	IV.B2.RP-304	IV.B2-32(R-24)	Reactor vessel internal components	Stainless steel; nickel alloy	Reactor coolant and neutron flux	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M2, “Water Chemistry”	No	PWR

2492	RP-306	New Record	IV.B3.RP-306	Reactor vessel internal components with no additional measures	Stainless steel; nickel alloy	Reactor coolant and neutron flux	Cracking #*#due to stress corrosion cracking, and irradiation-assisted stress corrosion cracking	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M16A, “PWR Vessel Internals” #*#Note: Components with no additional measures are not uniquely identified in GALL tables - Components with no additional measures are defined in Section 3.3.1 of MRP-227, "Materials Reliability Program: Pressurized Water Reactor Internals Inspection and Evaluation Guidelines"	No	PWR
2493	RP-307	New Record	IV.B3.RP-307	Reactor vessel internal components with no additional measures	Stainless steel; nickel alloy	Reactor coolant and neutron flux	Loss of fracture toughness #*#due to neutron irradiation embrittlement; #*#change in dimension #*#due to void swelling; #*#loss of preload #*#due to stress relaxation; #*#loss of material #*#due to wear	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M16A, “PWR Vessel Internals” #*#Note: Components with no additional measures are not uniquely identified in GALL tables - Components with no additional measures are defined in Section 3.3.1 of MRP-227, "Materials Reliability Program: Pressurized Water Reactor Internals Inspection and Evaluation Guidelines"	No	PWR

2495	RP-309	New Record	IV.B3.RP-309		Reactor vessel internal components (inaccessible locations)	Stainless steel; nickel alloy	Reactor coolant and neutron flux	Cracking #*#due to stress corrosion cracking, and irradiation-assisted stress corrosion cracking	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M16A, “PWR Vessel Internals”	Yes, if accessible Primary, Expansion or Existing program components have aging effects that need manageme nt	PWR
2497	RP-311	New Record	IV.B3.RP-311		Reactor vessel internal components (inaccessible locations)	Stainless steel; nickel alloy	Reactor coolant and neutron flux	Loss of fracture toughness #*#due to neutron irradiation embrittlement; #*#change in dimension #*#due to void swelling; #*#loss of preload #*#due to stress relaxation; #*#loss of material #*#due to wear	Chapter XI.M16A, “PWR Vessel Internals”	Yes, if accessible Primary, Expansion or Existing program components have aging effects that need manageme nt	PWR
2498	RP-312	New Record	IV.B3.RP-312	IV.B3-2(R-149)	Control Element Assembly (CEA): shroud assemblies: instrument guide tubes in peripheral CEA assemblies	Stainless steel	Reactor coolant and neutron flux	Cracking #*#due to stress corrosion cracking and fatigue	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M16A, “PWR Vessel Internals” #*#Primary components (identified in the "Structure and Components" column) #*#(for Expansion components see AMR Line Item IV.B3.RP-313)	No	PWR

2499	RP-313	New Record	IV.B3.RP-313		Control Element Assembly (CEA): shroud assemblies: remaining instrument guide tubes in CEA assemblies	Stainless steel	Reactor coolant and neutron flux	Cracking #*#due to stress corrosion cracking and fatigue	Chapter XI.M2, "Water Chemistry," and #*#Chapter XI.M16A, "PWR Vessel Internals" #*#Expansion components (identified in the "Structure and Components" column) #*#(for Primary components see AMR Line Item IV.B3.RP-312)	No	PWR
2466	RP-280	New Record	IV.B2.RP-280	IV.B2-8(R-120)	Core barrel assembly: core barrel axial welds	Stainless steel	Reactor coolant and neutron flux	Cracking #*#due to stress corrosion cracking and irradiation-assisted stress corrosion cracking	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M16A, “PWR Vessel Internals” #*#Expansion component (identified in the "Structure and Components" column) #*#(for Primary components see AMR Line Item IV.B2.RP-276)	No	PWR
2501	RP-315	New Record	IV.B3.RP-315	IV.B3-7(R-165)	Core shroud assemblies (for bolted core shroud assemblies): core shroud bolts (accessible)	Stainless steel	Reactor coolant and neutron flux	Loss of preload #*#due to stress relaxation; #*#loss of fracture toughness #*#due to neutron irradiation embrittlement; #*# change in dimension #*#due to void swelling	Chapter XI.M16A, “PWR Vessel Internals,” Primary components (identified in the "Structure and Components" column) #*# (for Expansion components see AMR Line Items IV.B3.RP-317, IV.B3.RP-321, and IV.B3.RP-331)	No	PWR
2487	RP-301	New Record	IV.B2.RP-301	V.B2-40(R-112)	Alignment and interfacing components: upper core plate alignment pins	Stainless steel	Reactor coolant and neutron flux	Cracking #*#due to stress corrosion cracking	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M16A, “PWR Vessel Internals” #*#Existing Program components (identified in the "Structure and Components" column)#*#no Expansion components	No	PWR

2503	RP-317	New Record	IV.B3.RP-317	IV.B3-7(R-165)	Core shroud assemblies (for bolted core shroud assemblies): barrel-shroud bolts with neutron exposures greater than 3 dpa	Stainless steel; nickel alloy	Reactor coolant and neutron flux	Loss of preload #*#due to stress relaxation; #*#loss of fracture toughness #*#due to neutron irradiation embrittlement	Chapter XI.M16A, "PWR Vessel Internals" #*#Expansion components (identified in the "Structure and Components" column) #*#(for Primary components see AMR Line Item IV.B3.RP-315)	No	PWR
2504	RP-318	New Record	IV.B3.RP-318	IV.B4-8(R-163)	Core shroud assemblies (for bolted core shroud assemblies): (a) shroud plates and (b) former plates	Stainless steel	Reactor coolant and neutron flux	Loss of fracture toughness #*#due to neutron irradiation embittlement; #*#change in dimension #*#due to void swelling	Chapter XI.M16A, "PWR Vessel Internals" #*#Primary components (identified in the "Structure and Components" column) #*#no Expansion components	No	PWR
2505	RP-319	New Record	IV.B3.RP-319	IV.B3-9(R-162)	Core shroud assemblies (all plants): guide lugs and guide lug insert bolts	Stainless steel	Reactor coolant and neutron flux	Loss of material #*#due to wear	Chapter XI.M16A, "PWR Vessel Internals" #*#Primary components (identified in the "Structure and Components" column)/existing program #*#no Expansion components	No	PWR
2506	RP-320	New Record	IV.B3.RP-320	IV.B3-9(R-162)	Core shroud assemblies (all plants): guide lugs and guide lug insert bolts	Stainless steel	Reactor coolant and neutron flux	Cracking #*#due to fatigue	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M16A, “PWR Vessel Internals” #*#Expansion components (identified in the "Structure and Components" column) #*#(for Primary components see AMR Line Item IV.B3.RP-314)	No	PWR
2507	RP-321	New Record	IV.B3.RP-321	IV.B3-7(R-165)	Core shroud assemblies (all plants): guide lugs and guide lug insert bolts	Stainless steel	Reactor coolant and neutron flux	Loss of preload #*#due to stress relaxation	Chapter XI.M16A, “PWR Vessel Internals,” Expansion components (identified in the "Structure and Components" column) #*# (for Primary components see AMR Line Item IV.B3.RP-315)	No	PWR

2508	RP-322	New Record	IV.B3.RP-322		Core shroud assembly (for welded core shrouds in two vertical sections): (a) axial and horizontal weld seams at the core shroud re-entrant corners as visible from the core side of the shroud, within six inches of the central flange and (b) the horizontal stiffeners in shroud plate-to-former plate weld	Stainless steel	Reactor coolant and neutron flux	Cracking #*#due to irradiation-assisted stress corrosion cracking	Chapter XI.M2, “Water Chemistry,” for PWR primary water, and #*#Chapter XI.M16A, “PWR Vessel Internals” #*#Primary components (identified in the "Structure and Components" column) #*#(for Expansion components see AMR Line Item IV.B3.RP-323)	No	PWR
2509	RP-323	New Record	IV.B3.RP-323		Core shroud assembly (for welded core shrouds in two vertical sections): remaining axial welds in shroud plate-to-former plate	Stainless steel	Reactor coolant and neutron flux	Cracking #*#due to irradiation-assisted stress corrosion cracking	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M16A, “PWR Vessel Internals” #*#Expansion components (identified in the "Structure and Components" column) #*#(for Primary components see AMR Line Item IV.B3.RP-322)	No	PWR
2349	CP-155	New Record	II.A2.CP-155	II.A2-6(C-30)	Concrete (accessible areas): basemat	Concrete	Water – flowing	Increase in porosity and permeability #*#due to leaching of calcium hydroxide and carbonation	Chapter XI.S2, “ASME Section XI, Subsection IWL”	No	PWR
2500	RP-314	New Record	IV.B3.RP-314	IV.B3-9(R-162)	Core shroud assemblies (for bolted core shroud assemblies): core shroud bolts (accessible)	Stainless steel	Reactor coolant and neutron flux	Cracking #*#due to irradiation-assisted stress corrosion cracking	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M16A, “PWR Vessel Internals” #*#Primary components (identified in the "Structure and Components" column) #*#(for Expansion components see AMR Line Items IV.B3.RP-316, 'IV.B3.RP-320, IV.B3.RP-330, and IV.B3.RP-358)	No	PWR

2479	RP-293	New Record	IV.B2.RP-293	IV.B2-24(R-138)	Lower internal assembly: bottom-mounted instrumentation (BMI) column bodies	Stainless steel	Reactor coolant and neutron flux	Cracking #*#due to fatigue	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M16A, “PWR Vessel Internals” #*#Expansion components (identified in the "Structure and Components" column)#*#(for Primary components see AMR Line Item IV.B2.RP-298)	No	PWR
2511	RP-325	New Record	IV.B3.RP-325		Core shroud assembly (for welded core shrouds with full-height shroud plates): remaining axial welds, ribs, and rings	Stainless steel	Reactor coolant and neutron flux	Cracking #*#due to irradiation-assisted stress corrosion cracking	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M16A, “PWR Vessel Internals” #*#Expansion components (identified in the "Structure and Components" column) #*#(for Primary components see AMR Line Item IV.B3.RP-324)	No	PWR
2470	RP-284	New Record	IV.B2.RP-284	IV.B2-12(R-143) IV.B2-13(R-145)	Bottom mounted instrument system: flux thimble tubes	Stainless steel	Reactor coolant and neutron flux	Loss of material #*#due to wear	Chapter XI.M16A, “PWR Vessel Internals” #*# Existing Program components (identified in the "Structure and Components" column) #*#No expansion components; and #*#Chapter XI.M37, "Flux Thimble Tube Inspection"	No	PWR
2471	RP-285	New Record	IV.B2.RP-285	IV.B2-14(R-137)	Lower internal assembly: clevis insert bolts	Nickel alloy	Reactor coolant and neutron flux	Loss of material #*#due to wear	Chapter XI.M16A, “PWR Vessel Internals” #*# Existing Program components (identified in the "Structure and Components" column) #*#no Expansion components	No	PWR
2472	RP-286	New Record	IV.B2.RP-286	IV.B2-16(R-133)	Lower support assembly: lower support column bolts	Stainless steel; nickel alloy	Reactor coolant and neutron flux	Cracking #*#due to irradiation-assisted stress corrosion cracking and fatigue	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M16A, “PWR Vessel Internals” #*#Expansion components (identified in the "Structure and Components" column) #*#(for Primary components see AMR Line Item IV.B2.RP-271)	No	PWR

2473	RP-287	New Record	IV.B2.RP-287	IV.B2-17(R-135)	Lower internal assembly: lower support plate column bolts	Stainless steel; nickel alloy	Reactor coolant and neutron flux	Loss of fracture toughness; #*#due to neutron irradiation embrittlement #*#loss of preload #*#due to stress relaxation	Chapter XI.M16A, “PWR Vessel Internals” #*# Expansion component (identified in the "Structure and Components" column) #*#(for Primary components see AMR Line Item IV.B2.RP-272)	No	PWR
2474	RP-288	New Record	IV.B2.RP-288	IV.B2-18(R-132)	Lower internals assembly: lower core plate and extra-long (XL) lower core plate	Stainless steel	Reactor coolant and neutron flux	Loss of fracture toughness; #*#due to neutron irradiation embrittlement; #*#loss of material #*#due to wear	Chapter XI.M16A, “PWR Vessel Internals” #*# Existing Program components (identified in the "Structure and Components" column) #*#no Expansion components	No	PWR
2475	RP-289	New Record	IV.B2.RP-289	IV.B2-20(R-130)	Lower internals assembly: lower core plate and extra-long (XL) lower core plate	Stainless steel	Reactor coolant and neutron flux	Cracking #*#due to irradiation-assisted stress corrosion cracking, and fatigue	'Chapter XI.M2, “Water Chemistry,” for PWR primary water, and #*#Chapter XI.M16A, “PWR Vessel Internals” #*#Existing Program components (identified in the "Structure and Components" column) #*#no Expansion components	No	PWR
2476	RP-290	New Record	IV.B2.RP-290	IV.B2-21(R-140)	Lower support assembly: lower support column bodies (cast)	Cast austenitic stainless steel	Reactor coolant and neutron flux	Loss of fracture toughness #*#due to thermal aging and neutron irradiation embrittlement	Chapter XI.M16A, “PWR Vessel Internals” #*# Expansion components (identified in the "Structure and Components" column)#*#(for Primary components see AMR Line Item IV.B2.RP-297)	No	PWR
2489	RP-303	New Record	IV.B2.RP-303	IV.B2-31(R-53	Reactor vessel internal components	Stainless steel; nickel alloy	Reactor coolant and neutron flux	Cumulative fatigue damage #*#due to fatigue	Fatigue is a TLAA to be evaluated for the period of extended operation. See the SRP, Section 4.3, "Metal Fatigue" for acceptable methods for meeting the requirements of 10 CFR 54.21(c)(1)	Yes, TLAA	PWR

2478	RP-292	New Record	IV.B2.RP-292	IV.B2-21(R-140)	Lower internal assembly: bottom-mounted instrument (BMI) column bodies	Stainless steel	Reactor coolant and neutron flux	Loss of fracture toughness #*#due to neutron irradiation embrittlement	Chapter XI.M16A, “PWR Vessel Internals” #*# Expansion components (identified in the "Structure and Components" column) #*#(for Primary components see AMR Line Item IV.B2.RP-297)	No	PWR
2488	RP-302	New Record	IV.B2.RP-302		Thermal shield assembly: thermal shield flexures	Stainless steel	Reactor coolant and neutron flux	Cracking #*#due to fatigue; #*#loss of material #*#due to wear	Chapter XI.M16A, “PWR Vessel Internals” #*# Primary components (identified in the "Structure and Components" column) #*#no Expansion components	No	PWR
2480	RP-294	New Record	IV.B2.RP-294	IV.B2-24(R-138)	Lower support assembly: lower support column bodies (non-cast)	Stainless steel	Reactor coolant and neutron flux	Cracking #*#due to irradiation-assisted stress corrosion cracking	Chapter XI.M2, “Water Chemistry,” for PWR primary water, and #*#Chapter XI.M16A, “PWR Vessel Internals” #*#Expansion components (identified in the "Structure and Components" column) #*#(for Primary components see AMR Line Item IV.B2.RP-276)	No	PWR
2481	RP-295	New Record	IV.B2.RP-295	IV.B2-22(R-141)	Lower support assembly: lower support column bodies (non-cast)	Stainless steel	Reactor coolant and neutron flux	Loss of fracture toughness; #*#due to neutron irradiation embrittlement	Chapter XI.M16A, “PWR Vessel Internals” #*# Expansion Components (identified in the "Structure and Components" column) #*#(for Primary components see AMR Line Item IV.B2.RP-276)	No	PWR
2482	RP-296	New Record	IV.B2.RP-296		Control rod guide tube (CRGT) assemblies: CRGT guide plates (cards)	Stainless steel	Reactor coolant and neutron flux	Loss of material #*#due to wear	Chapter XI.M16A, “PWR Vessel Internals” #*# Primary Components (identified in the "Structure and Components" column) #*#no Expansion components	No	PWR
2483	RP-297	New Record	IV.B2.RP-297		Control rod guide tube (CRGT) assemblies: CRGT lower flange weld (accessible)	Cast austenitic stainless steel	Reactor coolant and neutron flux	Loss of fracture toughness #*#due to thermal aging and neutron irradiation embrittlement	Chapter XI.M16A, “PWR Vessel Internals” #*# Primary components (identified in the "Structure and Components" column) #*#(for Expansion components see AMR Line Items IV.B2.RP-290 and IV.B2.RP-292)	No	PWR

2484	RP-298	New Record	IV.B2.RP-298	IV.B2-28(R-118)	Control rod guide tube (CRGT) assemblies: CRGT lower flange weld (accessible)	Cast austenitic stainless steel	Reactor coolant and neutron flux	Cracking #*#due to stress corrosion cracking and fatigue	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M16A, “PWR Vessel Internals” #*#Primary components (identified in the "Structure and Components" column)#*#(for Expansion components see AMR Line Items IV.B2.RP-291 and IV.B2.RP-293)	No	PWR
2485	RP-299	New Record	IV.B2.RP-299	IV.B2-34(R-115)	Alignment and interfacing components: upper core plate alignment pins	Stainless steel	Reactor coolant and neutron flux	Loss of material #*#due to wear	Chapter XI.M16A, “PWR Vessel Internals” #*#Existing Program components (identified in the "Structure and Components" column) #*#no Expansion components	No	PWR
2486	RP-300	New Record	IV.B2.RP-300	IV.B2-33(R-108)	Alignment and interfacing components: internals hold down spring	Stainless steel	Reactor coolant and neutron flux	Loss of preload #*#due to stress relaxation; #*#loss of material #*#due to wear	Chapter XI.M16A, “PWR Vessel Internals” #*# Primary components (identified in the "Structure and Components" column) #*#no Expansion components	No	PWR
2467	RP-281	New Record	IV.B2.RP-281	IV.B2-9(R-122)	Core barrel assembly: core barrel axial welds	Stainless steel	Reactor coolant and neutron flux	Loss of fracture toughness #*#due to neutron irradiation embrittlement	Chapter XI.M16A, “PWR Vessel Internals” #*# Expansion Components (identified in the "Structure and Components" column) #*#(for Primary components see AMR Line Item IV.B2.RP-276)	No	PWR
2477	RP-291	New Record	IV.B2.RP-291	IV.B2-24(R-138)	Lower support assembly: lower support column bodies (cast)	Cast austenitic stainless steel	Reactor coolant and neutron flux	Cracking #*#due to irradiation-assisted stress corrosion cracking	Chapter XI.M2, “Water Chemistry,” for PWR primary water, and #*#Chapter XI.M16A, “PWR Vessel Internals” #*#Expansion components (identified in the "Structure and Components" column)#*#(for Primary components see AMR Line Item IV.B2.RP-298)	No	PWR
1844	AP-159	New Record	VII.I.AP-159		Piping, piping components, and piping elements	Copper alloy	Air – outdoor (External)	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components"	No	BWR/PWR

1863	AP-178	New Record	VII.C1. AP-178	Piping, piping components, and piping elements	Concrete	Soil	Cracking, spalling, corrosion of rebar #*#due to exposure of rebar	Chapter XI.M41, "Buried, Underground, and Limited-Access Piping and Tanks"	No	BWR/PWR
1831	SP-114	New Record	VIII.G. SP-114	Piping, piping components, and piping elements	Aluminum	Lubricating oil	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR
1832	SP-115	New Record	VIII.E. SP-115	Tanks	Steel	Soil or Concrete	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M29, “Aboveground Metallic Tanks”	No	BWR/PWR
1833	SP-116	New Record	VIII.G. SP-116	Tanks	Steel	Soil or Concrete	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M29, “Aboveground Metallic Tanks”	No	PWR
1834	AP-149	New Record	VII.G.AP-149	Fire Hydrants	Steel	Air – outdoor	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M27, "Fire Water System"	No	BWR/PWR
1835	AP-150	New Record	VII.G.AP-150	Halon/carbon dioxide fire suppression system piping, piping components, and piping elements	Steel	Air – indoor, uncontrolled (External)	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M26, "Fire Protection"	No	BWR/PWR
1836	AP-151	New Record	VII.J.AP-151	Heat exchanger components	Titanium	Air – indoor, uncontrolled or Air – outdoor	None	None	No	BWR/PWR

1837	AP-152	New Record	VII.C1.AP-152	Heat exchanger components other than tubes	Titanium (ASTM Grades 1,2, 7, 11, or 12 that contains > 5% aluminum or more than 0.20% oxygen or any amount of tin)	Raw water	None	None	No	BWR/PWR
1511	AP-123	New Record	VII.J.AP-123	Piping, piping components, and piping elements	Stainless steel	Air – indoor, uncontrolled (Internal/External)	None	None	No	BWR/PWR
1839	AP-154	New Record	VII.H2.AP-154	Heat exchanger tubes	Aluminum	Lubricating oil	Reduction of heat transfer #*#due to fouling	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, "One-Time Inspection"	No	BWR/PWR
1665	CP-41	New Record	II.A3.CP-41	Seals and gaskets	Elastomers, rubber and other similar materials	Air – indoor, uncontrolled or Air – outdoor	Loss of sealing #*#due to wear, damage, erosion, tear, surface cracks, or other defects	Chapter XI.S4, "10 CFR Part 50, Appendix J "	No	PWR
1829	SP-112	New Record	VIII.I.SP-112	Piping elements	Glass	Gas	None	None	No	BWR/PWR

1842	AP-157	New Record	VII.C1.AP-157	Piping, piping components, and piping elements	Reinforced concrete, asbestos cement	Soil	Cracking #*#due to aggressive chemical attack and leaching; #*#Changes in material properties#*#due to aggressive chemical attack	Chapter XI.M41, "Buried, Underground, and Limited-Access Piping and Tanks"	No	BWR/PWR
1828	SP-111	New Record	VIII.I.SP-111	Piping elements	Glass	Condensation (Internal/External)	None	None	No	BWR/PWR
1845	AP-160	New Record	VII.J.AP-160	Piping, piping components, and piping elements	Titanium	Air – indoor, uncontrolled or Air – outdoor	None	None	No	BWR/PWR
1846	AP-161	New Record	VII.C1.AP-161	Piping, piping components, and piping elements	Titanium (ASTM Grades 1,2, 7, 11, or 12 that contains > 5% aluminum or more than 0.20% oxygen or any amount of tin)	Raw water	None	None	No	BWR/PWR
1847	AP-162	New Record	VII.H2.AP-162	Piping, piping components, and piping elements	Aluminum	Lubricating oil	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
1851	AP-166	New Record	VII.J.AP-166	Piping elements	Glass	Closed-cycle cooling water	None	None	No	BWR/PWR
1852	AP-167	New Record	VII.J.AP-167	Piping elements	Glass	Air – outdoor	None	None	No	BWR/PWR

1856	AP-171	New Record	VII.C1. AP-171	Piping, piping components, and piping elements	Titanium	Soil	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M41, "Buried, Underground, and Limited-Access Piping and Tanks"	No	BWR/PWR
1857	AP-172	New Record	VII.C1. AP-172	Piping, piping components, and piping elements	Super austenitic	Soil	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M41, "Buried, Underground, and Limited-Access Piping and Tanks"	No	BWR/PWR
1858	AP-173	New Record	VII.C1. AP-173	Piping, piping components, and piping elements	Aluminum	Soil	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M41, "Buried, Underground, and Limited-Access Piping and Tanks"	No	BWR/PWR
1859	AP-174	New Record	VII.C1. AP-174	Piping, piping components, and piping elements	Copper	Soil	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M41, "Buried, Underground, and Limited-Access Piping and Tanks"	No	BWR/PWR
1860	AP-175	New Record	VII.C1. AP-175	Piping, piping components, and piping elements	HDPE	Soil	Cracking, blistering, change in color #*#due to water absorption	Chapter XI.M41, "Buried, Underground, and Limited-Access Piping and Tanks"	No	BWR/PWR
1861	AP-176	New Record	VII.C1. AP-176	Piping, piping components, and piping elements	Fiberglass	Soil	Cracking, blistering, change in color #*#due to water absorption	Chapter XI.M41, "Buried, Underground, and Limited-Access Piping and Tanks"	No	BWR/PWR
1862	AP-177	New Record	VII.C1. AP-177	Piping, piping components, and piping elements	Concrete cylinder piping	Soil	Cracking, spalling, corrosion of rebar #*#due to exposure of rebar	Chapter XI.M41, "Buried, Underground, and Limited-Access Piping and Tanks"	No	BWR/PWR

1841	AP-156	New Record	VII.C1. AP-156		Piping, piping components, and piping elements	Reinforced concrete, asbestos cement	Air – outdoor	Cracking #*#due to aggressive chemical attack and leaching; #*#Changes in material properties#*#due to aggressive chemical attack	Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components"	No	BWR/PWR
2574	SP-127	New Record	VIII.A. SP-127		Piping, piping components, and piping elements; tanks	Stainless steel	Air – outdoor	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for ASME Code components or #*#Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components" for non-ASME Code components	Yes, environmental conditions need to be evaluated	BWR/PWR
1510	EP-82	New Record	V.F.EP-82		Piping, piping components, and piping elements	Stainless steel	Air – indoor, uncontrolled (Internal)	None	None	No	BWR/PWR
1597	SP-86	New Record	VIII.I.SP-86		Piping, piping components, and piping elements	Stainless steel	Air – indoor, uncontrolled (Internal)	None	None	No	BWR/PWR
1596	AP-144	New Record	VII.J.AP-144		Piping, piping components, and piping elements	Copper alloy	Air – indoor, uncontrolled (Internal/External)	None	None	No	BWR/PWR
1506	AP-119	New Record	VII.E1. AP-119		Heat exchanger components and tubes	Stainless steel	Treated borated water >60°C (>140°F)	Cracking #*#due to cyclic loading	Chapter XI.M1, "ASME Section XI Inservice Inspection, Subsections IWB, IWC,and IWD"	No	PWR
1669	CP-44	New Record	II.B1.1. CP-44		Steel elements: drywell support skirt	Steel	Concrete	None	None	No	BWR
1502	AP-115	New Record	VII.E1. AP-115	VII.E1-5(A-76)	High-pressure pump, casing	Stainless steel	Treated borated water	Cracking #*#due to cyclic loading	Chapter XI.M1, "ASME Section XI Inservice Inspection, Subsections IWB, IWC,and IWD"	No	PWR

2107	CP-98	New Record	II.A1.C P-98	Steel elements (inaccessible areas): liner; liner anchors; integral attachments	Steel	Air – indoor, uncontrolled	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.S1, “ASME Section XI, Subsection IWE” #*# #*#Chapter XI.S4, “10 CFR Part 50, Appendix J” #*# #*# Additional plant-specific activitities are warranted if loss of material due to corrosion is significant for inaccessible areas (embedded containment steel shell or liner).#*# #*#Loss of material due to corrosion is not significant if the following conditions are satisfied: #*#1. Concrete meeting the requirements of ACI 318 or 349 and the guidance of 201.2R was used for the containment concrete in contact with the embedded containment shell or liner. #*#2. The moisture barrier, at the junction where the shell or liner becomes embedded, is subject to aging management activities in accordance with ASME Section XI, Subsection IWE requirements. #*#3. The concrete is monitored to ensure that it is free of penetrating cracks that provide a path for water seepage to the surface of the containment shell or liner. #*#4. Borated water spills and water ponding on the concrete floor are common and when detected are cleaned up or diverted to a sump in a timely manner. #*# Operating experience has identified significant corrosion in some plants.#*# #*#If any of the	Yes, if corrosion is indicated from the IWE examinations	PWR
1541	AP-134	New Record	VII.J.A P-134	Piping, piping components, and piping elements	Aluminum	Air – dry (Internal/External)	None	None	No	BWR/PWR
1542	AP-135	New Record	VII.J.A P-135	Piping, piping components, and piping elements	Aluminum	Air – indoor, uncontrolled (Internal/External)	None	None	No	BWR/PWR

2570	AP-221	New Record	VII.F4. AP-221	Piping, piping components, and piping elements; tanks	Stainless steel	Air – outdoor	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for ASME Code components or #*#Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components" for non-ASME Code components	Yes, environmental conditions need to be evaluated	BWR/PWR
2571	AP-221	New Record	VII.G.AP-221	Piping, piping components, and piping elements; tanks	Stainless steel	Air – outdoor	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for ASME Code components or #*#Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components" for non-ASME Code components	Yes, environmental conditions need to be evaluated	BWR/PWR
1830	SP-113	New Record	VIII.G. SP-113	Heat exchanger components and tubes	Aluminum	Lubricating oil	Reduction of heat transfer #*#due to fouling	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR
2573	AP-221	New Record	VII.H2. AP-221	Piping, piping components, and piping elements; tanks	Stainless steel	Air – outdoor	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for ASME Code components or #*#Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components" for non-ASME Code components	Yes, environmental conditions need to be evaluated	BWR/PWR
1840	AP-155	New Record	VII.C1. AP-155	Piping, piping components, and piping elements	Reinforced concrete, asbestos cement	Raw water	Cracking #*#due to aggressive chemical attack and leaching; #*#Changes in material properties#*#due to aggressive chemical attack	Chapter XI.M20, "Open-Cycle Cooling Water System"	No	BWR/PWR
1772	TP-34	New Record	III.A5.TP-34	Masonry walls: all	Concrete block	Air – outdoor	Loss of material (spalling, scaling) and cracking #*#due to freeze-thaw	Chapter XI.S5, “Masonry Walls”	No	BWR/PWR

2575	SP-127	New Record	VIII.B1.SP-127		Piping, piping components, and piping elements; tanks	Stainless steel	Air – outdoor	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for ASME Code components or #*#Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components" for non-ASME Code components	Yes, environmental conditions need to be evaluated	BWR/PWR
2576	SP-127	New Record	VIII.B2.SP-127		Piping, piping components, and piping elements; tanks	Stainless steel	Air – outdoor	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for ASME Code components or #*#Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components" for non-ASME Code components	Yes, environmental conditions need to be evaluated	BWR/PWR
2577	SP-127	New Record	VIII.C.SP-127		Piping, piping components, and piping elements; tanks	Stainless steel	Air – outdoor	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for ASME Code components or #*#Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components" for non-ASME Code components	Yes, environmental conditions need to be evaluated	BWR/PWR
1279	LP-31	New Record	VI.A.LP-31	VI.A-8(LP-01)	Fuse holders (not part of active equipment): metallic clamps	Various metals used for electrical connections	Air – indoor, controlled	Increased resistance of connection #*#due to fatigue caused by frequent manipulation or vibration	Chapter XI.E5, "Fuse Holders" #*#No aging management program is required for those applicants who can demonstrate these fuse holders are located in an environment that does not subject them to environmental aging mechanisms or fatigue caused by frequent manipulation or vibration	No	BWR/PWR
1818	EP-87	New Record	V.F.EP-87		Piping elements	Glass	Air – outdoor	None	None	No	BWR/PWR
1821	SP-104	New Record	VIII.I.SP-104		Piping, piping components, and piping elements	Copper alloy <15% Zn	Air with borated water leakage	None	None	No	BWR/PWR
1822	SP-105	New Record	VIII.I.SP-105		Piping elements	Glass	Air with borated water leakage	None	None	No	BWR/PWR
1823	SP-106	New Record	VIII.I.SP-106		Piping, piping components, and piping elements	Stainless steel	Air – indoor, uncontrolled (Internal)	None	None	No	BWR/PWR

1825	SP-108	New Record	VIII.I.SP-108	Piping elements	Glass	Air – outdoor	None	None	No	BWR/PWR
1826	SP-109	New Record	VIII.I.SP-109	Piping elements	Glass	Closed-cycle cooling water	None	None	No	BWR/PWR
1827	SP-110	New Record	VIII.I.SP-110	Piping, piping components, and piping elements	Stainless steel	Condensation	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components"	No	BWR/PWR
2572	AP-221	New Record	VII.H1.AP-221	Piping, piping components, and piping elements; tanks	Stainless steel	Air – outdoor	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for ASME Code components or #*#Chapter XI.M36, "External Surfaces Monitoring of Mechanical Components" for non-ASME Code components	Yes, environmental conditions need to be evaluated	BWR/PWR
2015	CP-114	New Record	II.B1.2.CP-114	Steel elements (inaccessible areas): support skirt	Steel	Concrete	None	None	No	BWR
1984	CP-97	New Record	II.A2.CP-97	Concrete (inaccessible areas): dome; wall; basemat; ring girders; buttresses; reinforcing steel	Concrete; steel	Air – indoor, uncontrolled or Air – outdoor	Cracking; loss of bond; and loss of material (spalling, scaling) #*#due to corrosion of embedded steel	Chapter XI.S2, “ASME Section XI, Subsection IWL,” or #*#Chapter XI.S6, "Structure Monitoring"	No	PWR

1987	CP-98	New Record	II.B3.2. CP-98	Steel elements (inaccessible areas): liner; liner anchors; integral attachments	Steel	Air – indoor, uncontrolled	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.S1, “ASME Section XI, Subsection IWE” #*#Chapter XI.S4, “10 CFR Part 50, Appendix J” #*#Additional plant-specific activitities are warranted if loss of material due to corrosion is significant for inaccessible areas (embedded containment steel shell or liner).#*#Loss of material due to corrosion is not significant if the following conditions are satisfied: #*#1. Concrete meeting the requirements of ACI 318 or 349 and the guidance of 201.2R was used for the containment concrete in contact with the embedded containment shell or liner. #*#2. The concrete is monitored to ensure that it is free of penetrating cracks that provide a path for water seepage to the surface of the containment shell or liner. #*#3. The moisture barrier, at the junction where the shell or liner becomes embedded, is subject to aging management activities in accordance with ASME Section XI, Subsection IWE requirements. #*#4. Borated water spills and water ponding on the concrete floor are not common and when detected are cleaned up in a timely manner. #*# Operating experience has identified significant corrosion in some plants.#*#If any of the above conditions cannot be satisfied, then a	Yes, if corrosion is indicated from the IWE examinations	BWR

1988	CP-99	New Record	II.B1.2. CP-99	Concrete (inaccessible areas): containment; wall; basemat	Concrete	Any environment	Cracking #*#due to expansion from reaction with aggregates	Further evaluation is required to determine if a plant-specific aging management program is needed to manage cracking and expansion due to reaction with aggregate of concrete in Inaccessible Areas. A plant-specific aging management program is not required if (1) as described in NUREG-1557, investigations, tests, and petrographic examinations of aggregates performed in accordance with ASTM C295 and other ASTM reactivity tests, as required, can demonstrate that those aggregates do not adversely react within concrete, or (2) For potentially reactive aggregates, aggregate concrete reaction is not significant if it is demonstrated that the in-place concrete can perform its intended function.	Yes, if concrete is not constructed as stated	BWR
1431	AP-96	New Record	VII.J.A P-96	Piping elements	Glass	Air with borated water leakage	None	None	No	BWR/PWR
1991	CP-102	New Record	II.A1.C P-102	Concrete (inaccessible areas): dome; wall; basemat; ring girders; buttresses	Concrete	Water – flowing	Increase in porosity and permeability #*#due to leaching of calcium hydroxide and carbonation	Further evaluation is required to determine if a plant-specific aging management program is needed to manage increase in porosity, and permeability due to leaching of calcium hydroxide and carbonation of concrete in Inaccessible Areas. A plant-specific aging management program is not required if (1) There is evidence in the accessible areas that the flowing water has not caused leaching and carbonation, or (2) Evaluation determined that the observed leaching of calcium hydroxide and carbonation in accessible areas has no impact on the intended function of the concrete structure.	Yes, if leaching is observed in accessible areas that impact intended function	PWR

1993	CP-104	New Record	II.A2.C P-104	Concrete (inaccessible areas): basemat	Concrete	Any environment	Cracking #*#due to expansion from reaction with aggregates	Further evaluation is required to determine if a plant-specific aging management program is needed to manage cracking and expansion due to reaction with aggregate of concrete in Inaccessible Areas. A plant-specific aging management program is not required if (1) as described in NUREG-1557, investigations, tests, and petrographic examinations of aggregates performed in accordance with ASTM C295 and other ASTM reactivity tests, as required, can demonstrate that those aggregates do not adversely react within concrete, or (2) For potentially reactive aggregates, aggregate concrete reaction is not significant if it is demonstrated that the in-place concrete can perform its intended function.	Yes, if concrete is not constructed as stated	PWR
1440	SP-70	New Record	VIII.I.S P-70	Piping elements	Glass	Closed-cycle cooling water	None	None	No	BWR/PWR
1433	EP-66	New Record	V.F.EP-66	Piping elements	Glass	Condensation (Internal/External)	None	None	No	BWR/PWR
1434	AP-97	New Record	VII.J.A P-97	Piping elements	Glass	Condensation (Internal/External)	None	None	No	BWR/PWR

1982	TP-110	New Record	III.A6.TP-110	Groups 6 - concrete (inaccessible areas): exterior above- and below-grade; foundation; interior slab	Concrete	Air – outdoor	Loss of material (spalling, scaling) and cracking #*#due to freeze-thaw	Further evaluation is required for plants that are located in moderate to severe weathering conditions (weathering index >100 day-inch/yr) (NUREG-1557) to determine if a plant-specific aging management program is needed. A plant-specific aging management program is not required if documented evidence confirms that the existing concrete had air entrainment content (as per Table CC-2231-2 of the ASME Section III Division 2), and subsequent inspections of accessible areas did not exhibit degradation related to freeze-thaw. Such inspections should be considered a part of the evaluation. If this condition is not satisfied, then a plant-specific aging management program is required to manage loss of material (spalling, scaling) and cracking due to freeze-thaw of concrete in inaccessible areas. #*#The weathering index for the continental US is shown in ASTM C33-90, Fig. 1.	Yes, for plants located in moderate to severe weathering conditions	BWR/PWR
2017	CP-117	New Record	II.B2.1.CP-117	Steel elements: downcomer pipes	Steel	Air – indoor, uncontrolled or Treated water	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.S1, “ASME Section XI, Subsection IWE”	No	BWR

1899	CP-70	New Record	II.A2.CP-70	Concrete (inaccessible areas): basemat	Concrete	Air – outdoor or Ground water/soil	Loss of material (spalling, scaling) and cracking #*#due to freeze-thaw	Further evaluation is required for plants that are located in moderate to severe weathering conditions (weathering index >100 day-inch/yr) (NUREG-1557) to determine if a plant-specific aging management program is needed. A plant-specific aging management program is not required if documented evidence confirms that the existing concrete had air entrainment content (as per Table CC-2231-2 of the ASME Section III Division 2), and subsequent inspections of accessible areas did not exhibit degradation related to freeze-thaw. Such inspections should be considered a part of the evaluation. If this condition is not satisfied, then a plant-specific aging management program is required to manage loss of material (spalling, scaling) and cracking due to freeze-thaw of concrete in inaccessible areas. #*#The weathering index for the continental US is shown in ASTM C33-90, Fig. 1.	Yes, for plants located in moderate to severe weathering conditions	PWR
1870	RP-182	New Record	IV.B1.RP-182	Reactor vessel internals components	PH martensitic stainless steel (17-4PH and 15-5PH); martensitic stainless steel (SS 403, 410, 431, etc.)	Reactor coolant >250°C (>482°F) and neutron flux	Loss of fracture toughness #*#due to thermal aging, neutron irradiation embrittlement	Chapter XI.M9, "BWR Vessel Internals"	No	BWR

2014	CP-113	New Record	II.B1.2.CP-113	Steel elements (inaccessible areas): drywell shell; drywell head; and drywell shell in sand pocket regions	Steel	Air – indoor, uncontrolled or Concrete	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.S1, “ASME Section XI, Subsection IWE,” and #*#Chapter XI.S4, “10 CFR Part 50, Appendix J”	Yes, if corrosion is indicated from the IWE examinations	BWR
1838	AP-153	New Record	VII.C1.AP-153	Heat exchanger tubes	Titanium	Raw water	Reduction of heat transfer #*#due to fouling	Chapter XI.M20, "Open-Cycle Cooling Water System"	No	BWR/PWR
2013	CP-46	New Record	II.B1.2.CP-46	Steel elements (accessible areas): suppression chamber; drywell; drywell head; embedded shell; region shielded by diaphragm floor (as applicable)	Steel	Air – indoor, uncontrolled or Treated water	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.S1, “ASME Section XI, Subsection IWE,” and #*#Chapter XI.S4, “10 CFR Part 50, Appendix J”	No	BWR
1436	EP-67	New Record	V.F.EP-67	Piping elements	Glass	Gas	None	None	No	BWR/PWR
1437	AP-98	New Record	VII.J.AP-98	Piping elements	Glass	Gas	None	None	No	BWR/PWR
2011	CP-110	New Record	II.B1.1.CP-110	Concrete (inaccessible areas): containment; wall; basemat	Concrete	Water – flowing	Increase in porosity and permeability #*#due to leaching of calcium hydroxide and carbonation	Further evaluation is required to determine if a plant-specific aging management program is needed to manage increase in porosity, and permeability due to leaching of calcium hydroxide and carbonation of concrete in Inaccessible Areas. A plant-specific aging management program is not required if (1) There is evidence in the accessible areas that the flowing water has not caused leaching and carbonation, or (2) Evaluation determined that the observed leaching of calcium hydroxide and carbonation in accessible areas has no impact on the intended function of the concrete structure.	Yes, if leaching is observed in accessible areas that impact intended function	BWR

2010	CP-109	New Record	II.B1.1. CP-109	Steel elements: torus ring girders; downcomers;	Steel	Air – indoor, uncontrolled or Treated water	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.S1, “ASME Section XI, Subsection IWE” #*# #*#Plant specific aging management program is required if plant operating experience identified significant corrosion of the torus ring girders and downcomers. If protective coating is credited for preventing corrosion of the torus shell, the coating should be included in scope of license renewal and subject to aging management review.	Yes, if corrosion is significant	BWR
1438	SP-69	New Record	VIII.I.SP-69	Piping elements	Glass	Gas	None	None	No	BWR/PWR
1439	EP-68	New Record	V.F.EP-68	Piping elements	Glass	Closed-cycle cooling water	None	None	No	BWR/PWR
1435	SP-68	New Record	VIII.I.SP-68	Piping elements	Glass	Condensation	None	None	No	BWR/PWR
1413	RP-166	New Record	IV.C2. RP-166	Closure bolting	Steel	Air – indoor, uncontrolled	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M18, "Bolting Integrity"	No	PWR

2106	CP-98	New Record	II.A2.CP-98	Steel elements (inaccessible areas): liner; liner anchors; integral attachments	Steel	Air – indoor, uncontrolled	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.S1, “ASME Section XI, Subsection IWE” #*#Chapter XI.S4, “10 CFR Part 50, Appendix J” #*#Additional plant-specific activitities are warranted if loss of material due to corrosion is significant for inaccessible areas (embedded containment steel shell or liner).#*#Loss of material due to corrosion is not significant if the following conditions are satisfied: #*#1. Concrete meeting the requirements of ACI 318 or 349 and the guidance of 201.2R was used for the containment concrete in contact with the embedded containment shell or liner. #*#2. The moisture barrier, at the junction where the shell or liner becomes embedded, is subject to aging management activities in accordance with ASME Section XI, Subsection IWE requirements. #*#3. The concrete is monitored to ensure that it is free of penetrating cracks that provide a path for water seepage to the surface of the containment shell or liner. #*#4. Borated water spills and water ponding on the concrete floor are common and when detected are cleaned up or diverted to a sump in a timely manner. #*# Operating experience has identified significant corrosion in some plants.#*#If any of the	Yes, if corrosion is indicated from the IWE examinations	PWR
1890	RP-185	New Record	IV.D2.RP-185	Tube-to-tube sheet welds	Nickel alloy	Reactor coolant	Cracking #*#due to stress corrosion cracking, primary water stress corrosion cracking	Chapter XI.M2, “Water Chemistry” for PWR primary water	No	PWR

2098	CP-122	New Record	II.B3.2.CP-122	Concrete (inaccessible areas): dome; wall; basemat	Concrete	Water – flowing	Increase in porosity and permeability #*#due to leaching of calcium hydroxide and carbonation	Further evaluation is required to determine if a plant-specific aging management program is needed to manage increase in porosity, and permeability due to leaching of calcium hydroxide and carbonation of concrete in Inaccessible Areas. A plant-specific aging management program is not required if (1) There is evidence in the accessible areas that the flowing water has not caused leaching and carbonation, or (2) Evaluation determined that the observed leaching of calcium hydroxide and carbonation in accessible areas has no impact on the intended function of the concrete structure.	Yes, if leaching is observed in accessible areas that impact intended function	BWR
2022	CP-121	New Record	II.B3.1.CP-121	Concrete (inaccessible areas): dome; wall; basemat	Concrete	Any environment	Cracking #*#due to expansion from reaction with aggregates	Further evaluation is required to determine if a plant-specific aging management program is needed to manage cracking and expansion due to reaction with aggregate of concrete in Inaccessible Areas. A plant-specific aging management program is not required if (1) as described in NUREG-1557, investigations, tests, and petrographic examinations of aggregates performed in accordance with ASTM C295 and other ASTM reactivity tests, as required, can demonstrate that those aggregates do not adversely react within concrete, or (2) For potentially reactive aggregates, aggregate concrete reaction is not significant if it is demonstrated that the in-place concrete can perform its intended function.	Yes, if concrete is not constructed as stated	BWR

2018	CP-117	New Record	II.B2.2.CP-117	Steel elements: downcomer pipes	Steel	Air – indoor, uncontrolled or Treated water	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.S1, “ASME Section XI, Subsection IWE”	No	BWR
1895	CP-67	New Record	II.A1.CP-67	Concrete (inaccessible areas): dome; wall; basemat; ring girders; buttresses	Concrete	Any environment	Cracking #*#due to expansion from reaction with aggregates	Further evaluation is required to determine if a plant-specific aging management program is needed to manage cracking and expansion due to reaction with aggregate of concrete in Inaccessible Areas. A plant-specific aging management program is not required if (1) as described in NUREG-1557, investigations, tests, and petrographic examinations of aggregates performed in accordance with ASTM C295 and other ASTM reactivity tests, as required, can demonstrate that those aggregates do not adversely react within concrete, or (2) For potentially reactive aggregates, aggregate concrete reaction is not significant if it is demonstrated that the in-place concrete can perform its intended function.	Yes, if concrete is not constructed as stated	PWR
1408	RP-161	New Record	IV.D2.RP-161	Steam generator: Tube bundle wrapper and associated supports and mounting hardware	Steel	Secondary feedwater or steam	Loss of material #*#due to erosion, general, pitting, and crevice corrosion	Chapter XI.M19, “Steam Generators,” and #*#Chapter XI.M2, “Water Chemistry” for PWR secondary water	No	PWR
1432	SP-67	New Record	VIII.I.SP-67	Piping elements	Glass	Air with borated water leakage	None	None	No	BWR/PWR
1412	RP-165	New Record	IV.A1.RP-165	Top head enclosure: closure studs and nuts	High-strength, low-alloy steel	Air with reactor coolant leakage	Loss of material #*#due to general, pitting, and crevice corrosion, or wear	Chapter XI.M3, “Reactor Head Closure Stud Bolting”	No	BWR

1981	TP-109	New Record	III.A6.TP-109	Groups 6 - concrete (inaccessible areas): exterior above- and below-grade; foundation; interior slab	Concrete	Water – flowing	Increase in porosity and permeability #*#due to leaching of calcium hydroxide and carbonation	Further evaluation is required to determine if a plant-specific aging management program is needed to manage increase in porosity, and permeability due to leaching of calcium hydroxide and carbonation of concrete in Inaccessible Areas. A plant-specific aging management program is not required if (1) There is evidence in the accessible areas that the flowing water has not caused leaching and carbonation, or (2) Evaluation determined that the observed leaching of calcium hydroxide and carbonation in accessible areas has no impact on the intended function of the concrete structure.	Yes, if leaching is observed in accessible areas that impact intended function	BWR/PWR
1414	RP-167	New Record	IV.C2.RP-167	Closure bolting	Steel	Air with borated water leakage	Loss of material #*#due to boric acid corrosion	Chapter XI.M10, “Boric Acid Corrosion”	No	PWR
1979	TP-107	New Record	III.A6.TP-107	Groups 6 - concrete (inaccessible areas): all	Concrete	Ground water/soil	Increase in porosity and permeability; cracking; loss of material (spalling, scaling) #*#due to aggressive chemical attack	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
1918	CP-89	New Record	II.B3.2.CP-89	Concrete (inaccessible areas): dome; wall; basemat; reinforcing steel	Concrete; steel	Air – indoor, uncontrolled or Air – outdoor	Cracking; loss of bond; and loss of material (spalling, scaling) #*#due to corrosion of embedded steel	Chapter XI.S2, “ASME Section XI, Subsection IWL,” or #*#Chapter XI.S6, "Structure Monitoring"	No	BWR

1916	CP-87	New Record	II.B3.2. CP-87	Concrete (accessible areas): dome; wall; basemat; ring girders; buttresses	Concrete	Air – indoor, uncontrolled or Air – outdoor	Increase in porosity and permeability; cracking; loss of material (spalling, scaling) #*#due to aggressive chemical attack	Chapter XI.S2, “ASME Section XI, Subsection IWL”	No	BWR
1409	RP-162	New Record	IV.D2. RP-162	Steam generator structural: tube support plate; supports/mounting hardware	Steel	Secondary feedwater or steam	Loss of material #*#due to erosion, general, pitting, and crevice corrosion	Chapter XI.M19, “Steam Generators,” and #*#Chapter XI.M2, “Water Chemistry” for PWR secondary water	No	PWR
1976	TP-104	New Record	III.A6.TP-104	Groups 6 - concrete (inaccessible areas): all	Concrete	Air – indoor, uncontrolled or Air – outdoor or Ground water/soil	Cracking; loss of bond; and loss of material (spalling, scaling) #*#due to corrosion of embedded steel	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
1933	TP-67	New Record	III.A2.TP-67	Groups 1-3, 5, 7-9 - concrete (inaccessible areas): exterior above- and below-grade; foundation	Concrete	Water – flowing	Increase in porosity and permeability; loss of strength #*#due to leaching of calcium hydroxide and carbonation	Further evaluation is required to determine if a plant-specific aging management program is needed to manage increase in porosity, and permeability due to leaching of calcium hydroxide and carbonation of concrete in Inaccessible Areas. A plant-specific aging management program is not required if (1) There is evidence in the accessible areas that the flowing water has not caused leaching and carbonation, or (2) Evaluation determined that the observed leaching of calcium hydroxide and carbonation in accessible areas has no impact on the intended function of the concrete structure.	Yes, if leaching is observed in accessible areas that impact intended function	BWR

1902	CP-72	New Record	II.A2.C P-72	Concrete (accessible areas): basemat	Concrete	Ground water/soil	Increase in porosity and permeability; cracking; loss of material (spalling, scaling) #*#due to aggressive chemical attack	Chapter XI.S2, “ASME Section XI, Subsection IWL,” or #*#Chapter XI.S6, "Structure Monitoring"	No	PWR
1980	TP-108	New Record	III.A1.T P-108	Groups 1-3, 5, 7-9:Concrete (inaccessible areas): foundation	Concrete	Air – outdoor	Loss of material (spalling, scaling) and cracking #*#due to freeze-thaw	Further evaluation is required for plants that are located in moderate to severe weathering conditions (weathering index >100 day-inch/yr) (NUREG-1557) to determine if a plant-specific aging management program is needed. A plant-specific aging management program is not required if documented evidence confirms that the existing concrete had air entrainment content (as per Table CC-2231-2 of the ASME Section III Division 2), and subsequent inspections of accessible areas did not exhibit degradation related to freeze-thaw. Such inspections should be considered a part of the evaluation. If this condition is not satisfied, then a plant-specific aging management program is required to manage loss of material (spalling, scaling) and cracking due to freeze-thaw of concrete in inaccessible areas. #*#The weathering index for the continental US is shown in ASTM C33-90, Fig. 1.	Yes, for plants located in moderate to severe weathering conditions	BWR/PWR
1430	EP-65	New Record	V.F.EP-65	Piping elements	Glass	Air with borated water leakage	None	None	No	BWR/PWR

1903	CP-73	New Record	II.B3.1. CP-73		Concrete (inaccessible areas): dome; wall; basemat	Concrete	Air – indoor, uncontrolled or Air – outdoor or Ground water/soil	Increase in porosity and permeability; cracking; loss of material (spalling, scaling) #*#due to aggressive chemical attack	Chapter XI.S2, “ASME Section XI, Subsection IWL,” or #*#Chapter XI.S6, "Structure Monitoring"	No	BWR
1914	CP-83	New Record	II.B3.1. CP-83		Concrete (inaccessible areas): basemat, concrete fill-in annulus	Concrete	Any environment	Cracking #*#due to expansion from reaction with aggregates	Further evaluation is required to determine if a plant-specific aging management program is needed to manage cracking and expansion due to reaction with aggregate of concrete in Inaccessible Areas. A plant-specific aging management program is not required if (1) as described in NUREG-1557, investigations, tests, and petrographic examinations of aggregates performed in accordance with ASTM C295 and other ASTM reactivity tests, as required, can demonstrate that those aggregates do not adversely react within concrete, or (2) For potentially reactive aggregates, aggregate concrete reaction is not significant if it is demonstrated that the in-place concrete can perform its intended function.	Yes, if concrete is not constructed as stated	BWR
1280	RP-36	R-01	IV.D1. RP-36	IV.D1-4(R-01)	Instrument penetrations and primary side nozzles; safe ends; welds	Steel (with nickel-alloy cladding); nickel alloy	Reactor coolant	Cracking #*#due to primary water stress corrosion cracking	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for Class 1 components, and #*#Chapter XI.M2, “Water Chemistry” for PWR primary water, and #*#Chapter XI.M11B, “Cracking of Nickel-Alloy Components in the Reactor Coolant Pressure Boundary”	No	PWR

1281	RP-36	R-01	IV.D2. RP-36	IV.D2-2(R-01)	Instrument penetrations and primary side nozzles; safe ends; welds	Steel (with nickel-alloy cladding); nickel alloy	Reactor coolant	Cracking #*#due to primary water stress corrosion cracking	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for Class 1 components, and #*#Chapter XI.M2, “Water Chemistry” for PWR primary water, and #*#Chapter XI.M11B, “Cracking of Nickel-Alloy Components in the Reactor Coolant Pressure Boundary”	No	PWR
2348	RP-235	R-02	IV.C2. RP-235	IV.C2-1(R-02)	Class 1 piping, fittings and branch connections < NPS 4	Stainless steel; steel with stainless steel cladding	Reactor coolant	Cracking #*#due to stress corrosion cracking, intergranular stress corrosion cracking (for stainless steel only), and thermal, mechanical, and vibratory loading	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for Class 1 components, and #*#Chapter XI.M2, “Water Chemistry,” #*#XI.M35, "One-Time Inspection of ASME Code Class 1 Small-bore Piping"	No	PWR
2341	RP-230	R-03	IV.C1. RP-230	IV.C1-1(R-03)	Class 1 piping, fittings and branch connections < NPS 4	Steel; stainless steel	Reactor coolant	Cracking #*#due to stress corrosion cracking, intergranular stress corrosion cracking (for stainless steel only), and thermal, mechanical, and vibratory loading	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for Class 1 components, and #*#Chapter XI.M2, “Water Chemistry,” #*#XI.M35, "One-Time Inspection of ASME Code Class 1 Small-bore Piping"	No	BWR

1282	RP-37	R-06	IV.C2. RP-37	IV.C2-21(R-06)	Pressurizer instrumentation penetrations; heater sheaths and sleeves; heater bundle diaphram plate; manways and flanges	Nickel alloy; nickel-alloy cladding	Reactor coolant	Cracking #*#due to primary water stress corrosion cracking	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for Class 1 components, and #*#Chapter XI.M2, “Water Chemistry” for PWR primary water, and #*#Chapter XI.M11B, “Cracking of Nickel-Alloy Components in the Reactor Coolant Pressure Boundary”	No	PWR
2344	RP-232	R-07	IV.D1. RP-232	IV.D1-1(R-07)	Steam generator: primary nozzles; nozzle to safe end welds; manways; flanges	Stainless steel; steel with stainless steel cladding	Reactor coolant	Cracking #*#due to stress corrosion cracking	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for Class 1 components, and #*#Chapter XI.M2, “Water Chemistry”	No	PWR
2343	RP-344	R-07	IV.C2. RP-344	IV.C2-2(R-07)	Class 1 piping, piping components, and piping elements	Stainless steel; steel with stainless steel cladding	Reactor coolant	Cracking #*#due to stress corrosion cracking	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for Class 1 components, and #*#Chapter XI.M2, “Water Chemistry”	No	PWR
2290	RP-219	R-101	IV.B1. RP-219	IV.B1-11(R-101)	Jet pump assemblies: castings	Cast austenitic stainless steel	Reactor coolant >250°C (>482°F) and neutron flux	Loss of fracture toughness #*#due to thermal aging, neutron irradiation embrittlement	Chapter XI.M9, "BWR Vessel Internals"	No	BWR
2291	RP-220	R-103	IV.B1. RP-220	IV.B1-9(R-103)	Fuel supports and control rod drive assemblies: orificed fuel support	Cast austenitic stainless steel	Reactor coolant >250°C (>482°F) and neutron flux	Loss of fracture toughness #*#due to thermal aging, neutron irradiation embrittlement	Chapter XI.M9, "BWR Vessel Internals"	No	BWR
1283	RP-38	R-12	IV.C2. RP-38	IV.C2-8(R-12)	Closure bolting	Steel; stainless steel	Air with reactor coolant leakage	Loss of preload #*#due to thermal effects, gasket creep, and self-loosening	Chapter XI.M18, "Bolting Integrity"	No	PWR

2342	RP-231	R-14	IV.C2.RP-231	IV.C2-22(R-14)	Pressurizer relief tank: tank shell and heads; flanges; nozzles	Stainless steel; steel with stainless steel cladding	Treated borated water >60°C (>140°F)	Cracking #*#due to stress corrosion cracking	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for ASME Code components, and #*#Chapter XI.M2, “Water Chemistry”	No	PWR
1284	RP-39	R-16	IV.C1.RP-39	IV.C1-6(R-16)	Isolation condenser components	Steel; stainless steel	Reactor coolant	Loss of material #*#due to general (steel only), pitting, and crevice corrosion	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD,” and #*#Chapter XI.M2, “Water Chemistry”	No	BWR
1401	RP-153	R-224	IV.D2.RP-153	IV.D2-8(R-224)	Steam generator components: shell assembly	Steel	Secondary feedwater or steam	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M2, “Water Chemistry” for PWR secondary water, and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR
1286	RP-41	R-24	IV.C2.RP-41	IV.C2-17(R-24)	Pressurizer: spray head	Stainless Steel	Reactor coolant	Cracking #*#due to stress corrosion cracking	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR
1285	RP-40	R-24	IV.C2.RP-40	IV.C2-17(R-24)	Pressurizer: spray head	Nickel alloy	Reactor coolant	Cracking #*#due to stress corrosion cracking, primary water stress corrosion cracking	Chapter XI.M2, “Water Chemistry” for PWR primary water, and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR
1287	RP-42	R-26	IV.C1.RP-42	IV.C1-12(R-26)	Closure bolting	Steel; stainless steel	Air with reactor coolant leakage	Loss of material #*#due to general (steel only), pitting, and crevice corrosion or wear	Chapter XI.M18, "Bolting Integrity"	No	BWR

1288	RP-43	R-27	IV.C1. RP-43	IV.C1-10(R-27)	Closure bolting	Steel; stainless steel	Air	Loss of preload #*#due to thermal effects, gasket creep, and self-loosening	Chapter XI.M18, "Bolting Integrity"	No	BWR
1289	RP-44	R-28	IV.C1. RP-44	IV.C1-11(R-28)	Pump and valve closure bolting	Steel; stainless steel	System temperature up to 288°C (550°F)	Cumulative fatigue damage #*#due to fatigue	Fatigue is a TLAA evaluated for the period of extended operation; check ASME Code limits for allowable cycles (less than 7000 cycles) of thermal stress range. (SRP Sec 4.3 "Metal Fatigue," for acceptable methods to comply with 10 CFR 54.21(c)(1))	Yes, TLAA	BWR
1292	RP-46	R-32	IV.D2. RP-46	IV.D2-6(R-32)	Closure bolting	Steel; stainless steel	Air – indoor, uncontrolled (External)	Loss of preload #*#due to thermal effects, gasket creep, and self-loosening	Chapter XI.M18, "Bolting Integrity"	No	PWR
1291	RP-46	R-32	IV.D1. RP-46	IV.D1-10(R-32)	Closure bolting	Steel; stainless steel	Air – indoor, uncontrolled (External)	Loss of preload #*#due to thermal effects, gasket creep, and self-loosening	Chapter XI.M18, "Bolting Integrity"	No	PWR

2613	RP-368	R-34	IV.D1.RP-368	IV.D1-12(R-34)	Steam generator components: upper and lower shell; transition cone; new transition cone closure weld	Steel	Secondary feedwater or steam	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for Class 2 components, and #*#Chapter XI.M2, “Water Chemistry” for PWR secondary water #*#As noted in NRC IN 90-04, if general and pitting corrosion of the shell exists, Chapter XI.M1 methods may not be sufficient to detect general and pitting corrosion (and the resulting corrosion-fatigue cracking), and additional inspection procedures are to be developed. This issue is limited to Westinghouse Model 44 and 51 Steam Generators where a high stress region exists at the shell to transition cone weld. The new transition is only applicable to replacement recirculating steam generators.	Yes, detection of aging effects is to be evaluated	PWR
1293	RP-47	R-35	IV.D2.RP-47	IV.D2-4(R-35)	Primary side components: upper and lower heads, tube sheets and tube-to-tube sheet welds exposed to reactor coolant	Steel (with stainless steel or nickel-alloy cladding)	Reactor coolant	Cracking #*#due to stress corrosion cracking, primary water stress corrosion cracking	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for Class 1 components, and #*#Chapter XI.M2, “Water Chemistry”	No	PWR
2102	RP-189	R-40	IV.D2.RP-189	IV.D2-12(R-40)	Tube plugs	Nickel alloy	Reactor coolant	Cracking #*#due to primary water stress corrosion cracking	Chapter XI.M19, “Steam Generators,” and #*#Chapter XI.M2, “Water Chemistry,” for PWR primary water	No	PWR
2101	RP-189	R-40	IV.D1.RP-189	IV.D1-18(R-40)	Tube plugs	Nickel alloy	Reactor coolant	Cracking #*#due to primary water stress corrosion cracking	Chapter XI.M19, “Steam Generators,” and #*#Chapter XI.M2, “Water Chemistry,” for PWR primary water	No	PWR

1294	RP-48	R-41	IV.D1. RP-48	IV.D1-16(R-41)	Steam generator structural: tube support lattice bars	Steel	Secondary feedwater or steam	Wall thinning #*#due to flow-accelerated corrosion and general corrosion	Chapter XI.M19, “Steam Generators,” and #*#Chapter XI.M2, “Water Chemistry” for PWR secondary water	No	PWR
2346	RP-233	R-49	IV.D2. RP-233	IV.D2-18(R-49)	Tubes and sleeves	Nickel alloy	Secondary feedwater or steam	Loss of material #*#due to fretting and wear	Chapter XI.M19, “Steam Generators”	No	PWR
2345	RP-233	R-49	IV.D1. RP-233	IV.D1-24(R-49)	Tubes and sleeves	Nickel alloy	Secondary feedwater or steam	Loss of material #*#due to fretting and wear	Chapter XI.M19, “Steam Generators”	No	PWR
1295	RP-49	R-51	IV.D1. RP-49	IV.D1-26(R-51)	Upper assembly and separators including: feedwater inlet ring and support	Steel	Secondary feedwater or steam	Wall thinning #*#due to flow-accelerated corrosion	Chapter XI.M19, “Steam Generators,” and #*#Chapter XI.M2, “Water Chemistry” for PWR secondary water	No	PWR
1296	RP-50	R-59	IV.A1. RP-50	IV.A1-11(R-59)	Top head enclosure (without cladding): top head; nozzles (vent, top head spray or RCIC, and spare)	Steel	Reactor coolant	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR
1297	RP-51	R-60	IV.A1. RP-51	IV.A1-9(R-60)	Top head enclosure: closure studs and nuts	High-strength, low-alloy steel	Air with reactor coolant leakage	Cracking #*#due to stress corrosion cracking, intergranular stress corrosion cracking	Chapter XI.M3, “Reactor Head Closure Stud Bolting”	No	BWR
2338	RP-227	R-63	IV.A1. RP-227	IV.A1-14(R-63)	Vessel shell (including applicable beltline) components: shell; shell plates or forgings; shell welds; nozzle plates or forgings; nozzle welds	Steel (with or without cladding)	Reactor coolant and neutron flux	Loss of fracture toughness #*#due to neutron irradiation embrittlement	Chapter XI.M31, “Reactor Vessel Surveillance”	Yes, plant specific or integrated surveillence program	BWR

2614	RP-369	R-69	IV.A1.RP-369	IV.A1-5(R-69)	Penetrations: instrumentation; standby liquid control	Stainless steel; nickel alloy	Reactor coolant	Cracking #*#due to stress corrosion cracking, intergranular stress corrosion cracking, cyclic loading	Chapter XI.M8, “BWR Penetrations,” and #*#Chapter XI.M2, “Water Chemistry”	No	BWR
1298	RP-52	R-71	IV.A2.RP-52	IV.A2-2(R-71)	Closure head: stud assembly	High-strength, low-alloy steel	Air with reactor coolant leakage	Cracking #*#due to stress corrosion cracking	Chapter XI.M3, “Reactor Head Closure Stud Bolting”	No	PWR
1299	RP-53	R-72	IV.A2.RP-53	IV.A2-3(R-72)	Closure head: stud assembly	High-strength, low-alloy steel	Air with reactor coolant leakage	Loss of material #*#due to general, pitting, and crevice corrosion, or wear	Chapter XI.M3, “Reactor Head Closure Stud Bolting”	No	PWR
1300	RP-54	R-73	IV.A2.RP-54	IV.A2-4(R-73)	Closure head: stud assembly	High-strength, low-alloy steel	Air with reactor coolant leakage	Cumulative fatigue damage #*#due to fatigue	Fatigue is a time-limited aging analysis (TLAA) to be evaluated for the period of extended operation. See the SRP, Section 4.3 “Metal Fatigue,” for acceptable methods for meeting the requirements of 10 CFR 54.21(c)(1).	Yes, TLAA	PWR
1891	RP-186	R-75	IV.A2.RP-186	IV.A2-9(R-75)	Control rod drive head penetration: nozzle welds	Nickel alloy	Reactor coolant	Cracking #*#due to primary water stress corrosion cracking	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for Class 1 components, and #*#Chapter XI.M2, “Water Chemistry” for PWR primary water, and #*#Chapter XI.M11B, “Cracking of Nickel-Alloy Components in the Reactor Coolant Pressure Boundary”	No	PWR

1301	RP-55	R-76	IV.A2. RP-55	IV.A2-11(R-76)	Control rod drive head penetration: pressure housing	Stainless steel; nickel alloy	Reactor coolant	Cracking #*#due to stress corrosion cracking, primary water stress corrosion cracking	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for Class 1 components, #*#Chapter XI.M2, “Water Chemistry” for PWR primary water, and #*# for nickel alloy Chapter XI.M11B, "Cracking of Nickel-Alloy Components in the Reactor Coolant Pressure Boundary"	No	PWR
1302	RP-56	R-80	IV.A2. RP-56	IV.A2-8(R-80)	Control rod drive head penetration: flange bolting	Stainless steel	Air with reactor coolant leakage	Loss of preload #*#due to thermal effects, gasket creep, and self-loosening	Chapter XI.M18, "Bolting Integrity"	No	PWR
2339	RP-228	R-82	IV.A2. RP-228	IV.A2-17(R-82)	Nozzles: inlet; outlet; safety injection	Steel (with or without cladding)	Reactor coolant and neutron flux	Loss of fracture toughness #*#due to neutron irradiation embrittlement	Chapter XI.M31, “Reactor Vessel Surveillance”	Yes, plant-specific or integrated surveillence program	PWR
2347	RP-234	R-83	IV.A2. RP-234	IV.A2-15(R-83)	Nozzle safe ends and welds: inlet; outlet; safety injection	Stainless steel; nickel alloy welds and/or buttering	Reactor coolant	Cracking #*#due to stress corrosion cracking, primary water stress corrosion cracking	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for Class 1 components, #*#Chapter XI.M2, “Water Chemistry” for PWR primary water, and #*# for nickel alloy Chapter XI.M11B, "Cracking of Nickel-Alloy Components in the Reactor Coolant Pressure Boundary"	No	PWR
2340	RP-229	R-86	IV.A2. RP-229	IV.A2-24(R-86)	Vessel shell: upper shell; intermediate shell; lower shell (including beltline welds)	Steel (with or without cladding)	Reactor coolant and neutron flux	Loss of fracture toughness #*#due to neutron irradiation embrittlement	Chapter XI.M31, “Reactor Vessel Surveillance”	Yes, plant-specific	PWR

1303	RP-57	R-88	IV.A2. RP-57	IV.A2-12(R-88)	Core support pads; core guide lugs	Nickel alloy	Reactor coolant	Cracking #*#due to primary water stress corrosion cracking	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for Class 1 components, and #*#Chapter XI.M2, “Water Chemistry” for PWR primary water, and #*#Chapter XI.M11B, “Cracking of Nickel-Alloy Components in the Reactor Coolant Pressure Boundary”	No	PWR
1305	RP-59	R-89	IV.A2. RP-59	IV.A2-19(R-89)	Penetrations: instrument tubes (bottom head)	Nickel alloy	Reactor coolant	Cracking #*#due to primary water stress corrosion cracking	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for Class 1 components, and #*#Chapter XI.M2, “Water Chemistry” for PWR primary water, and #*#Chapter XI.M11B, “Cracking of Nickel-Alloy Components in the Reactor Coolant Pressure Boundary”	No	PWR
2594	RP-353	RP-01	IV.E.RP-353	IV.E-6(RP-01)	Piping, piping components, and piping elements	Steel	Concrete - dry	None	None	No	BWR/PWR
2292	RP-221	RP-10	IV.C2. RP-221	IV.C2-14(RP-10)	Piping, piping components, and piping elements	Steel	Closed-cycle cooling water	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	PWR
2293	RP-222	RP-11	IV.C2. RP-222	IV.C2-11(RP-11)	Piping, piping components, and piping elements	Copper alloy	Closed-cycle cooling water	Loss of material #*#due to pitting, crevice, and galvanic corrosion	Chapter XI.M21A, "Closed Treated Water Systems"	No	PWR
1402	RP-154	RP-13	IV.A2. RP-154	IV.A2-1(RP-13)	Bottom-mounted instrument guide tube (external to bottom head)	Stainless steel	Reactor coolant	Cracking #*#due to stress corrosion cracking	A plant-specific aging management program is to be evaluated	Yes, plant-specific	PWR

2336	RP-225	RP-15	IV.D1.RP-225	IV.D1-15(RP-15)	Steam generator structural: anti-vibration bars	Chrome plated steel; stainless steel; nickel alloy	Secondary feedwater or steam	Loss of material #*#due to fretting	Chapter XI.M19, “Steam Generators”	No	PWR
2337	RP-226	RP-15	IV.D1.RP-226	IV.D1-15(RP-15)	Steam generator structural: anti-vibration bars	Chrome plated steel; stainless steel; nickel alloy	Secondary feedwater or steam	Loss of material #*#due to crevice corrosion	Chapter XI.M19, “Steam Generators,” and #*#Chapter XI.M2, “Water Chemistry” for PWR secondary water	No	PWR
1403	RP-155	RP-18	IV.B1.RP-155	IV.B1-16(RP-18)	Steam dryers	Stainless steel	Reactor coolant	Cracking #*#due to flow-induced vibration	Chapter XI.M9, "BWR Vessel Internals" for steam dryer	No	BWR
2612	RP-367	RP-21	IV.D1.RP-367	IV.D1-6(RP-21)	Primary side components: divider plate	Steel (with nickel-alloy cladding); nickel alloy	Reactor coolant	Cracking #*#due to primary water stress corrosion cracking	Chapter XI.M2, “Water Chemistry” for PWR primary water	Yes, detection of aging effects is to be evaluated	PWR
1404	RP-156	RP-22	IV.C2.RP-156	IV.C2-24(RP-22)	Pressurizer surge and steam space nozzles; welds	Nickel alloy	Reactor coolant or steam	Cracking #*#due to primary water stress corrosion cracking	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for Class 1 components, and #*#Chapter XI.M2, “Water Chemistry” for PWR primary water, and #*#Chapter XI.M11B, “Cracking of Nickel-Alloy Components in the Reactor Coolant Pressure Boundary”	No	PWR
1405	RP-157	RP-25	IV.A1.RP-157	IV.A1-8(RP-25)	Reactor Vessel: flanges; nozzles; penetrations; safe ends; vessel shells, heads and welds	Steel (with stainless steel or nickel-alloy cladding); stainless steel; nickel alloy	Reactor coolant	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR

1406	RP-158	RP-27	IV.C1.RP-158	IV.C1-14(RP-27)	Reactor coolant pressure boundary components	Steel (with stainless steel or nickel-alloy cladding); stainless steel; nickel alloy	Reactor coolant	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR
1407	RP-159	RP-31	IV.C2.RP-159	IV.C2-13(RP-31)	Piping, piping components, and piping elements	Nickel alloy	Reactor coolant or steam	Cracking #*#due to primary water stress corrosion cracking	Chapter XI.M1, “ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD” for Class 1 components, and #*#Chapter XI.M2, “Water Chemistry” for PWR primary water, and #*#Chapter XI.M11B, “Cracking of Nickel-Alloy Components in the Reactor Coolant Pressure Boundary”	No	PWR
1568	SP-71	S-04	VIII.A.SP-71	VIII.A-15(S-04)	Piping, piping components, and piping elements	Steel	Steam	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
1569	SP-71	S-04	VIII.C.SP-71	VIII.C-3(S-04)	Piping, piping components, and piping elements	Steel	Steam	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
1571	SP-72	S-06	VIII.C.SP-72	VIII.C-4(S-06)	Piping, piping components, and piping elements	Steel	Steam	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M2, “Water Chemistry,” for PWR secondary water, and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
1570	SP-72	S-06	VIII.A.SP-72	VIII.A-16(S-06)	Piping, piping components, and piping elements	Steel	Steam	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M2, “Water Chemistry,” for PWR secondary water, and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR

1575	SP-73	S-09	VIII.E. SP-73	VIII.E-33(S-09)	Piping, piping components, and piping elements	Steel	Treated water	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
1574	SP-73	S-09	VIII.D2. SP-73	VIII.D2-7(S-09)	Piping, piping components, and piping elements	Steel	Treated water	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR
1572	SP-73	S-09	VIII.B2. SP-73	VIII.B2-6(S-09)	Piping, piping components, and piping elements	Steel	Treated water	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR
1573	SP-73	S-09	VIII.C. SP-73	VIII.C-6(S-09)	Piping, piping components, and piping elements	Steel	Treated water	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
1578	SP-74	S-10	VIII.D1. SP-74	VIII.D1-8(S-10)	Piping, piping components, and piping elements	Steel	Treated water	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M2, “Water Chemistry,” for PWR secondary water, and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR
1580	SP-74	S-10	VIII.F.SP-74	VIII.F-25(S-10)	Piping, piping components, and piping elements	Steel	Treated water	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M2, “Water Chemistry,” for PWR secondary water, and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR
1581	SP-74	S-10	VIII.G. SP-74	VIII.G-38(S-10)	Piping, piping components, and piping elements	Steel	Treated water	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M2, “Water Chemistry,” for PWR secondary water, and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR

1577	SP-74	S-10	VIII.C. SP-74	VIII.C-7(S-10)	Piping, piping components, and piping elements	Steel	Treated water	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M2, “Water Chemistry,” for PWR secondary water, and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
1576	SP-74	S-10	VIII.B1. SP-74	VIII.B1-11(S-10)	Piping, piping components, and piping elements	Steel	Treated water	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M2, “Water Chemistry,” for PWR secondary water, and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR
1579	SP-74	S-10	VIII.E. SP-74	VIII.E-34(S-10)	Piping, piping components, and piping elements	Steel	Treated water	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M2, “Water Chemistry,” for PWR secondary water, and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
2618	SP-136	S-12	VIII.G. SP-136	VIII.G-36(S-12)	Steel Piping, piping components, and piping elements exposed to Raw water	Steel	Raw water	Loss of material due to general, pitting, crevice, and microbiologically-influenced corrosion; fouling that leads to corrosion	Chapter XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components"	No	PWR
1583	SP-75	S-13	VIII.G. SP-75	VIII.G-41(S-13)	Tanks	Steel; stainless steel	Treated water	Loss of material #*#due to general (steel only), pitting, and crevice corrosion	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR
1582	SP-75	S-13	VIII.E. SP-75	VIII.E-40(S-13)	Tanks	Steel; stainless steel	Treated water	Loss of material #*#due to general (steel only), pitting, and crevice corrosion	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR

1584	SP-76	S-17	VIII.G.SP-76	VIII.G-6(S-17)	Heat exchanger components and tubes	Steel	Lubricating oil	Loss of material #*#due to general, pitting, crevice, and microbiologically-influenced corrosion	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR
1585	SP-77	S-18	VIII.E.SP-77	VIII.E-7(S-18)	Heat exchanger components and tubes	Steel	Treated water	Loss of material #*#due to general, pitting, crevice, and galvanic corrosion	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
1586	SP-78	S-19	VIII.E.SP-78	VIII.E-37(S-19)	PWR heat exchanger components	Steel	Treated water	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M2, “Water Chemistry,” for PWR secondary water, and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
1587	SP-78	S-19	VIII.F.SP-78	VIII.F-28(S-19)	PWR heat exchanger components	Steel	Treated water	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M2, “Water Chemistry,” for PWR secondary water, and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR
1588	SP-79	S-20	VIII.G.SP-79	VIII.G-3(S-20)	Heat exchanger components and tubes	Stainless steel	Lubricating oil	Loss of material #*#due to pitting, crevice, and microbiologically-influenced corrosion	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR
1589	SP-80	S-21	VIII.E.SP-80	VIII.E-4(S-21)	Heat exchanger components and tubes	Stainless steel	Treated water	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M2, “Water Chemistry,” for BWR water, and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
1591	SP-81	S-22	VIII.F.SP-81	VIII.F-27(S-22)	PWR heat exchanger components	Stainless steel	Treated water	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M2, “Water Chemistry,” for PWR secondary water, and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR

1590	SP-81	S-22	VIII.E. SP-81	VIII.E-36(S-22)	PWR heat exchanger components	Stainless steel	Treated water	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M2, “Water Chemistry,” for PWR secondary water, and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
1894	SP-117	S-26	VIII.G. SP-117	VIII.G-4(S-26)	Heat exchanger components and tubes	Stainless steel	Raw water	Loss of material #*#due to pitting, crevice, and microbiologically-influenced corrosion; fouling that leads to corrosion	Chapter XI.M20, "Open-Cycle Cooling Water System"	No	PWR
1892	SP-117	S-26	VIII.E. SP-117	VIII.E-3(S-26)	Heat exchanger components and tubes	Stainless steel	Raw water	Loss of material #*#due to pitting, crevice, and microbiologically-influenced corrosion; fouling that leads to corrosion	Chapter XI.M20, "Open-Cycle Cooling Water System"	No	BWR/PWR
1893	SP-117	S-26	VIII.F.SP-117	VIII.F-2(S-26)	Heat exchanger components and tubes	Stainless steel	Raw water	Loss of material #*#due to pitting, crevice, and microbiologically-influenced corrosion; fouling that leads to corrosion	Chapter XI.M20, "Open-Cycle Cooling Water System"	No	PWR
1592	SP-82	S-32	VIII.H. SP-82	VIII.H-1(S-32)	Bolting	Steel; stainless steel	Air – outdoor (External)	Loss of material #*#due to general (steel only), pitting, and crevice corrosion	Chapter XI.M18, "Bolting Integrity"	No	BWR/PWR

1593	SP-83	S-33	VIII.H. SP-83	VIII.H-5(S-33)	Closure bolting	Steel; stainless steel	Air – indoor, uncontrolled (External)	Loss of preload #*#due to thermal effects, gasket creep, and self-loosening	Chapter XI.M18, "Bolting Integrity"	No	BWR/PWR
1594	SP-84	S-34	VIII.H. SP-84	VIII.H-4(S-34)	Closure bolting	Steel	Air – indoor, uncontrolled (External)	Loss of material #*#due to general (steel only), pitting, and crevice corrosion	Chapter XI.M18, "Bolting Integrity"	No	BWR/PWR
1595	SP-85	S-39	VIII.F.SP-85	VIII.F-3(S-39)	Heat exchanger components and tubes	Stainless steel	Treated water >60°C (>140°F)	Cracking #*#due to stress corrosion cracking	Chapter XI.M2, “Water Chemistry,” for PWR secondary water, and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR
1602	SP-87	SP-16	VIII.E. SP-87	VIII.E-29(SP-16)	Piping, piping components, and piping elements	Stainless steel	Treated water	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
1600	SP-87	SP-16	VIII.D1. SP-87	VIII.D1-4(SP-16)	Piping, piping components, and piping elements	Stainless steel	Treated water	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR
1598	SP-87	SP-16	VIII.B1. SP-87	VIII.B1-4(SP-16)	Piping, piping components, and piping elements	Stainless steel	Treated water	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR
1599	SP-87	SP-16	VIII.C. SP-87	VIII.C-1(SP-16)	Piping, piping components, and piping elements	Stainless steel	Treated water	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
1604	SP-87	SP-16	VIII.G. SP-87	VIII.G-32(SP-16)	Piping, piping components, and piping elements	Stainless steel	Treated water	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR

1603	SP-87	SP-16	VIII.F.SP-87	VIII.F-23(SP-16)	Piping, piping components, and piping elements	Stainless steel	Treated water	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR
1601	SP-87	SP-16	VIII.D2.SP-87	VIII.D2-4(SP-16)	Piping, piping components, and piping elements	Stainless steel	Treated water	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR
1610	SP-88	SP-17	VIII.G.SP-88	VIII.G-33(SP-17)	Piping, piping components, and piping elements	Stainless steel	Treated water >60°C (>140°F)	Cracking #*#due to stress corrosion cracking	Chapter XI.M2, “Water Chemistry,” for PWR secondary water, and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR
1609	SP-88	SP-17	VIII.F.SP-88	VIII.F-24(SP-17)	Piping, piping components, and piping elements	Stainless steel	Treated water >60°C (>140°F)	Cracking #*#due to stress corrosion cracking	Chapter XI.M2, “Water Chemistry,” for PWR secondary water, and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR
1608	SP-88	SP-17	VIII.E.SP-88	VIII.E-30(SP-17)	Piping, piping components, and piping elements	Stainless steel	Treated water >60°C (>140°F)	Cracking #*#due to stress corrosion cracking	Chapter XI.M2, “Water Chemistry,” for PWR secondary water, and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
1606	SP-88	SP-17	VIII.C.SP-88	VIII.C-2(SP-17)	Piping, piping components, and piping elements	Stainless steel	Treated water >60°C (>140°F)	Cracking #*#due to stress corrosion cracking	Chapter XI.M2, “Water Chemistry,” for PWR secondary water, and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
1605	SP-88	SP-17	VIII.B1.SP-88	VIII.B1-5(SP-17)	Piping, piping components, and piping elements	Stainless steel	Treated water >60°C (>140°F)	Cracking #*#due to stress corrosion cracking	Chapter XI.M2, “Water Chemistry,” for PWR secondary water, and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR
1607	SP-88	SP-17	VIII.D1.SP-88	VIII.D1-5(SP-17)	Piping, piping components, and piping elements	Stainless steel	Treated water >60°C (>140°F)	Cracking #*#due to stress corrosion cracking	Chapter XI.M2, “Water Chemistry,” for PWR secondary water, and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR
1611	SP-89	SP-19	VIII.E.SP-89	VIII.E-31(SP-19)	Piping, piping components, and piping elements	Stainless steel	Treated water >60°C (>140°F)	Cracking #*#due to stress corrosion cracking	Chapter XI.M2, “Water Chemistry,” for BWR water, and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR

1616	SP-90	SP-24	VIII.G. SP-90	VIII.G-17(SP-24)	Piping, piping components, and piping elements	Aluminum	Treated water	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR
1613	SP-90	SP-24	VIII.D2. SP-90	VIII.D2-1(SP-24)	Piping, piping components, and piping elements	Aluminum	Treated water	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR
1612	SP-90	SP-24	VIII.D1. SP-90	VIII.D1-1(SP-24)	Piping, piping components, and piping elements	Aluminum	Treated water	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR
1615	SP-90	SP-24	VIII.F.SP-90	VIII.F-12(SP-24)	Piping, piping components, and piping elements	Aluminum	Treated water	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR
1614	SP-90	SP-24	VIII.E. SP-90	VIII.E-15(SP-24)	Piping, piping components, and piping elements	Aluminum	Treated water	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
1619	SP-91	SP-25	VIII.D2. SP-91	VIII.D2-5(SP-25)	Piping, piping components, and piping elements	Steel	Lubricating oil	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR
1620	SP-91	SP-25	VIII.E. SP-91	VIII.E-32(SP-25)	Piping, piping components, and piping elements	Steel	Lubricating oil	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
1621	SP-91	SP-25	VIII.G. SP-91	VIII.G-35(SP-25)	Piping, piping components, and piping elements	Steel	Lubricating oil	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR

1617	SP-91	SP-25	VIII.A. SP-91	VIII.A-14(SP-25)	Piping, piping components, and piping elements	Steel	Lubricating oil	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
1618	SP-91	SP-25	VIII.D1. SP-91	VIII.D1-6(SP-25)	Piping, piping components, and piping elements	Steel	Lubricating oil	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR
1624	SP-92	SP-32	VIII.D2. SP-92	VIII.D2-2(SP-32)	Piping, piping components, and piping elements	Copper alloy	Lubricating oil	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR
1625	SP-92	SP-32	VIII.E. SP-92	VIII.E-17(SP-32)	Piping, piping components, and piping elements	Copper alloy	Lubricating oil	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
1622	SP-92	SP-32	VIII.A. SP-92	VIII.A-3(SP-32)	Piping, piping components, and piping elements	Copper alloy	Lubricating oil	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
1626	SP-92	SP-32	VIII.G. SP-92	VIII.G-19(SP-32)	Piping, piping components, and piping elements	Copper alloy	Lubricating oil	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR
1623	SP-92	SP-32	VIII.D1. SP-92	VIII.D1-2(SP-32)	Piping, piping components, and piping elements	Copper alloy	Lubricating oil	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR
1629	SP-94	SP-37	VIII.G. SP-94	VIII.G-31(SP-37)	Piping, piping components, and piping elements	Stainless steel	Soil	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M41, "Buried, Underground, and Limited-Access Piping and Tanks"	No	PWR

1628	SP-94	SP-37	VIII.E. SP-94	VIII.E-28(SP-37)	Piping, piping components, and piping elements	Stainless steel	Soil	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M41, "Buried, Underground, and Limited-Access Piping and Tanks"	No	BWR/PWR
1633	SP-95	SP-38	VIII.E. SP-95	VIII.E-26(SP-38)	Piping, piping components, and piping elements	Stainless steel	Lubricating oil	Loss of material #*#due to pitting, crevice, and microbiologically-influenced corrosion	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
1631	SP-95	SP-38	VIII.D1. SP-95	VIII.D1-3(SP-38)	Piping, piping components, and piping elements	Stainless steel	Lubricating oil	Loss of material #*#due to pitting, crevice, and microbiologically-influenced corrosion	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR
1630	SP-95	SP-38	VIII.A. SP-95	VIII.A-9(SP-38)	Piping, piping components, and piping elements	Stainless steel	Lubricating oil	Loss of material #*#due to pitting, crevice, and microbiologically-influenced corrosion	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
1632	SP-95	SP-38	VIII.D2. SP-95	VIII.D2-3(SP-38)	Piping, piping components, and piping elements	Stainless steel	Lubricating oil	Loss of material #*#due to pitting, crevice, and microbiologically-influenced corrosion	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR
1634	SP-95	SP-38	VIII.G. SP-95	VIII.G-29(SP-38)	Piping, piping components, and piping elements	Stainless steel	Lubricating oil	Loss of material #*#due to pitting, crevice, and microbiologically-influenced corrosion	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR
1635	SP-96	SP-40	VIII.E. SP-96	VIII.E-13(SP-40)	Heat exchanger components and tubes	Stainless steel	Treated water	Reduction of heat transfer #*#due to fouling	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR

1636	SP-96	SP-40	VIII.F.SP-96	VIII.F-10(SP-40)	Heat exchanger components and tubes	Stainless steel	Treated water	Reduction of heat transfer #*#due to fouling	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR
1637	SP-97	SP-42	VIII.E. SP-97	VIII.E-38(SP-42)	Tanks	Stainless steel	Treated water >60°C (>140°F)	Cracking #*#due to stress corrosion cracking	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
1638	SP-98	SP-45	VIII.A. SP-98	VIII.A-11(SP-45)	Piping, piping components, and piping elements	Stainless steel	Steam	Cracking #*#due to stress corrosion cracking	Chapter XI.M2, “Water Chemistry,” for BWR water, and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
1639	SP-98	SP-45	VIII.B2. SP-98	VIII.B2-1(SP-45)	Piping, piping components, and piping elements	Stainless steel	Steam	Cracking #*#due to stress corrosion cracking	Chapter XI.M2, “Water Chemistry,” for BWR water, and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR
1640	SP-99	SP-53	VIII.G. SP-99	VIII.G-8(SP-53)	Heat exchanger components and tubes	Copper alloy	Lubricating oil	Reduction of heat transfer #*#due to fouling	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR
1643	SP-100	SP-58	VIII.G. SP-100	VIII.G-10(SP-58)	Heat exchanger components and tubes	Copper alloy	Treated water	Reduction of heat transfer #*#due to fouling	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR
1642	SP-100	SP-58	VIII.F.SP-100	VIII.F-7(SP-58)	Heat exchanger components and tubes	Copper alloy	Treated water	Reduction of heat transfer #*#due to fouling	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR
1641	SP-100	SP-58	VIII.E. SP-100	VIII.E-10(SP-58)	Heat exchanger components and tubes	Copper alloy	Treated water	Reduction of heat transfer #*#due to fouling	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
1644	SP-101	SP-61	VIII.A. SP-101	VIII.A-5(SP-61)	Piping, piping components, and piping elements	Copper alloy	Treated water	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	BWR/PWR
1645	SP-101	SP-61	VIII.F.SP-101	VIII.F-15(SP-61)	Piping, piping components, and piping elements	Copper alloy	Treated water	Loss of material #*#due to pitting and crevice corrosion	Chapter XI.M2, “Water Chemistry,” and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR

1646	SP-102	SP-62	VIII.G. SP-102	VIII.G-12(SP-62)	Heat exchanger components and tubes	Stainless steel	Lubricating oil	Reduction of heat transfer #*#due to fouling	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR
1647	SP-103	SP-63	VIII.G. SP-103	VIII.G-15(SP-63)	Heat exchanger components and tubes	Steel	Lubricating oil	Reduction of heat transfer #*#due to fouling	Chapter XI.M39, "Lubricating Oil Analysis," and #*#Chapter XI.M32, “One-Time Inspection”	No	PWR
1702	TP-23	T-01	III.A7.TP-23	III.A7-5(T-01)	Concrete (accessible areas): exterior above- and below-grade; foundation	Concrete	Air – outdoor	Loss of material (spalling, scaling) and cracking #*#due to freeze-thaw	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
1698	TP-23	T-01	III.A1.TP-23	III.A1-6(T-01)	Concrete (accessible areas): exterior above- and below-grade; foundation	Concrete	Air – outdoor	Loss of material (spalling, scaling) and cracking #*#due to freeze-thaw	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
1703	TP-23	T-01	III.A8.TP-23	III.A8-5(T-01)	Concrete (accessible areas): exterior above- and below-grade; foundation	Concrete	Air – outdoor	Loss of material (spalling, scaling) and cracking #*#due to freeze-thaw	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
1701	TP-23	T-01	III.A5.TP-23	III.A5-6(T-01)	Concrete (accessible areas): exterior above- and below-grade; foundation	Concrete	Air – outdoor	Loss of material (spalling, scaling) and cracking #*#due to freeze-thaw	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
1704	TP-23	T-01	III.A9.TP-23	III.A9-5(T-01)	Concrete (accessible areas): exterior above- and below-grade; foundation	Concrete	Air – outdoor	Loss of material (spalling, scaling) and cracking #*#due to freeze-thaw	Chapter XI.S6, "Structures Monitoring"	No	BWR
1700	TP-23	T-01	III.A3.TP-23	III.A3-6(T-01)	Concrete (accessible areas): exterior above- and below-grade; foundation	Concrete	Air – outdoor	Loss of material (spalling, scaling) and cracking #*#due to freeze-thaw	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR

1699	TP-23	T-01	III.A2.TP-23	III.A2-6(T-01)	Concrete (accessible areas): exterior above- and below-grade; foundation	Concrete	Air – outdoor	Loss of material (spalling, scaling) and cracking #*#due to freeze-thaw	Chapter XI.S6, "Structures Monitoring"	No	BWR
1708	TP-24	T-02	III.A5.TP-24	III.A5-7(T-02)	Concrete (accessible areas): exterior above- and below-grade; foundation	Concrete	Water – flowing	Increase in porosity and permeability; loss of strength #*#due to leaching of calcium hydroxide and carbonation	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
1711	TP-24	T-02	III.A9.TP-24	III.A9-6(T-02)	Concrete (accessible areas): exterior above- and below-grade; foundation	Concrete	Water – flowing	Increase in porosity and permeability; loss of strength #*#due to leaching of calcium hydroxide and carbonation	Chapter XI.S6, "Structures Monitoring"	No	BWR
1709	TP-24	T-02	III.A7.TP-24	III.A7-6(T-02)	Concrete (accessible areas): exterior above- and below-grade; foundation	Concrete	Water – flowing	Increase in porosity and permeability; loss of strength #*#due to leaching of calcium hydroxide and carbonation	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR

1706	TP-24	T-02	III.A2.TP-24	III.A2-7(T-02)	Concrete (accessible areas): exterior above- and below-grade; foundation	Concrete	Water – flowing	Increase in porosity and permeability; loss of strength #*#due to leaching of calcium hydroxide and carbonation	Chapter XI.S6, "Structures Monitoring"	No	BWR
1705	TP-24	T-02	III.A1.TP-24	III.A1-7(T-02)	Concrete (accessible areas): exterior above- and below-grade; foundation	Concrete	Water – flowing	Increase in porosity and permeability; loss of strength #*#due to leaching of calcium hydroxide and carbonation	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
1707	TP-24	T-02	III.A3.TP-24	III.A3-7(T-02)	Concrete (accessible areas): exterior above- and below-grade; foundation	Concrete	Water – flowing	Increase in porosity and permeability; loss of strength #*#due to leaching of calcium hydroxide and carbonation	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
1710	TP-24	T-02	III.A8.TP-24	III.A8-6(T-02)	Concrete (accessible areas): exterior above- and below-grade; foundation	Concrete	Water – flowing	Increase in porosity and permeability; loss of strength #*#due to leaching of calcium hydroxide and carbonation	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR

1719	TP-25	T-03	III.A9.TP-25	III.A9-1(T-03)	Concrete (accessible areas): all	Concrete	Any environment	Cracking #*#due to expansion from reaction with aggregates	Chapter XI.S6, "Structures Monitoring"	No	BWR
1715	TP-25	T-03	III.A4.TP-25	III.A4-2(T-03)	Concrete (accessible areas): all	Concrete	Any environment	Cracking #*#due to expansion from reaction with aggregates	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
1712	TP-25	T-03	III.A1.TP-25	III.A1-2(T-03)	Concrete (accessible areas): all	Concrete	Any environment	Cracking #*#due to expansion from reaction with aggregates	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
1713	TP-25	T-03	III.A2.TP-25	III.A2-2(T-03)	Concrete (accessible areas): all	Concrete	Any environment	Cracking #*#due to expansion from reaction with aggregates	Chapter XI.S6, "Structures Monitoring"	No	BWR
1714	TP-25	T-03	III.A3.TP-25	III.A3-2(T-03)	Concrete (accessible areas): all	Concrete	Any environment	Cracking #*#due to expansion from reaction with aggregates	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
1716	TP-25	T-03	III.A5.TP-25	III.A5-2(T-03)	Concrete (accessible areas): all	Concrete	Any environment	Cracking #*#due to expansion from reaction with aggregates	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
1717	TP-25	T-03	III.A7.TP-25	III.A7-1(T-03)	Concrete (accessible areas): all	Concrete	Any environment	Cracking #*#due to expansion from reaction with aggregates	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
1718	TP-25	T-03	III.A8.TP-25	III.A8-1(T-03)	Concrete (accessible areas): all	Concrete	Any environment	Cracking #*#due to expansion from reaction with aggregates	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR

1726	TP-26	T-04	III.A9.TP-26	III.A9-8(T-04)	Concrete (accessible areas): interior and above-grade exterior	Concrete	Air – indoor, uncontrolled or Air – outdoor	Cracking; loss of bond; and loss of material (spalling, scaling) #*#due to corrosion of embedded steel	Chapter XI.S6, "Structures Monitoring"	No	BWR
1721	TP-26	T-04	III.A2.TP-26	III.A2-9(T-04)	Concrete (accessible areas): interior and above-grade exterior	Concrete	Air – indoor, uncontrolled or Air – outdoor	Cracking; loss of bond; and loss of material (spalling, scaling) #*#due to corrosion of embedded steel	Chapter XI.S6, "Structures Monitoring"	No	BWR
1722	TP-26	T-04	III.A3.TP-26	III.A3-9(T-04)	Concrete (accessible areas): interior and above-grade exterior	Concrete	Air – indoor, uncontrolled or Air – outdoor	Cracking; loss of bond; and loss of material (spalling, scaling) #*#due to corrosion of embedded steel	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
1723	TP-26	T-04	III.A4.TP-26	III.A4-3(T-04)	Concrete (accessible areas): interior and above-grade exterior	Concrete	Air – indoor, uncontrolled or Air – outdoor	Cracking; loss of bond; and loss of material (spalling, scaling) #*#due to corrosion of embedded steel	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
1724	TP-26	T-04	III.A5.TP-26	III.A5-9(T-04)	Concrete (accessible areas): interior and above-grade exterior	Concrete	Air – indoor, uncontrolled or Air – outdoor	Cracking; loss of bond; and loss of material (spalling, scaling) #*#due to corrosion of embedded steel	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
1725	TP-26	T-04	III.A7.TP-26	III.A7-8(T-04)	Concrete (accessible areas): interior and above-grade exterior	Concrete	Air – indoor, uncontrolled or Air – outdoor	Cracking; loss of bond; and loss of material (spalling, scaling) #*#due to corrosion of embedded steel	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR

1720	TP-26	T-04	III.A1.TP-26	III.A1-9(T-04)	Concrete (accessible areas): interior and above-grade exterior	Concrete	Air – indoor, uncontrolled or Air – outdoor	Cracking; loss of bond; and loss of material (spalling, scaling) #*#due to corrosion of embedded steel	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
1728	TP-27	T-05	III.A2.TP-27	III.A2-4(T-05)	Concrete (accessible areas): below-grade exterior; foundation	Concrete	Ground water/soil	Cracking; loss of bond; and loss of material (spalling, scaling) #*#due to corrosion of embedded steel	Chapter XI.S6, "Structures Monitoring"	No	BWR
1729	TP-27	T-05	III.A3.TP-27	III.A3-4(T-05)	Concrete (accessible areas): below-grade exterior; foundation	Concrete	Ground water/soil	Cracking; loss of bond; and loss of material (spalling, scaling) #*#due to corrosion of embedded steel	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
1730	TP-27	T-05	III.A5.TP-27	III.A5-4(T-05)	Concrete (accessible areas): below-grade exterior; foundation	Concrete	Ground water/soil	Cracking; loss of bond; and loss of material (spalling, scaling) #*#due to corrosion of embedded steel	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
1731	TP-27	T-05	III.A7.TP-27	III.A7-3(T-05)	Concrete (accessible areas): below-grade exterior; foundation	Concrete	Ground water/soil	Cracking; loss of bond; and loss of material (spalling, scaling) #*#due to corrosion of embedded steel	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
1732	TP-27	T-05	III.A8.TP-27	III.A8-3(T-05)	Concrete (accessible areas): below-grade exterior; foundation	Concrete	Ground water/soil	Cracking; loss of bond; and loss of material (spalling, scaling) #*#due to corrosion of embedded steel	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR

1733	TP-27	T-05	III.A9.TP-27	III.A9-3(T-05)	Concrete (accessible areas): below-grade exterior; foundation	Concrete	Ground water/soil	Cracking; loss of bond; and loss of material (spalling, scaling) #*#due to corrosion of embedded steel	Chapter XI.S6, "Structures Monitoring"	No	BWR
1727	TP-27	T-05	III.A1.TP-27	III.A1-4(T-05)	Concrete (accessible areas): below-grade exterior; foundation	Concrete	Ground water/soil	Cracking; loss of bond; and loss of material (spalling, scaling) #*#due to corrosion of embedded steel	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
1736	TP-28	T-06	III.A3.TP-28	III.A3-10(T-06)	Concrete: interior; above-grade exterior	Concrete	Air – indoor, uncontrolled or Air – outdoor	Increase in porosity and permeability; cracking; loss of material (spalling, scaling) #*#due to aggressive chemical attack	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
1737	TP-28	T-06	III.A4.TP-28	III.A4-4(T-06)	Concrete: interior; above-grade exterior	Concrete	Air – indoor, uncontrolled or Air – outdoor	Increase in porosity and permeability; cracking; loss of material (spalling, scaling) #*#due to aggressive chemical attack	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
1738	TP-28	T-06	III.A5.TP-28	III.A5-10(T-06)	Concrete: interior; above-grade exterior	Concrete	Air – indoor, uncontrolled or Air – outdoor	Increase in porosity and permeability; cracking; loss of material (spalling, scaling) #*#due to aggressive chemical attack	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR

1739	TP-28	T-06	III.A7.TP-28	III.A7-9(T-06)	Concrete: interior; above-grade exterior	Concrete	Air – indoor, uncontrolled or Air – outdoor	Increase in porosity and permeability; cracking; loss of material (spalling, scaling) #*#due to aggressive chemical attack	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
1740	TP-28	T-06	III.A9.TP-28	III.A9-9(T-06)	Concrete: interior; above-grade exterior	Concrete	Air – indoor, uncontrolled or Air – outdoor	Increase in porosity and permeability; cracking; loss of material (spalling, scaling) #*#due to aggressive chemical attack	Chapter XI.S6, "Structures Monitoring"	No	BWR
1735	TP-28	T-06	III.A2.TP-28	III.A2-10(T-06)	Concrete: interior; above-grade exterior	Concrete	Air – indoor, uncontrolled or Air – outdoor	Increase in porosity and permeability; cracking; loss of material (spalling, scaling) #*#due to aggressive chemical attack	Chapter XI.S6, "Structures Monitoring"	No	BWR
1734	TP-28	T-06	III.A1.TP-28	III.A1-10(T-06)	Concrete: interior; above-grade exterior	Concrete	Air – indoor, uncontrolled or Air – outdoor	Increase in porosity and permeability; cracking; loss of material (spalling, scaling) #*#due to aggressive chemical attack	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR

1744	TP-29	T-07	III.A5.TP-29	III.A5-5(T-07)	Groups 1-3, 5, 7-9 - concrete (inaccessible areas): below-grade exterior; foundation	Concrete	Ground water/soil	Increase in porosity and permeability; cracking; loss of material (spalling, scaling) #*#due to aggressive chemical attack	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
1747	TP-29	T-07	III.A9.TP-29	III.A9-4(T-07)	Groups 1-3, 5, 7-9 - concrete (inaccessible areas): below-grade exterior; foundation	Concrete	Ground water/soil	Increase in porosity and permeability; cracking; loss of material (spalling, scaling) #*#due to aggressive chemical attack	Chapter XI.S6, "Structures Monitoring"	No	BWR
1745	TP-29	T-07	III.A7.TP-29	III.A7-4(T-07)	Groups 1-3, 5, 7-9 - concrete (inaccessible areas): below-grade exterior; foundation	Concrete	Ground water/soil	Increase in porosity and permeability; cracking; loss of material (spalling, scaling) #*#due to aggressive chemical attack	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
1743	TP-29	T-07	III.A3.TP-29	III.A3-5(T-07)	Groups 1-3, 5, 7-9 - concrete (inaccessible areas): below-grade exterior; foundation	Concrete	Ground water/soil	Increase in porosity and permeability; cracking; loss of material (spalling, scaling) #*#due to aggressive chemical attack	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR

1742	TP-29	T-07	III.A2.TP-29	III.A2-5(T-07)	Groups 1-3, 5, 7-9 - concrete (inaccessible areas): below-grade exterior; foundation	Concrete	Ground water/soil	Increase in porosity and permeability; cracking; loss of material (spalling, scaling) #*#due to aggressive chemical attack	Chapter XI.S6, "Structures Monitoring"	No	BWR
1741	TP-29	T-07	III.A1.TP-29	III.A1-5(T-07)	Groups 1-3, 5, 7-9 - concrete (inaccessible areas): below-grade exterior; foundation	Concrete	Ground water/soil	Increase in porosity and permeability; cracking; loss of material (spalling, scaling) #*#due to aggressive chemical attack	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
1746	TP-29	T-07	III.A8.TP-29	III.A8-4(T-07)	Groups 1-3, 5, 7-9 - concrete (inaccessible areas): below-grade exterior; foundation	Concrete	Ground water/soil	Increase in porosity and permeability; cracking; loss of material (spalling, scaling) #*#due to aggressive chemical attack	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
1749	TP-30	T-08	III.A2.TP-30	III.A2-3(T-08)	Groups 1-3, 5-9 - concrete: all	Concrete	Soil	Cracking and distortion #*#due to increased stress levels from settlement	Chapter XI.S6, “Structures Monitoring” #*#If a de-watering system is relied upon for control of settlement, then the licensee is to ensure proper functioning of the de-watering system through the period of extended operation.	Yes, if a de-watering system is relied upon to control settlement	BWR
1754	TP-30	T-08	III.A8.TP-30	III.A8-2(T-08)	Groups 1-3, 5-9 - concrete: all	Concrete	Soil	Cracking and distortion #*#due to increased stress levels from settlement	Chapter XI.S6, “Structures Monitoring” #*#If a de-watering system is relied upon for control of settlement, then the licensee is to ensure proper functioning of the de-watering system through the period of extended operation.	Yes, if a de-watering system is relied upon to control settlement	BWR/PWR

1753	TP-30	T-08	III.A7.TP-30	III.A7-2(T-08)	Groups 1-3, 5-9 - concrete: all	Concrete	Soil		Cracking and distortion #*#due to increased stress levels from settlement	Chapter XI.S6, “Structures Monitoring” #*#If a de-watering system is relied upon for control of settlement, then the licensee is to ensure proper functioning of the de-watering system through the period of extended operation.	Yes, if a de-watering system is relied upon to control settlement	BWR/PWR
1752	TP-30	T-08	III.A6.TP-30	III.A6-4(T-08)	Groups 1-3, 5-9 - concrete: all	Concrete	Soil		Cracking and distortion #*#due to increased stress levels from settlement	Chapter XI.S6, “Structures Monitoring” #*#If a de-watering system is relied upon for control of settlement, then the licensee is to ensure proper functioning of the de-watering system through the period of extended operation.	Yes, if a de-watering system is relied upon to control settlement	BWR/PWR
1751	TP-30	T-08	III.A5.TP-30	III.A5-3(T-08)	Groups 1-3, 5-9 - concrete: all	Concrete	Soil		Cracking and distortion #*#due to increased stress levels from settlement	Chapter XI.S6, “Structures Monitoring” #*#If a de-watering system is relied upon for control of settlement, then the licensee is to ensure proper functioning of the de-watering system through the period of extended operation.	Yes, if a de-watering system is relied upon to control settlement	BWR/PWR
1750	TP-30	T-08	III.A3.TP-30	III.A3-3(T-08)	Groups 1-3, 5-9 - concrete: all	Concrete	Soil		Cracking and distortion #*#due to increased stress levels from settlement	Chapter XI.S6, “Structures Monitoring” #*#If a de-watering system is relied upon for control of settlement, then the licensee is to ensure proper functioning of the de-watering system through the period of extended operation.	Yes, if a de-watering system is relied upon to control settlement	BWR/PWR
1755	TP-30	T-08	III.A9.TP-30	III.A9-2(T-08)	Groups 1-3, 5-9 - concrete: all	Concrete	Soil		Cracking and distortion #*#due to increased stress levels from settlement	Chapter XI.S6, “Structures Monitoring” #*#If a de-watering system is relied upon for control of settlement, then the licensee is to ensure proper functioning of the de-watering system through the period of extended operation.	Yes, if a de-watering system is relied upon to control settlement	BWR
1748	TP-30	T-08	III.A1.TP-30	III.A1-3(T-08)	Groups 1-3, 5-9 - concrete: all	Concrete	Soil		Cracking and distortion #*#due to increased stress levels from settlement	Chapter XI.S6, “Structures Monitoring” #*#If a de-watering system is relied upon for control of settlement, then the licensee is to ensure proper functioning of the de-watering system through the period of extended operation.	Yes, if a de-watering system is relied upon to control settlement	BWR/PWR

1757	TP-31	T-09	III.A2.TP-31	III.A2-8(T-09)	Groups 1-3, 5-9 - concrete: foundation; subfoundation	Concrete; porous concrete	Water – flowing under foundation	Reduction of foundation strength and cracking #*#due to differential settlement and erosion of porous concrete subfoundation	Chapter XI.S6, “Structures Monitoring” #*#If a de-watering system is relied upon for control of settlement, then the licensee is to ensure proper functioning of the de-watering system through the period of extended operation.	Yes, if a de-watering system is relied upon to control settlement	BWR
1758	TP-31	T-09	III.A3.TP-31	III.A3-8(T-09)	Groups 1-3, 5-9 - concrete: foundation; subfoundation	Concrete; porous concrete	Water – flowing under foundation	Reduction of foundation strength and cracking #*#due to differential settlement and erosion of porous concrete subfoundation	Chapter XI.S6, “Structures Monitoring” #*#If a de-watering system is relied upon for control of settlement, then the licensee is to ensure proper functioning of the de-watering system through the period of extended operation.	Yes, if a de-watering system is relied upon to control settlement	BWR/PWR
1759	TP-31	T-09	III.A5.TP-31	III.A5-8(T-09)	Groups 1-3, 5-9 - concrete: foundation; subfoundation	Concrete; porous concrete	Water – flowing under foundation	Reduction of foundation strength and cracking #*#due to differential settlement and erosion of porous concrete subfoundation	Chapter XI.S6, “Structures Monitoring” #*#If a de-watering system is relied upon for control of settlement, then the licensee is to ensure proper functioning of the de-watering system through the period of extended operation.	Yes, if a de-watering system is relied upon to control settlement	BWR/PWR
1760	TP-31	T-09	III.A6.TP-31	III.A6-8(T-09)	Groups 1-3, 5-9 - concrete: foundation; subfoundation	Concrete; porous concrete	Water – flowing under foundation	Reduction of foundation strength and cracking #*#due to differential settlement and erosion of porous concrete subfoundation	Chapter XI.S6, “Structures Monitoring” #*#If a de-watering system is relied upon for control of settlement, then the licensee is to ensure proper functioning of the de-watering system through the period of extended operation.	Yes, if a de-watering system is relied upon to control settlement	BWR/PWR

1761	TP-31	T-09	III.A7.TP-31	III.A7-7(T-09)	Groups 1-3, 5-9 - concrete: foundation; subfoundation	Concrete; porous concrete	Water – flowing under foundation	Reduction of foundation strength and cracking #*#due to differential settlement and erosion of porous concrete subfoundation	Chapter XI.S6, “Structures Monitoring” #*#If a de-watering system is relied upon for control of settlement, then the licensee is to ensure proper functioning of the de-watering system through the period of extended operation.	Yes, if a de-watering system is relied upon to control settlement	BWR/PWR
1762	TP-31	T-09	III.A8.TP-31	III.A8-7(T-09)	Groups 1-3, 5-9 - concrete: foundation; subfoundation	Concrete; porous concrete	Water – flowing under foundation	Reduction of foundation strength and cracking #*#due to differential settlement and erosion of porous concrete subfoundation	Chapter XI.S6, “Structures Monitoring” #*#If a de-watering system is relied upon for control of settlement, then the licensee is to ensure proper functioning of the de-watering system through the period of extended operation.	Yes, if a de-watering system is relied upon to control settlement	BWR/PWR
1756	TP-31	T-09	III.A1.TP-31	III.A1-8(T-09)	Groups 1-3, 5-9 - concrete: foundation; subfoundation	Concrete; porous concrete	Water – flowing under foundation	Reduction of foundation strength and cracking #*#due to differential settlement and erosion of porous concrete subfoundation	Chapter XI.S6, “Structures Monitoring” #*#If a de-watering system is relied upon for control of settlement, then the licensee is to ensure proper functioning of the de-watering system through the period of extended operation.	Yes, if a de-watering system is relied upon to control settlement	BWR/PWR
1763	TP-31	T-09	III.A9.TP-31	III.A9-7(T-09)	Groups 1-3, 5-9 - concrete: foundation; subfoundation	Concrete; porous concrete	Water – flowing under foundation	Reduction in foundation strength, cracking #*#due to differential settlement,erosion of porous concrete subfoundation	Chapter XI.S6, “Structures Monitoring” #*#If a de-watering system is relied upon for control of settlement, then the licensee is to ensure proper functioning of the de-watering system through the period of extended operation.	Yes, if a de-watering system is relied upon to control settlement	BWR

2004	TP-114	T-10	III.A4.TP-114	III.A4-1(T-10)	Groups 1-5 - concrete: all	Concrete	Air – indoor, uncontrolled	Reduction of strength and modulus #*#due to elevated temperature (>150°F general; >200°F local)	Plant-specific aging management program #*# #*#The implementation of 10 CFR 50.55a and ASME Section XI, Subsection IWL would not be able to identify the reduction of strength and modulus of elasticity due to elevated temperature. Thus, for any portions of concrete containment that exceed specified temperature limits, further evaluations are warranted. Subsection CC-3400 of ASME Section III, Division 2, specifies the concrete temperature limits for normal operation or any other long-term period. The temperatures shall not exceed 150°F except for local areas, such as around penetrations, which are not allowed to exceed 200°F. If significant equipment loads are supported by concrete at temperatures exceeding 150°F, an evaluation of the ability to withstand the postulated design loads is to be made. #*# #*#Higher temperatures than given above may be allowed in the concrete if tests and/or calculations are provided to evaluate the reduction in strength and modulus of elasticity and these reductions are applied to the design calculations.	Yes, if temperature limits are exceeded	BWR/PWR

2005	TP-114	T-10	III.A5.TP-114	III.A5-1(T-10)	Groups 1-5 - concrete: all	Concrete	Air – indoor, uncontrolled	Reduction of strength and modulus #*#due to elevated temperature (>150°F general; >200°F local)	Plant-specific aging management program #*# #*#The implementation of 10 CFR 50.55a and ASME Section XI, Subsection IWL would not be able to identify the reduction of strength and modulus of elasticity due to elevated temperature. Thus, for any portions of concrete containment that exceed specified temperature limits, further evaluations are warranted. Subsection CC-3400 of ASME Section III, Division 2, specifies the concrete temperature limits for normal operation or any other long-term period. The temperatures shall not exceed 150°F except for local areas, such as around penetrations, which are not allowed to exceed 200°F. If significant equipment loads are supported by concrete at temperatures exceeding 150°F, an evaluation of the ability to withstand the postulated design loads is to be made. #*# #*#Higher temperatures than given above may be allowed in the concrete if tests and/or calculations are provided to evaluate the reduction in strength and modulus of elasticity and these reductions are applied to the design calculations.	Yes, if temperature limits are exceeded	BWR/PWR

2002	TP-114	T-10	III.A2.TP-114	III.A2-1(T-10)	Groups 1-5 - concrete: all	Concrete	Air – indoor, uncontrolled	Reduction of strength and modulus #*#due to elevated temperature (>150°F general; >200°F local)	Plant-specific aging management program #*# #*#The implementation of 10 CFR 50.55a and ASME Section XI, Subsection IWL would not be able to identify the reduction of strength and modulus of elasticity due to elevated temperature. Thus, for any portions of concrete containment that exceed specified temperature limits, further evaluations are warranted. Subsection CC-3400 of ASME Section III, Division 2, specifies the concrete temperature limits for normal operation or any other long-term period. The temperatures shall not exceed 150°F except for local areas, such as around penetrations, which are not allowed to exceed 200°F. If significant equipment loads are supported by concrete at temperatures exceeding 150°F, an evaluation of the ability to withstand the postulated design loads is to be made. #*# #*#Higher temperatures than given above may be allowed in the concrete if tests and/or calculations are provided to evaluate the reduction in strength and modulus of elasticity and these reductions are applied to the design calculations.	Yes, if temperature limits are exceeded	BWR

2001	TP-114	T-10	III.A1.TP-114	III.A1-1(T-10)	Groups 1-5 - concrete: all	Concrete	Air – indoor, uncontrolled	Reduction of strength and modulus #*#due to elevated temperature (>150°F general; >200°F local)	Plant-specific aging management program #*# #*#The implementation of 10 CFR 50.55a and ASME Section XI, Subsection IWL would not be able to identify the reduction of strength and modulus of elasticity due to elevated temperature. Thus, for any portions of concrete containment that exceed specified temperature limits, further evaluations are warranted. Subsection CC-3400 of ASME Section III, Division 2, specifies the concrete temperature limits for normal operation or any other long-term period. The temperatures shall not exceed 150°F except for local areas, such as around penetrations, which are not allowed to exceed 200°F. If significant equipment loads are supported by concrete at temperatures exceeding 150°F, an evaluation of the ability to withstand the postulated design loads is to be made. #*# #*#Higher temperatures than given above may be allowed in the concrete if tests and/or calculations are provided to evaluate the reduction in strength and modulus of elasticity and these reductions are applied to the design calculations.	Yes, if temperature limits are exceeded	BWR/PWR

2003	TP-114	T-10	III.A3.TP-114	III.A3-1(T-10)	Groups 1-5 - concrete: all	Concrete	Air – indoor, uncontrolled	Reduction of strength and modulus #*#due to elevated temperature (>150°F general; >200°F local)	Plant-specific aging management program #*# #*#The implementation of 10 CFR 50.55a and ASME Section XI, Subsection IWL would not be able to identify the reduction of strength and modulus of elasticity due to elevated temperature. Thus, for any portions of concrete containment that exceed specified temperature limits, further evaluations are warranted. Subsection CC-3400 of ASME Section III, Division 2, specifies the concrete temperature limits for normal operation or any other long-term period. The temperatures shall not exceed 150°F except for local areas, such as around penetrations, which are not allowed to exceed 200°F. If significant equipment loads are supported by concrete at temperatures exceeding 150°F, an evaluation of the ability to withstand the postulated design loads is to be made. #*# #*#Higher temperatures than given above may be allowed in the concrete if tests and/or calculations are provided to evaluate the reduction in strength and modulus of elasticity and these reductions are applied to the design calculations.	Yes, if temperature limits are exceeded	BWR/PWR
2300	TP-302	T-11	III.A8.TP-302	III.A8-8(T-11)	Steel components: all structural steel	Steel	Air – indoor, uncontrolled or Air – outdoor	Loss of material #*#due to corrosion	Chapter XI.S6, “Structures Monitoring” #*#If protective coatings are relied upon to manage the effects of aging, the structures monitoring program is to include provisions to address protective coating monitoring and maintenance.	No	BWR/PWR

2299	TP-302	T-11	III.A7.TP-302	III.A7-10(T-11)	Steel components: all structural steel	Steel	Air – indoor, uncontrolled or Air – outdoor	Loss of material #*#due to corrosion	Chapter XI.S6, “Structures Monitoring” #*#If protective coatings are relied upon to manage the effects of aging, the structures monitoring program is to include provisions to address protective coating monitoring and maintenance.	No	BWR/PWR
2298	TP-302	T-11	III.A5.TP-302	III.A5-12(T-11)	Steel components: all structural steel	Steel	Air – indoor, uncontrolled or Air – outdoor	Loss of material #*#due to corrosion	Chapter XI.S6, “Structures Monitoring” #*#If protective coatings are relied upon to manage the effects of aging, the structures monitoring program is to include provisions to address protective coating monitoring and maintenance.	No	BWR/PWR
2297	TP-302	T-11	III.A4.TP-302	III.A4-5(T-11)	Steel components: all structural steel	Steel	Air – indoor, uncontrolled or Air – outdoor	Loss of material #*#due to corrosion	Chapter XI.S6, “Structures Monitoring” #*#If protective coatings are relied upon to manage the effects of aging, the structures monitoring program is to include provisions to address protective coating monitoring and maintenance.	No	BWR/PWR
2296	TP-302	T-11	III.A3.TP-302	III.A3-12(T-11)	Steel components: all structural steel	Steel	Air – indoor, uncontrolled or Air – outdoor	Loss of material #*#due to corrosion	Chapter XI.S6, “Structures Monitoring” #*#If protective coatings are relied upon to manage the effects of aging, the structures monitoring program is to include provisions to address protective coating monitoring and maintenance.	No	BWR/PWR
2295	TP-302	T-11	III.A2.TP-302	III.A2-12(T-11)	Steel components: all structural steel	Steel	Air – indoor, uncontrolled or Air – outdoor	Loss of material #*#due to corrosion	Chapter XI.S6, “Structures Monitoring” #*#If protective coatings are relied upon to manage the effects of aging, the structures monitoring program is to include provisions to address protective coating monitoring and maintenance.	No	BWR
2294	TP-302	T-11	III.A1.TP-302	III.A1-12(T-11)	Steel components: all structural steel	Steel	Air – indoor, uncontrolled or Air – outdoor	Loss of material #*#due to corrosion	Chapter XI.S6, “Structures Monitoring” #*#If protective coatings are relied upon to manage the effects of aging, the structures monitoring program is to include provisions to address protective coating monitoring and maintenance.	No	BWR/PWR

1773	TP-35	T-13	III.A4.TP-35	III.A4-6(T-13)	Sliding surfaces: radial beam seats in BWR drywell	Lubrite; Fluorogold; Lubrofluor	Air – indoor, uncontrolled	Loss of mechanical function #*#due to corrosion, distortion, dirt, overload, wear	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
1774	TP-36	T-15	III.A6.TP-36	III.A6-5(T-15)	Concrete (accessible areas): exterior above- and below-grade; foundation	Concrete	Air – outdoor	Loss of material (spalling, scaling) and cracking #*#due to freeze-thaw	Chapter XI.S7, “Regulatory Guide 1.127, Inspection of Water-Control Structures Associated with Nuclear Power Plants” or the FERC / US Army Corp of Engineers dam inspections and maintenance programs.	No	BWR/PWR
1775	TP-37	T-16	III.A6.TP-37	III.A6-6(T-16)	Concrete (accessible areas): exterior above- and below-grade; foundation; interior slab	Concrete	Water – flowing	Increase in porosity and permeability; loss of strength #*#due to leaching of calcium hydroxide and carbonation	Chapter XI.S7, “Regulatory Guide 1.127, Inspection of Water-Control Structures Associated with Nuclear Power Plants” or the FERC / US Army Corp of Engineers dam inspections and maintenance programs.	No	BWR/PWR
1776	TP-38	T-18	III.A6.TP-38	III.A6-1(T-18)	Concrete (accessible areas): all	Concrete	Air – indoor, uncontrolled or Air – outdoor or Ground water/soil	Cracking; loss of bond; and loss of material (spalling, scaling) #*#due to corrosion of embedded steel	Chapter XI.S7, “Regulatory Guide 1.127, Inspection of Water-Control Structures Associated with Nuclear Power Plants” or the FERC / US Army Corp of Engineers dam inspections and maintenance programs.	No	BWR/PWR
1779	TP-41	T-27	III.B1.1.TP-41	III.B1.1-3(T-27)	High-strength structural bolting	Low-alloy steel, actual measured yield strength ≥ 150 ksi (1,034 MPa)	Air – indoor, uncontrolled	Cracking #*#due to stress corrosion cracking	Chapter XI.S3, “ASME Section XI, Subsection IWF”	No	BWR/PWR

1785	TP-42	T-29	III.B4.TP-42	III.B4-1(T-29)	Building concrete at locations of expansion and grouted anchors; grout pads for support base plates	Concrete; grout	Air – indoor, uncontrolled or Air – outdoor	Reduction in concrete anchor capacity #*#due to local concrete degradation/ service-induced cracking or other concrete aging mechanisms	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
1786	TP-42	T-29	III.B5.TP-42	III.B5-1(T-29)	Building concrete at locations of expansion and grouted anchors; grout pads for support base plates	Concrete; grout	Air – indoor, uncontrolled or Air – outdoor	Reduction in concrete anchor capacity #*#due to local concrete degradation/ service-induced cracking or other concrete aging mechanisms	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
1780	TP-42	T-29	III.B1.1.TP-42	III.B1.1-1(T-29)	Building concrete at locations of expansion and grouted anchors; grout pads for support base plates	Concrete; grout	Air – indoor, uncontrolled or Air – outdoor	Reduction in concrete anchor capacity #*#due to local concrete degradation/ service-induced cracking or other concrete aging mechanisms	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
1781	TP-42	T-29	III.B1.2.TP-42	III.B1.2-1(T-29)	Building concrete at locations of expansion and grouted anchors; grout pads for support base plates	Concrete; grout	Air – indoor, uncontrolled or Air – outdoor	Reduction in concrete anchor capacity #*#due to local concrete degradation/ service-induced cracking or other concrete aging mechanisms	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR

1782	TP-42	T-29	III.B1.3.TP-42	III.B1.3-1(T-29)	Building concrete at locations of expansion and grouted anchors; grout pads for support base plates	Concrete; grout	Air – indoor, uncontrolled or Air – outdoor	Reduction in concrete anchor capacity #*#due to local concrete degradation/ service-induced cracking or other concrete aging mechanisms	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
1784	TP-42	T-29	III.B3.TP-42	III.B3-1(T-29)	Building concrete at locations of expansion and grouted anchors; grout pads for support base plates	Concrete; grout	Air – indoor, uncontrolled or Air – outdoor	Reduction in concrete anchor capacity #*#due to local concrete degradation/ service-induced cracking or other concrete aging mechanisms	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
1783	TP-42	T-29	III.B2.TP-42	III.B2-1(T-29)	Building concrete at locations of expansion and grouted anchors; grout pads for support base plates	Concrete; grout	Air – indoor, uncontrolled or Air – outdoor	Reduction in concrete anchor capacity #*#due to local concrete degradation/ service-induced cracking or other concrete aging mechanisms	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
1788	TP-43	T-30	III.B3.TP-43	III.B3-7(T-30)	Support members; welds; bolted connections; support anchorage to building structure	Steel	Air – indoor, uncontrolled or Air – outdoor	Loss of material #*#due to general and pitting corrosion	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
1789	TP-43	T-30	III.B4.TP-43	III.B4-10(T-30)	Support members; welds; bolted connections; support anchorage to building structure	Steel	Air – indoor, uncontrolled or Air – outdoor	Loss of material #*#due to general and pitting corrosion	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR

1790	TP-43	T-30	III.B5.TP-43	III.B5-7(T-30)	Support members; welds; bolted connections; support anchorage to building structure	Steel	Air – indoor, uncontrolled or Air – outdoor	Loss of material #*#due to general and pitting corrosion	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
1787	TP-43	T-30	III.B2.TP-43	III.B2-10(T-30)	Support members; welds; bolted connections; support anchorage to building structure	Steel	Air – indoor, uncontrolled or Air – outdoor	Loss of material #*#due to general and pitting corrosion	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
1791	TP-44	T-31	III.B4.TP-44	III.B4-12(T-31)	Vibration isolation elements	Non-metallic (e.g., rubber)	Air – indoor, uncontrolled or Air – outdoor	Reduction or loss of isolation function #*#due to radiation hardening, temperature, humidity, sustained vibratory loading	Chapter XI.S3, “ASME Section XI, Subsection IWF”	No	BWR/PWR
1792	TP-45	T-32	III.B1.1.TP-45	III.B1.1-5(T-32)	Sliding surfaces	Lubrite®; graphitic tool steel; Fluorogold; Lubrofluor	Air – indoor, uncontrolled or Air – outdoor	Loss of mechanical function #*#due to corrosion, distortion, dirt, debris, overload, wear	Chapter XI.S3, “ASME Section XI, Subsection IWF”	No	BWR/PWR
1793	TP-45	T-32	III.B1.2.TP-45	III.B1.2-3(T-32)	Sliding surfaces	Lubrite®; graphitic tool steel; Fluorogold; Lubrofluor	Air – indoor, uncontrolled or Air – outdoor	Loss of mechanical function #*#due to corrosion, distortion, dirt, debris, overload, wear	Chapter XI.S3, “ASME Section XI, Subsection IWF”	No	BWR/PWR

1794	TP-45	T-32	III.B1.3 .TP-45	III.B1.3-3(T-32)	Sliding surfaces	Lubrite®; graphitic tool steel; Fluorogold; Lubrofluor	Air – indoor, uncontrolled or Air – outdoor	Loss of mechanical function #*#due to corrosion, distortion, dirt, debris, overload, wear	Chapter XI.S3, “ASME Section XI, Subsection IWF”	No	BWR/PWR
1795	TP-46	TP-1	III.B2.TP-46	III.B2-2(TP-1)	Sliding support bearings; sliding support surfaces	Lubrite®; graphitic tool steel; Fluorogold; Lubrofluor	Air – indoor, uncontrolled	Loss of mechanical function #*#due to corrosion, distortion, dirt, debris, overload, wear	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
1796	TP-46	TP-1	III.B4.TP-46	III.B4-2(TP-1)	Sliding support bearings; sliding support surfaces	Lubrite®; graphitic tool steel; Fluorogold; Lubrofluor	Air – indoor, uncontrolled	Loss of mechanical function #*#due to corrosion, distortion, dirt, debris, overload, wear	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
1798	TP-47	TP-2	III.B4.TP-47	III.B4-3(TP-2)	Sliding support bearings; sliding support surfaces	Lubrite®; graphitic tool steel; Fluorogold; Lubrofluor	Air – outdoor	Loss of mechanical function #*#due to corrosion, distortion, dirt, debris, overload, wear	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR
1797	TP-47	TP-2	III.B2.TP-47	III.B2-3(TP-2)	Sliding support bearings; sliding support surfaces	Lubrite®; graphitic tool steel; Fluorogold; Lubrofluor	Air – outdoor	Loss of mechanical function #*#due to corrosion, distortion, dirt, debris, overload, wear	Chapter XI.S6, "Structures Monitoring"	No	BWR/PWR

1799	TP-48	TP-9	III.B1.1 .TP-48	III.B1.1-4(TP-9)	High-strength structural bolting	Low-alloy steel, actual measured yield strength ≥ 150 ksi (1,034 MPa)	Air – indoor, uncontrolled	Loss of material #*#due to general, pitting, and crevice corrosion	Chapter XI.S3, “ASME Section XI, Subsection IWF”	No	BWR/PWR

Basis

Editorial

Editorial

New MEA combination

Editorial

Editorial

Editorial

Editorial

Editorial

Editorial

Editorial

Editorial

Editorial

Editorial

Editorial

Scope of AMP was expanded to include more than the steam generator tubes.

AMP name change

Scope of AMP was expanded to include more than the steam generator tubes.

Scope of AMP was expanded to include more than the steam generator tubes.

Editorial

Editorial

Recommend changing F/E to match CP-105.Erosion of cement from porous concrete subfoundations beneath containment basemats is described in IN 97-11. IN 98-26 proposes Maintenance Ru

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Scope of AMP was expanded to include more than the steam generator tubes.

The code case requirements are now included in the ASME Code Section XI.

New MEA combination

Editorial

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New MEA combination

Editorial

New MEA combination

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Editorial

Changed the component name to High strength structural bolting to be more generic and cover High strength bolting used for ASME Class 1, 2, 3 and MC component supports. High strength str

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Editorial

New MEA combination

Changed "reinforced concrete" to "concrete" for consistency with Chapter II

Editorial

Editorial

Editorial

Editorial

Editorial

New MEA combination

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Editorial

Clarified that the degradation and mechanisms are spelled out in 10 CFR 50.49. Sounds very odd - aging effects can be caused by various degradation mechanisms.   It is not in IX. Therefore c

New MEA combination

New MEA combination

New MEA combination

Scope of AMP was expanded to include more than the steam generator tubes.

Scope of AMP was expanded to include more than the steam generator tubes.

New MEA combination

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Editorial

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Editorial

New MEA combination

New MEA combination

Scope of AMP was expanded to include more than the steam generator tubes.

New MEA combination

Only Title changed. No other changes to line. Keep line.

Only Title changed. No other changes to line. Keep line.

Only Title changed. No other changes to line. Keep line.

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Editorial

Editorial

Editorial

New MEA combination

Editorial

Editorial

Editorial

New MEA combination

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New MEA combination

New MEA combination

See Dave Alley's e-mail dated pril 26, 2010

See Dave Alley's e-mail dated pril 26, 2010

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See Dave Alley's e-mail dated pril 26, 2010

An approved precedent exists for accepting Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components program . As shown in WCGS SER, Section 3.3.2.2.10.5, the staff ha

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An approved precedent exists for accepting Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components program . As shown in WCGS SER, Section 3.3.2.2.10.5, the staff ha

Bolting may be either steel or stainless steel and these are the aging effects mechanisms in the stated environment

XI.M18 has been revised to include recommendations for high strength bolting

XI.M38 covers internal surfaces of pipes and ducts and elastomeric linings

XI.M38 covers internal surfaces of pipes and ducts and elastomeric linings

An approved precedent exists for accepting Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components program as verificationof effectiveness of water chemistry program. A

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AMP M38 is revised to include the aging management of elastomer components. The program includes visual inspection and physical manipulations to detect loss of material.

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Leave the old line number “as-is“. There is no technical change.

Leave the old line number “as-is“. There is no technical change.

None

None

None

None

None

None

An approved precedent exists for accepting Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components program. As shown in WCGS SER, Section 3.3.2.2.7.3 the staff has a

Removed from scope of AMP XI.M26. Will be managed by AMP XI.M30 and AMP XI.M32.

An approved precedent exists for accepting One-Time Inspection program as verification of effectiveness of Fuel Oil Analysis program. As shown in WCGS SER, Section 3.3.2.2.9.1, the staff has

An approved precedent exists for accepting One-Time Inspection program as verification of effectiveness of Fuel Oil Analysis program. As shown in WCGS SER, Section 3.3.2.2.9.1, the staff has

An approved precedent exists for accepting One-Time Inspection program as verificationof effectiveness of water chemistry program. As shown in SSES SER, Section 3.3.2.2.11 the staff has acce

An approved precedent exists for accepting One-Time Inspection program as verificationof effectiveness of water chemistry program. As shown in SSES SER, Section 3.3.2.2.11 the staff has acce

None

None

None

An approved precedent exists for accepting One-Time Inspection program as verification of effectiveness of water chemistry program. As shown in (need precedent from PWR) the staff has accep

An approved precedent exists for accepting One-Time Inspection program as verification of effectiveness of water chemistry program. As shown in (need precedent from BWR) the staff has accep

None

None

None

An approved precedent exists for accepting Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components program as verificationof effectiveness of water chemistry program. A

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An approved precedent exists for accepting One-Time Inspection program as verificationof effectiveness of water chemistry program. As shown in OCNGS SER, Section 3.3.2.2.10.2 the staff has

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An approved precedent exists for accepting One-Time Inspection program as verificationof effectiveness of water chemistry program. As shown in OCNGS SER, Section 3.3.2.2.3.1 the staff has a

None

None

None

None

None

None

None

None

None

None

Aging mechanism of fouling is specific for loss of material

Aging mechanism of fouling is specific for loss of material.

None

None

None

An approved precedent exists for accepting One-Time Inspection program as verificationof effectiveness of water chemistry program. As shown in Pilgrim SER, Section 3.3.2.2.10.2 the staff has a

An approved precedent exists for accepting One-Time Inspection program as verificationof effectiveness of water chemistry program. As shown in OCNGS SER, Section 3.3.2.2.3.2 the staff has a

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An approved precedent exists for accepting One-Time Inspection program as verificationof effectiveness of water chemistry program. As shown in WCGS SER, Section 3.3.2.2.4.3 the staff has ac

An approved precedent exists for accepting One-Time Inspection program as verification of effectiveness of Lube Oil Analysis program. As shown in WCNGS SER, Section 3.3.2.2.7.1, the staff ha

An approved precedent exists for accepting One-Time Inspection program as verification of effectiveness of Lube Oil Analysis program. As shown in WCNGS SER, Section 3.3.2.2.7.1, the staff ha

An approved precedent exists for accepting One-Time Inspection program as verificationof effectiveness of water chemistry program. As shown in WCGS SER, Section 3.3.2.2.4.2 the staff has ac

An approved precedent exists for accepting One-Time Inspection program as verificationof effectiveness of water chemistry program. As shown in OCNGS SER, Section 3.3.2.2.3.2 the staff has a

New AMP Created for Boral and other materials

New AMP Created for Boral and other materials

None

None

None

None

None

None

None

None

None

None

None

None

Loss of preload can occur with both steel and stainless steel bolts.

Bolting may be either steel or stainless steel and these are the aging effects mechanisms in the stated environment

Bolting may be either steel or stainless steel and these are the aging effects mechanisms in the stated environment

An approved precedent exists for accepting One-Time Inspection program as verification of effectiveness of Lube Oil Analysis program. As shown in WCNGS SER, Section 3.3.2.2.7.1, the staff ha

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An approved precedent exists for accepting Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components program. As shown in WCGS SER, Section 3.3.2.2.3.3 the staff has a

None

None

None

An approved precedent exists for accepting One-Time Inspection program as verification of effectiveness of Fuel Oil Analysis program. As shown in WCGS and OCNGS SERs, Section 3.3.2.2.12.

An approved precedent exists for accepting One-Time Inspection program as verification of effectiveness of Fuel Oil Analysis program. As shown in WCGS and OCNGS SERs, Section 3.3.2.2.12.

An approved precedent exists for accepting One-Time Inspection program as verificationof effectiveness of water chemistry program. As shown in OCNGS SER, Section 3.3.2.2.10.2 the staff has

An approved precedent exists for accepting One-Time Inspection program as verificationof effectiveness of water chemistry program. As shown in OCNGS SER, Section 3.3.2.2.10.2 the staff has

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An approved precedent exists for accepting One-Time Inspection program as verification of effectiveness of Lube Oil Analysis program. As shown in WCGS SER, Section 3.3.2.2.9.2 the staff has

An approved precedent exists for accepting One-Time Inspection program as verification of effectiveness of Fuel Oil Analysis program. As shown in WCGS and OCNGS SERs, Section 3.3.2.2.12.

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An approved precedent exists for accepting One-Time Inspection program as verification of effectiveness of Fuel Oil Analysis program. As shown in WCGS and OCNGS SERs, Section 3.3.2.2.12.

None

An approved precedent exists for accepting One-Time Inspection program as verification of effectiveness of Lube Oil Analysis program. As shown in WCGS SER, Section 3.3.2.2.10.4 the staff has

An approved precedent exists for accepting One-Time Inspection program as verification of effectiveness of Lube Oil Analysis program. As shown in WCGS SER, Section 3.3.2.2.10.4 the staff has

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An approved precedentAn approved precedent exists for accepting One-Time Inspection program as verification of effectiveness of Lube Oil Analysis program. As shown in WCGS SER, Section 3

An approved precedent exists for accepting One-Time Inspection program as verification of effectiveness of Lube Oil Analysis program. As shown in WCGS SER, Section 3.3.2.2.10.4 the staff has

None

None

An approved precedent exists for accepting One-Time Inspection program as verification of effectiveness of Fuel Oil Analysis program. As shown in WCGS and OCNGS SERs, Section 3.3.2.2.12.

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An approved precedent exists for accepting Buried Piping and Tanks Inspection program to manage loss of material for stainless steel piping in soil environment. As shown in SSES SER 3.4.2.2.7

An approved precedent exists for accepting Buried Piping and Tanks Inspection program to manage loss of material for stainless steel piping in soil environment. As shown in SSES SER 3.4.2.2.7

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An approved precedent exists for accepting One-Time Inspection program as verification of effectiveness of Lube Oil Analysis program. As shown in WCGS SER, Section 3.3.2.2.12.2 the staff has

An approved precedent exists for accepting One-Time Inspection program as verification of effectiveness of Lube Oil Analysis program. As shown in WCGS SER, Section 3.3.2.2.12.2 the staff has

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An approved precedent exists for accepting One-Time Inspection program as verification of effectiveness of Lube Oil Analysis program. As shown in WCGS SER, Section 3.3.2.2.12.2 the staff has

None

None

None

None

None

None

None

An approved precedent exists for accepting One-Time Inspection program as verificationof effectiveness of water chemistry program. As shown in VYNPS SER, Section 3.3.2.2.2 the staff has acc

An approved precedent exists for accepting One-Time Inspection program as verificationof effectiveness of water chemistry program. As shown in VYNPS SER, Section 3.3.2.2.2 the staff has acc

None

None

None

An approved precedent exists for accepting One-Time Inspection program as verificationof effectiveness of water chemistry program. As shown in VYNPS SER, Section 3.3.2.2.11 the staff has ac

An approved precedent exists for accepting One-Time Inspection program as verificationof effectiveness of water chemistry program. As shown in VYNPS SER, Section 3.3.2.2.11 the staff has ac

An approved precedent exists for accepting One-Time Inspection program as verificationof effectiveness of water chemistry program. As shown in VYNPS SER, Section 3.3.2.2.11 the staff has ac

An approved precedent exists for accepting One-Time Inspection program as verificationof effectiveness of water chemistry program. As shown in VYNPS SER, Section 3.3.2.2.10.8 the staff has a

An approved precedent exists for accepting Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components program as verificationof effectiveness of water chemistry program. A

An approved precedent exists for accepting Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components program as verificationof effectiveness of water chemistry program. A

An approved precedent exists for accepting Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components program as verificationof effectiveness of water chemistry program. A

An approved precedent exists for accepting Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components program as verificationof effectiveness of water chemistry program. A

None

None

None

None

None

None

An approved precedent exists for accepting Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components program as verificationof effectiveness of water chemistry program. A

None

None

None

None

Error in 2005 version of GALL Report

GALL Rev. 1 Line item C-001 is split to differentiate between accessible and inaccessible areas. Inspections of accessible areas performed in accordance with IWL will indicate the presence of los

GALL Rev. 1 Line item C-002 is split to differentiate between accessible and inaccessible areas. Inspections of accessible areas performed in accordance with IWL will indicate the presence of inc

GALL Rev. 1, Line item C-003 is split to differentiate between accessible and inaccessible areas.   The evaluation basis for a plant-specific program is not changed.

GALL Rev. 1, Line item C-004 is split to diffrentialte between accessible and inaccessible areas. Inspections of accessible areas performed in accordance with IWL will indicate the presence of su

GALL Rev.1, Line item C-005 is split to diffrentialte between accessible and inaccessible areas. Inspections of accessible areas performed in accordance with IWL will indicate the presence of sur

ASME Section XI, Subsection IWL is the applicable aging management program for concrete elements of the BWR and PWR containments. The program element 3, parameters monitored, incluc

ASME Section XI, Subsection IWL is the applicable aging management program for concrete elements of the BWR and PWR containments. The program element 3, parameters monitored, incluc

ASME Section XI, Subsection IWL is the applicable aging management program for concrete elements of the BWR and PWR containments. The program element 3, parameters monitored, incluc

As indicated in ACI 349, sustained exposure of concrete to elevated temperature can cause a loss of its mechanical properties (modulus of elasticity and strength) and result in cracking.   The rec

GALL Rev. 1, Line item C-009 is split to diffrentiate between accessible and inaccessible areas. Inspections of accessible areas performed in accordance with IWE and 10 CFR Part 50 Appendix J

GALL Rev. 1, Line item C-009 is split to diffrentiate between accessible and inaccessible areas. Inspections of accessible areas performed in accordance with IWE and 10 CFR Part 50 Appendix J

GALL Rev. 1, Line item C-009 is split to diffrentiate between accessible and inaccessible areas. Inspections of accessible areas performed in accordance with IWE and 10 CFR Part 50 Appendix J

Editorial change.

Editorial change.

The 2004 edition of ASME Section XI, Subsection IWE specifies VT-3 examination for containment pressure boundary componentst including stainless steel and dissimilar metal welds. The stainl

The 2004 edition of ASME Section XI, Subsection IWE specifies VT-3 examination for containment pressure boundary componentst including stainless steel and dissimilar metal welds. The stainl

Transgranular Stress corrosion cracking (TGSCC) is a concern for dissimilar metal welds. In the case of bellows assemblies, SCC may cause aging effects particularly if the material is not shielde

Transgranular Stress corrosion cracking (TGSCC) is a concern for dissimilar metal welds. In the case of bellows assemblies, SCC may cause aging effects particularly if the material is not shielde

Plant Technical Specifications is not an aging management program. The Technical Specifications provide acceptance criteria for Appendix J testing as clearly stated in Chapter XI.S4.

Plant Technical Specifications is not an aging management program. The Technical Specifications provide acceptance criteria for Appendix J testing as clearly stated in Chapter XI.S4.

GALL Rev. 1, line item C-018 is split to remove components not cover by IWE. Gaskets are not in scope of ASME Section XI, Subsection IWE Program. Loss of sealing due to wear, damage, ero

GALL Rev. 1, line item C-018 is split to remove components not cover by IWE. Gaskets are not in scope of ASME Section XI, Subsection IWE Program. Loss of sealing due to wear, damage, ero

GALL Rev. 1, Line item C-019 is split to distinguish between accessible and inaccessible areas. Torus ring girder, downcomers, and drywell support skirt are not a containment pressure boudary

GALL Rev. 1, Line item C-019 is split to distinguish between accessible and inaccessible areas. Torus ring girder, downcomers, and drywell support skirt are not a containment pressure boudary

ASME Section XI, Subsection IWE is augmented to require surface examination to detect cracking of these components during the period of extended operation.

ASME Section XI, Subsection IWE element 4) is augmented to require surface examination to detect cracking of these components during the period of extended operation. IN 92-20 was added t

GALL Rev. 1, Line item C-025 is split to differentiate between accessible and inaccessible areas.   The evaluation basis for a plant-specific program is not changed.

GALL Rev. 1, Line item C-025 is split to differentiate between accessible and inaccessible areas.   The evaluation basis for a plant-specific program is not changed.

GALL Rev. 1, Line item C-026 is split to differentiate between accessible and inaccessible areas. Inspections of accessible areas performed in accordance with IWL will indicate the presence of in

GALL Rev. 1, Line item C-026 is split to differentiate between accessible and inaccessible areas. Inspections of accessible areas performed in accordance with IWL will indicate the presence of in

GALL Rev. 1, Line item C-027 is split to differentiate between accessible and inaccessible areas. Inspections of accessible areas performed in accordance with IWL will indicate the presence of in

GALL Rev. 1 Line item C-028 is split to differentiate between accessible and inaccessible areas. Inspections of accessible areas performed in accordance with IWL will indicate the presence of lo

GALL Rev. 1 Line item C-029 is split to differentiate between accessible and inaccessible areas. Inspections of accessible areas performed in accordance with IWL will indicate the presence of los

GALL Rev. 1, Line Item C-030 is corrected to remove accessible areas because a basemat subject to Water - flowing environment should only be inaccessible.#*# #*#ACI 201.2R was developed a

GALL Rev. 1, Line Item C-030 is corrected to remove accessible areas because a basemat subject to Water - flowing environment should only be inaccessible.#*# #*#ACI 201.2R was developed a

GALL Rev. 1 Line item C-031 is split to differentiate between accessible and inaccessible areas. Inspections of accessible areas performed in accordance with IWL will indicate the presence of inc

GALL Rev. 1 Line item C-031 is split to differentiate between accessible and inaccessible areas. Inspections of accessible areas performed in accordance with IWL will indicate the presence of inc

GALL Rev. 1 Line item C-032 is split to differentiate between accessible and inaccessible areas. Inspections of accessible areas performed in accordance with IWL will indicate the presence of inc

As indicated in ACI 349, sustained exposure of concrete to elevated temperature can cause a loss of its mechanical properties (modulus of elasticity and strength) and result in cracking. The rec

As indicated in ACI 349, sustained exposure of concrete to elevated temperature can cause a loss of its mechanical properties (modulus of elasticity and strength) and result in cracking. The rec

As indicated in ACI 349, sustained exposure of concrete to elevated temperature can cause a loss of its mechanical properties (modulus of elasticity and strength) and result in cracking.   The rec

ASME Section XI, Subsection IWL is the applicable aging management program for concrete elements of the BWR and PWR containments. The program element 3, parameters monitored, incluc

ASME Section XI, Subsection IWL is the applicable aging management program for concrete elements of the BWR and PWR containments. The program element 3, parameters monitored, incluc

ASME Section XI, Subsection IWL is the applicable aging management program for concrete elements of the BWR and PWR containments. The program element 3, parameters monitored, incluc

GALL Rev. 1, Line item C-038 is split to diffrentialte between accessible and inaccessible areas. Inspections of accessible areas performed in accordance with IWL will indicate the presence of sur

GALL Rev. 1, Line item C-039 is split to diffrentialte between accessible and inaccessible areas. Inspections of accessible areas performed in accordance with IWL will indicate the presence of sur

GALL Rev. 1, Line item C-039 is split to diffrentialte between accessible and inaccessible areas. Inspections of accessible areas performed in accordance with IWL will indicate the presence of sur

GALL Rev. 1, Line item C-040 is split to diffrentialte between accessible and inaccessible areas. Inspections of accessible areas performed in accordance with IWL will indicate the presence of sur

GALL Rev. 1, Line item C-005 is split to differentiate between accessible and inaccessible areas.   The evaluation basis for a plant-specific program is not changed. Revised AMP includes ground v

GALL Rev.1, Line item C-041 is split to diffrentialte between accessible and inaccessible areas. Inspections of accessible areas performed in accordance with IWL will indicate the presence of surf

GALL Rev.1, Line item C-042 is split to diffrentialte between accessible and inaccessible areas. Inspections of accessible areas performed in accordance with IWL will indicate the presence of sur

GALL Rev. 1, Line item C-005 is split to differentiate between accessible and inaccessible areas.   Revised AMP includes ground water monitoring.

GALL Rev.1, Line item C-043 is split to diffrentialte between accessible and inaccessible areas. Inspections of accessible areas performed in accordance with IWL will indicate the presence of sur

GALL Rev.1, Line Item C-044 is split to separate suppression pool shell component from unbraced downcomers. Unbraced Downcomers are not in scope of XI.S4 and only XI.S1 is applicable. X

GALL Rev. 1, Line item C-046 is split to diffrentiate between accessible and inaccessible areas. Technical basis for further evaluation is not changed.

GALL Rev. 1, Line item C-046 is split to diffrentiate between accessible and inaccessible areas. Technical basis for further evaluation is not changed.

GALL Rev. 1, Line item C-046 is split to diffrentiate between accessible and inaccessible areas. Technical basis for further evaluation is not changed.

XI.S4 is not applicable because the component are not in its scope. ASME Section XI, Subsection IWE element 4) is augmented to require surface examination to detect cracking of these compor

As indicated in ACI 349, sustained exposure of concrete to elevated temperature can cause a loss of its mechanical properties (modulus of elasticity and strength) and result in cracking.   The rec

GALL Rev. 1, Line item C-051 is split to diffrentialte between accessible and inaccessible areas. Inspections of accessible areas performed in accordance with IWL will indicate the presence of sur

AMP XI.M36 revision includes aging Management of elastomer components

AMP XI.M38 revision includes aging Management of elastomer components

An approved precedent exists for accepting One-Time Inspection program as verificationof effectiveness of water chemistry program. As shown in OCNGS SER, Section 3.2.2.2.8, the staff has ac

An approved precedent exists for accepting Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components program as verificationof effectiveness of water chemistry program. A

No Basis Given

No Basis Given

No Basis Given

Aging mechanism of fouling is specific for loss of material.

Aging mechanism of fouling is specific for loss of material.

Aging mechanism of fouling is specific for loss of material.

No Basis Given

No Basis Given

No Basis Given

Aging mechanism of fouling is specific for loss of material.

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Aging mechanism of fouling is specific for loss of material.

An approved precedent exists for accepting One-Time Inspection program as verificationof effectiveness of water chemistry program. As shown in OCNGS SER, Section 3.2.2.2.8 the staff has acc

An approved precedent exists for accepting One-Time Inspection program as verificationof effectiveness of water chemistry program. As shown in OCNGS SER, Section 3.2.2.2.3, the staff has ac

New AMP XI.M41 Issued. No Further Evaluation needed.

Bolting may be either steel or stainless steel and these are the aging effects mechanisms in the stated environment

No Basis Given

No Basis Given

No Basis Given

This line item replaces the previous line-item V.D2-18(EP-2) in Rev1, which should have orignally been associated with subchapter D1.

Loss of preload can occur with both steel and stainless steel bolts.

Bolting may be either steel or stainless steel and these are the aging effects mechanisms in the stated environmentr

An approved precedent exists for accepting One-Time Inspection program as verificationof effectiveness of water chemistry program. As shown in BVPS SER, Section 3.2.2.2.3.3, the staff has ac

New AMP XI.M41 Issued. No Further Evaluation needed.

New AMP XI.M41 Issued. No Further Evaluation needed.

An approved precedent exists for accepting One-Time Inspection program as verificationof effectiveness of water chemistry program. As shown in BVPS SER, Section 3.2.2.2.3.3, the staff has ac

No Basis Given

No Basis Given

No Basis Given

No Basis Given

An approved precedent exists for accepting One-Time Inspection program as verificationof effectiveness of water chemistry program. As shown in OCNGS SER, Section 3.2.2.2.4, the staff has ac

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No Basis Given

No Basis Given

No Basis Given

No Basis Given

No Basis Given

No Basis Given

No Basis Given

No Basis Given

An approved precedent exists for accepting One-Time Inspection program as verification of effectiveness of Lube Oil Analysis program. As shown in WCNGS SER, Section 3.2.2.2.4.1 the staff ha

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No Basis Given

No Basis Given

No Basis Given

No Basis Given

An approved precedent exists for accepting One-Time Inspection program as verification of effectiveness of Lube Oil Analysis program. As shown in WCNGS SER, Section 3.2.2.2.3.4 the staff ha

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An approved precedent exists for accepting One-Time Inspection program as verification of effectiveness of Lube Oil Analysis program. As shown in BVPS SER, Section 3.2.2.2.8.3 the staff has a

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No Basis Given

Panel Review Decision. Dave Alley. To be decided in Phase 3.

An approved precedent exists for accepting One-Time Inspection program as verification of effectiveness of Lube Oil Analysis program. As shown in WCNGS SER, Section 3.2.2.2.4.1 the staff ha

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An approved precedent exists for accepting Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components program as verificationof effectiveness of water chemistry program. A

An approved precedent exists for accepting Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components program as verificationof effectiveness of water chemistry program. A

Component name changed for technical accuracy. Connections do not have a conductor, only insulation.#*#Parenthetical statement added to component for technical clarification. Connections in

Component name changed for technical accuracy. Connections do not have a conductor, only insulation.#*#The term embrittlement, cracking, melting, discoloration, swelling, or loss of dielectric s

GL 2007 - Dated February 7, 2007; GL 2007 Summary Report - Dated November 12, 2008; NRC Letter response to NEI Letter - Dated April 13, 2007 - RESPONSE TO NUCLEAR ENERGY INST

To accurately define the aging effect associated with connector contacts exposed to borated water. The term increased resistance of connection more accurately describes the actual aging effect r

Component name changed to provide a technically accurate exclusion boundary for fuse holders. For AMR purposes, the term active equipment more closely aligns with the LR Rule than Larger A

Panel discussion was to change "Air, indoor uncontrolled" to "Air indoor".##Component name changed to provide a technically accurate exclusion boundary for fuse holders. For AMR purposes, tl

Material change to account for various other metals that may be used for the MEB bus and connections.#*#The term increased resistance of connection more accurately describes the actual agin

The term embrittlement, cracking, melting, discoloration, swelling, or loss of dielectric strength leading to reduced insulation resistance; electrical failure should be consolidated into the actual agin

The term reduced insulation resistance more accurately defines the aging effect associated with h-v insulators. Reduced insulation resistance is also the term defined in GALL Table IX.E.#*#Degr

Fatigue will not cause a loss of material.#*#The term increased resistance of connection more accurately describes the actual aging effect due to oxidation or loss of pre-load. Increased resistance

Fatigue will not cause a loss of material.#*#Loss of conductor strength is not an aging effect for switchyard bus and connections.#*#The corrosion aging mechanism is covered under the oxidatior

Based on 9/21/09 Electrical Panel AMR Meeting, staff decided not to implement the AE change from “Hardening and loss of strength” to “Change in Material Properties” as recommended by NEI.

AEM wording changed to maintain consistency with format established within AMPs based on electrical panel discussions.

The term increased connection resistance more accurately describes the actual aging effect resulting from a loosening of cable connections. Increased resistance of connection is also the term de

High strength structural bolting were monitored under Chapter XI.M18, "Bolting Integrity in Rev. 1 of NUREG 1801 or stress corrosion cracking. In Rev.2 of the NUREG, The bolting is added to the

High strength structural bolting were monitored under Chapter XI.M18, "Bolting Integrity in Rev. 1 of NUREG 1801 or stress corrosion cracking. In Rev.2 of the NUREG, The bolting is added to the

Structural bolting is identified as a separate component for consistency with mechanical systems. The aging effects/mechanisms and the AMP are appropriate for the material/environment combi

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Structural bolting is identified as a separate component for consistency with mechanical systems. The aging effects/mechanisms and the AMP are appropriate for the material/environment combi

GALL Rev.1 Line Item T-001 is split to diffrentiate between accessible and inaccessible areas. The increase in air content from 6% to 8% is acceptable based on ACI-201.2R (to be confirmed) ar

High strength structural bolting were monitored under Chapter XI.M18, "Bolting Integrity in Rev. 1 of NUREG 1801 or stress corrosion cracking. In Rev.2 of the NUREG, The bolting is added to the

Structural bolting is identified as a separate component for consistency with mechanical systems. The aging effects/mechanisms and the AMP are appropriate for the material/environment combi

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Structural bolting is identified as a separate component for consistency with mechanical systems. The aging effects/mechanisms and the AMP are appropriate for the material/environment combi

GALL Rev. 1, Line Item C-039 is split to diffrentiate between accessible and inaccessible areas. #*# #*#Current licensing basis of some plants may not require testing of aggregate reactivity based

High strength structural bolting were monitored under Chapter XI.M18, "Bolting Integrity in Rev. 1 of NUREG 1801 or stress corrosion cracking. In Rev.2 of the NUREG, The bolting is added to the

High strength structural bolting were monitored under Chapter XI.M18, "Bolting Integrity in Rev. 1 of NUREG 1801 or stress corrosion cracking. In Rev.2 of the NUREG, The bolting is added to the

High strength structural bolting were monitored under Chapter XI.M18, "Bolting Integrity in Rev. 1 of NUREG 1801 or stress corrosion cracking. In Rev.2 of the NUREG, The bolting is added to the

Service Level I coatings are used in areas inside the reactor containment where the coating failure could adversely affect the operation of post-accident fluid systems and thereby impair safe shutd

Galvanized steel and aluminum in this environment does not require aging management.

Galvanized steel and aluminum in this environment requires aging management; changed general corrosion to pitting and crevice corrosion; no general corrosion for aluminum or galvanized steel

Structural bolting is identified as a separate component for consistency with mechanical systems. The aging effects/mechanisms and the AMP are appropriate for the material/environment combi

GALL Rev.1, Line item C-041 is split to diffrentialte between accessible and inaccessible areas. Inspections of accessible areas performed in accordance with IWL will indicate the presence of surf

GALL Rev. 1, Line item C-005 is split to differentiate between accessible and inaccessible areas.   Revised AMP includes ground water monitoring.

GALL Rev. 1, Line Item C-031 is split to differentiate between accessible and inaccessible areas.#*# #*#ACI 201.2R was developed after some plants were constructed. Those plants were constru

GALL Rev.1 Line Item C-029 is split to diffrentiate between accessible and inaccessible areas. The increase in air content from 6% to 8% is acceptable based on ACI-201.2R (to be confirmed) ar

GALL Rev. 1, Line item C-025 is split to differentiate between accessible and inaccessible areas. Inspections of accessible areas performed in accordance with IWL will indicate the presence of in

Torus ring girders and downcomers are not containment pressure boundary and not in the scope of 10 CFR Part 50 Appendix J, thus XI.S4 is not applicable. ASME Section XI, Subsection IWE, X

Further evaluation of torus shell corrosion is warranted as a result of OE identified In NRC IN 88-82 and other industrywide operating experience that identified a number of incidences of torus corr

GALL Rev. 1, Line item C-019 is split to distinguish between accessible and inaccessible areas and separate components located in different environment and those that are not containment press

Steel in this environment requires aging management

Structural bolting is identified as a separate component for consistency with mechanical systems. The aging effects/mechanisms and the AMP are appropriate for the material/environment combi

High strength structural bolting were monitored under Chapter XI.M18, "Bolting Integrity in Rev. 1 of NUREG 1801 or stress corrosion cracking. In Rev.2 of the NUREG, The bolting is added to the

High strength structural bolting were monitored under Chapter XI.M18, "Bolting Integrity in Rev. 1 of NUREG 1801 or stress corrosion cracking. In Rev.2 of the NUREG, The bolting is added to the

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Service Level I coatings are used in areas inside the reactor containment where the coating failure could adversely affect the operation of post-accident fluid systems and thereby impair safe shutd

Service Level I coatings are used in areas inside the reactor containment where the coating failure could adversely affect the operation of post-accident fluid systems and thereby impair safe shutd

Structural bolting is identified as a separate component for consistency with mechanical systems. The aging effects/mechanisms and the AMP are appropriate for the material/environment combi

GALL Rev. 1, Line item C-005 is split to differentiate between accessible and inaccessible areas.   Revised AMP includes ground water monitoring.

Structural bolting is identified as a separate component for consistency with mechanical systems. The aging effects/mechanisms and the AMP are appropriate for the material/environment combi

GALL Rev.1, Line item C-043 is split to diffrentialte between accessible and inaccessible areas. Inspections of accessible areas performed in accordance with IWL will indicate the presence of sur

GALL Rev.1 Line Item C-001 is split to diffrentiate between accessible and inaccessible areas. The increase in air content from 6% to 8% is acceptable based on ACI-201.2R (to be confirmed) an

The support skirt is fully embedded in concrete that is located in air - indoor environment and not subject to aggressive chemical attack. The aging effect and AMP of none is consitent with GALL

ASME Section XI, Subsection IWE is the applicable aging management program. The components are not containment pressure boundary; thus are not in scope of 10 CRF Part 50 Appendix J.

GALL Rev. 1, Line item C-046 is split to diffrentiate between accessible and inaccessible areas. Downcomer pipes, and support skirt are not a containment pressure boudary thus 10 CFR Part 50

GALL Rev. 1, Line item C-046 is split to diffrentiate between accessible and inaccessible areas. Downcomer pipes, and support skirt are not a containment pressure boudary thus 10 CFR Part 50

GALL Rev.1, Line Item C-044 is split to separate suppression pool shell component from unbraced downcomers. Unbraced Downcomers are not in scope of XI.S4 and only XI.S1 is applicable. X

The support skirt is fully embedded in concrete that is located in air - indoor environment and not subject to aggressive chemical attack. The aging effect and AMP of none is consitent with GALL

Structural bolting is identified as a separate component for consistency with mechanical systems. The aging effects/mechanisms and the AMP are appropriate for the material/environment combi

GALL Rev. 1, Line item T-005 is split to differentiate between accessible and inaccessible areas.   The evaluation basis for a plant-specific program is not changed.#*# #*# "Reinforced oncrete" wa

Structural bolting is identified as a separate component for consistency with mechanical systems. The aging effects/mechanisms and the AMP are appropriate for the material/environment combi

Structural bolting is identified as a separate component for consistency with mechanical systems. The aging effects/mechanisms and the AMP are appropriate for the material/environment combi

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Structural bolting is identified as a separate component for consistency with mechanical systems. The aging effects/mechanisms and the AMP are appropriate for the material/environment combi

None

GALL Rev. 1, Line item T-005 is split to differentiate between accessible and inaccessible areas.   The evaluation basis for a plant-specific program is not changed.#*# #*# "Reinforced oncrete" wa

GALL Rev. 1, Line Item T-003 is split to diffrentiate between accessible and inaccessible areas. #*# #*#Current licensing basis of some plants may not require testing of aggregate reactivity based

GALL Rev. 1, Line Item T-003 is split to diffrentiate between accessible and inaccessible areas. #*# #*#Current licensing basis of some plants may not require testing of aggregate reactivity based

GALL Rev. 1, Line Item T-003 is split to diffrentiate between accessible and inaccessible areas. #*# #*#Current licensing basis of some plants may not require testing of aggregate reactivity based

GALL Rev. 1, Line Item T-003 is split to diffrentiate between accessible and inaccessible areas. #*# #*#Current licensing basis of some plants may not require testing of aggregate reactivity based

GALL Rev. 1, Line Item T-003 is split to diffrentiate between accessible and inaccessible areas. #*# #*#Current licensing basis of some plants may not require testing of aggregate reactivity based

Structural bolting is identified as a separate component for consistency with mechanical systems. The aging effects/mechanisms and the AMP are appropriate for the material/environment combi

Approved precedents exist for the material/environment combination, the aging effects, and AMPs. As documented in VYNPS SER, Section 3.0.3.2.17, and OCGS SER Sections 3.0.3.2.24 and 3

An approved precedent exits for the material/environment combination, aging effect, and AMP. As documented in VYNPS SER, Section 3.5.2.3.8 , the applicant provided the following informatior

GALL Rev. 1, Line item T-005 is split to differentiate between accessible and inaccessible areas. The evaluation basis for a plant-specific program is not changed.#*# #*# "Reinforced oncrete" wa

GALL Rev. 1, Line item T-005 is split to differentiate between accessible and inaccessible areas. The evaluation basis for a plant-specific program is not changed.#*# #*# "Reinforced oncrete" wa

GALL Rev. 1, Line item T-005 is split to differentiate between accessible and inaccessible areas. The evaluation basis for a plant-specific program is not changed.#*# #*# "Reinforced oncrete" wa

GALL Rev. 1, Line item T-005 is split to differentiate between accessible and inaccessible areas. The evaluation basis for a plant-specific program is not changed.#*# #*# "Reinforced oncrete" wa

GALL Rev. 1, Line item T-005 is split to differentiate between accessible and inaccessible areas. The evaluation basis for a plant-specific program is not changed.#*# #*# "Reinforced oncrete" wa

Structural bolting is identified as a separate component for consistency with mechanical systems. The aging effects/mechanisms and the AMP are appropriate for the material/environment combi

Structural bolting is identified as a separate component for consistency with mechanical systems. The aging effects/mechanisms and the AMPs are appropriate for the material/environment comb

GALL Rev. 1, Line Item T-003 is split to diffrentiate between accessible and inaccessible areas. #*# #*#Current licensing basis of some plants may not require testing of aggregate reactivity based

Structural bolting is identified as a separate component for consistency with mechanical systems. The aging effects/mechanisms and the AMP are appropriate for the material/environment combi

Structural bolting is identified as a separate component for consistency with mechanical systems. The aging effects/mechanisms and the AMP are appropriate for the material/environment combi

Structural bolting is identified as a separate component for consistency with mechanical systems. The aging effects/mechanisms and the AMP are appropriate for the material/environment combi

Structural bolting is identified as a separate component for consistency with mechanical systems. The aging effects/mechanisms and the AMP are appropriate for the material/environment combi

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Structural bolting is identified as a separate component for consistency with mechanical systems. The aging effects/mechanisms and the AMP are appropriate for the material/environment combi

Structural bolting is identified as a separate component for consistency with mechanical systems. The aging effects/mechanisms and the AMPs are appropriate for the material/environment comb

GALL Rev. 1, Line Item T-017 is split to diffrentiate between accessible and inaccessible areas. #*# #*#Current licensing basis of some plants may not require testing of aggregate reactivity based

GALL Rev. 1, Line Item T-002 is split to differentiate between accessible and inaccessible areas.#*#ACI 201.2R was developed after some plants were constructed. Those plants were constructed

GALL Rev.1 Line Item T-001 is split to diffrentiate between accessible and inaccessible areas. The increase in air content from 6% to 8% is acceptable based on ACI-201.2R (to be confirmed) ar

GALL Rev.1 Line Item T-001 is split to diffrentiate between accessible and inaccessible areas. The increase in air content from 6% to 8% is acceptable based on ACI-201.2R (to be confirmed) ar

GALL Rev.1 Line Item T-001 is split to diffrentiate between accessible and inaccessible areas. The increase in air content from 6% to 8% is acceptable based on ACI-201.2R (to be confirmed) ar

GALL Rev.1 Line Item T-001 is split to diffrentiate between accessible and inaccessible areas. The increase in air content from 6% to 8% is acceptable based on ACI-201.2R (to be confirmed) ar

GALL Rev.1 Line Item T-001 is split to diffrentiate between accessible and inaccessible areas. The increase in air content from 6% to 8% is acceptable based on ACI-201.2R (to be confirmed) ar

GALL Rev. 1, Line Item T-003 is split to diffrentiate between accessible and inaccessible areas. #*# #*#Current licensing basis of some plants may not require testing of aggregate reactivity based

Structural bolting is identified as a separate component for consistency with mechanical systems. The aging effects/mechanisms and the AMP are appropriate for the material/environment combi

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Structural bolting is identified as a separate component for consistency with mechanical systems. The aging effects/mechanisms and the AMP are appropriate for the material/environment combi

Structural bolting is identified as a separate component for consistency with mechanical systems. The aging effects/mechanisms and the AMP are appropriate for the material/environment combi

Structural bolting is identified as a separate component for consistency with mechanical systems. The aging effects/mechanisms and the AMP are appropriate for the material/environment combi

N/A

N/A

GALL Rev. 1, Line Item T-002 is split to differentiate between accessible and inaccessible areas.#*#ACI 201.2R was developed after some plants were constructed. Those plants were constructed

GALL Rev. 1, Line Item T-002 is split to differentiate between accessible and inaccessible areas.#*#ACI 201.2R was developed after some plants were constructed. Those plants were constructed

GALL Rev. 1, Line Item T-002 is split to differentiate between accessible and inaccessible areas.#*#ACI 201.2R was developed after some plants were constructed. Those plants were constructed

GALL Rev. 1, Line Item T-002 is split to differentiate between accessible and inaccessible areas.#*#ACI 201.2R was developed after some plants were constructed. Those plants were constructed

GALL Rev. 1, Line Item T-002 is split to differentiate between accessible and inaccessible areas.#*#ACI 201.2R was developed after some plants were constructed. Those plants were constructed

Structural bolting is identified as a separate component for consistency with mechanical systems. The aging effects/mechanisms and the AMP are appropriate for the material/environment combi

Structural bolting is identified as a separate component for consistency with mechanical systems. The aging effects/mechanisms and the AMP are appropriate for the material/environment combi

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Structural bolting is identified as a separate component for consistency with mechanical systems. The aging effects/mechanisms and the AMP are appropriate for the material/environment combi

Structural bolting is identified as a separate component for consistency with mechanical systems. The aging effects/mechanisms and the AMP are appropriate for the material/environment combi

GALL Rev. 1, Line Item T-003 is split to diffrentiate between accessible and inaccessible areas. #*# #*#Current licensing basis of some plants may not require testing of aggregate reactivity based

Structural bolting is identified as a separate component for consistency with mechanical systems. The aging effects/mechanisms and the AMP are appropriate for the material/environment combi

D.Alley Write-Up

D.Alley Write-Up

D.Alley Write-Up

D.Alley Write-Up

D.Alley Write-Up

D.Alley Write-Up

D.Alley Write-Up

D.Alley Write-Up

D.Alley Write-Up

D.Alley Write-Up

D.Alley Write-Up

D.Alley Write-Up

D.Alley Write-Up

D.Alley Write-Up

D.Alley Write-Up

D.Alley Write-Up

D.Alley Write-Up

D.Alley Write-Up

None

D.Alley Write-Up

None

None

None

None

None

None

None

None

D.Alley Write-Up

None

D.Alley Write-Up

None

None

None

None

None

Steel was split up between "Air - indoor, controlled and "Air - indoor, uncontrolled"; now is consistent with mechanical AMRs

None

D.Alley Write-Up

None

None

D.Alley Write-Up

None

None

None

None

None

None

None

None

D.Alley Write-Up

None

None

None

None

None

Correct scope of XI.M8; move some components to M9.

Correct scope of XI.M8. Move some components to M1.

None

None

D.Alley Write-Up

D.Alley Write-Up

D.Alley Write-Up

D.Alley Write-Up

D.Alley Write-Up

D.Alley Write-Up

D.Alley Write-Up

D.Alley Write-Up

None

D.Alley Write-Up

None

D.Alley Write-Up

D.Alley Write-Up

D.Alley Write-Up

D.Alley Write-Up

D.Alley Write-Up

D.Alley Write-Up

D.Alley Write-Up

D.Alley Write-Up

D.Alley Write-Up

None

None

None

None

None

None

This MEAP combination exists in the GALL Report as item V.F-2. Added here for consistency in Chapter VIII.

None

None

None

None

None

None

None

None

None

None

None

None

None

None

GALL Rev. 1, Line Item C-030 is corrected to remove accessible areas because a basemat subject to Water - flowing environment should only be inaccessible.#*# #*#ACI 201.2R was developed a

None

None

None

None

None

None

None

None

None

None

None

GALL Rev. 1, line item C-018 is split to remove components not in scope of IWE. The scope of 2004 edition of ASME Section XI, Subsection IWE as approved in 10 CFR 50.55a does include Sea

None

None

None

None

None

None

None

None

None

None

None

None

None

None

None

None

None

None

None

None

None

None

None

None

GALL Rev. 1, Line Item C-030 is corrected to remove accessible areas because a basemat subject to Water - flowing environment should only be inaccessible.#*# #*#ACI 201.2R was developed a

None

None

None

None

None

None

None

None

None

None

None

None

None

None

None

None

None

None

None

None

None

None

An approved precedent exists for adding this material, environment, aging effect, and program combination to the GALL Report. As shown in TMI SER Section 3.3.2.1.3, the staff accepted the pos

Approved for use at several nuclear power plants

Loss of material is an applicable aging effect in a lubricating oil environment as noted by GALL line VIII.G-19. Aluminum has been added to account for an additional heat exchanger material susc

GALL AMP XI.M29 “Aboveground Steel Tanks”, addresses corrosion of steel storage tanks at inaccessible locations such as tank bottoms supported on earthen or concrete foundations. These li

GALL AMP XI.M29 “Aboveground Steel Tanks”, addresses corrosion of steel storage tanks at inaccessible locations such as tank bottoms supported on earthen or concrete foundations. These li

This recommendation is specific to the external surfaces of Fire Hydrants in fire water systems. The steel, outdoor air (external) and loss of material combination is consistent with other identical m

This recommendation is specific to the external surfaces of Halon and carbon dioxide fire suppression system components. The steel, indoor air (external) and loss of material combination is cons

The corrosion resistance of titanium to indoor or outdoor air environments is a result of the formation of a continuous, stable, highly adherent protective oxide layer on the metal surface. The metal

Titanium has excellent corrosion resistance properties, specifically in chlorine-containing fluids with temperatures less than 160F. The corrosion resistance of titanium is a result of the formation o

The same MEAP combination exists in the GALL Report as item VII.J-15. The only difference in this line item and the proposed line item is that the air is internal instead of external. The location o

Fouling is an applicable mechanism for reduction of heat transfer of heat exchangers in a lubricating oil environment as noted by GALL line V.D1-8. Aluminum has been added to account for an a

GALL Rev. 1, line item C-018 is split to remove components not cover by IWE. Gaskets are not in scope of ASME Section XI, Subsection IWE Program. Loss of sealing due to wear, damage, ero

No failure due to an aging effect of glass components in environments free of hydrofluoric acid, caustics, or hot water have been recorded in industry at the temperatures or during the time periods

Reinforced concrete and asbestos cement pipe/components are mechanical components buried in a soil environment have the same aging effects as structural concrete. An approved precedent (

No failure due to an aging effect of glass components in environments free of hydrofluoric acid, caustics, or hot water have been recorded in industry at the temperatures or during the time periods

The corrosion resistance of titanium to indoor or outdoor air environments is a result of the formation of a continuous, stable, highly adherent protective oxide layer on the metal surface. The metal

Titanium has excellent corrosion resistance properties, specifically in chlorine-containing fluids with temperatures less than 160F. The corrosion resistance of titanium is a result of the formation o

Loss of material is an applicable aging effect in a lubricating oil environment as noted by GALL line VIII.G-19. Aluminum has been added to account for an additional heat exchanger material susc

No failure due to an aging effect of glass components in environments free of hydrofluoric acid, caustics, or hot water have been recorded in industry at the temperatures or during the time periods

No failure due to an aging effect of glass components in environments free of hydrofluoric acid, caustics, or hot water have been recorded in industry at the temperatures or during the time periods

Used at Pilgrim

Used at Beaver Valley

Used at Oyster Creek

Included in RS-0169-2007

Approved for use at several nuclear power plants including Occonee

Approved for use at several nuclear power plants including Palisades

Approved for use at several nuclear power plants

Reinforced concrete and asbestos cement pipe/components are mechanical components in an outdoor air environment have the same aging effects as structural concrete. An approved preceder

D.Alley Write-Up

The same MEAP combination exists in the GALL Report as item VII.J-15. The only difference in this line item and the proposed line item is that the air is internal instead of external. The location o

The same MEAP combination exists in the GALL Report as item VII.J-15. The only difference in this line item and the proposed line item is that the air is internal instead of external. The location o

This MEAP combination exists in GALL Report as line V.F-3. Added here for consistency.

Water chemistry will not manage cracking due to cyclic loading

The support skirt is fully embedded in concrete that is located in air - indoor environment and not subject to aggressive chemical attack. The aging effect and AMP of none is consitent with GALL

Water chemistry will not manage cracking due to cyclic loading

GALL Rev. 1, Line item C-009 is split to diffrentiate between accessible and inaccessible areas. Technical basis for further evaluation is not changed. Beaver Valley, Brunswick, DC Cook are exan

Aluminum has an excellent resistance to corrosion. On a surface freshly abraded and then exposed to air, the oxide film is only 5 to 10 nanometer thick but is highly effective in protecting the alum

This MEAP combination exists in the GALL Report as item V.F-2. Added here for consistency in Chapter VII.

D.Alley Write-Up

D.Alley Write-Up

Fouling is an applicable mechanism for reduction of heat transfer of heat exchangers in a lubricating oil environment as noted by GALL line V.D1-8. Aluminum has been added to account for an a

D.Alley Write-Up

Reinforced concrete and asbestos cement pipe/components are mechanical components in raw water have the same aging effects as structural concrete. An approved precedent exists for adding

As explained in EPRI Report 1002950, Aging Effects for Structures and Structural Components (Structural Tools) Revision 1, masonry block walls are constructed from lightweight concrete blocks

D.Alley Write-Up

D.Alley Write-Up

D.Alley Write-Up

Based on LRAs. Many applicants take exceptions, fuse holder is used as a test point and is subjected to fatigue as a result; the AMP says you don't have to do this but now it is split out this aging

No failure due to an aging effect of glass components in environments free of hydrofluoric acid, caustics, or hot water have been recorded in industry at the temperatures or during the time periods

Same MEAP combination exists in GALL Report items V.F-5 and VII.J-5.

No failure due to an aging effect of glass components in environments free of hydrofluoric acid, caustics, or hot water have been recorded in industry at the temperatures or during the time periods

The same MEAP combination exists in the GALL Report as item VII.J-15. The only difference in this line item and the proposed line item is that the air is internal instead of external. The location o

No failure due to an aging effect of glass components in environments free of hydrofluoric acid, caustics, or hot water have been recorded in industry at the temperatures or during the time periods

No failure due to an aging effect of glass components in environments free of hydrofluoric acid, caustics, or hot water have been recorded in industry at the temperatures or during the time periods

An approved precedent exists for accepting Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components program . As shown in WCGS SER, Section 3.3.2.2.10.5, the staff ha

D.Alley Write-Up

The support skirt is fully embedded in concrete that is located in air - indoor environment and not subject to aggressive chemical attack. The aging effect and AMP of none is consitent with GALL

GALL Rev. 1, Line item C-005 is split to differentiate between accessible and inaccessible areas. Revised AMP includes ground water monitoring.

GALL Rev. 1, Line item C-009 is split to diffrentiate between accessible and inaccessible areas. Technical basis for further evaluation is not changed. Beaver Valley, Brunswick, DC Cook are exan

GALL Rev. 1, Line Item C-039 is split to diffrentiate between accessible and inaccessible areas. #*# #*#Current licensing basis of some plants may not require testing of aggregate reactivity based

No failure due to an aging effect of glass components in environments free of hydrofluoric acid, caustics, or hot water have been recorded in industry at the temperatures or during the time periods

GALL Rev. 1, Line Item C-002 is split to differentiate between accessible and inaccessible areas.#*# #*#ACI 201.2R was developed after some plants were constructed. Those plants were constru

GALL Rev. 1, Line Item C-038 is split to diffrentiate between accessible and inaccessible areas. #*# #*#Current licensing basis of some plants may not require testing of aggregate reactivity based

No failure due to an aging effect of glass components in environments free of hydrofluoric acid, caustics, or hot water have been recorded in industry at the temperatures or during the time periods

No failure due to an aging effect of glass components in environments free of hydrofluoric acid, caustics, or hot water have been recorded in industry at the temperatures or during the time periods

No failure due to an aging effect of glass components in environments free of hydrofluoric acid, caustics, or hot water have been recorded in industry at the temperatures or during the time periods

GALL Rev.1 Line Item T-015 is split to diffrentiate between accessible and inaccessible areas. The increase in air content from 6% to 8% is acceptable based on ACI-201.2R (to be confirmed) ar

ASME Section XI, Subsection IWE is the applicable aging management program. The components are not containment pressure boundary; thus are not in scope of 10 CRF Part 50 Appendix J.

GALL Rev.1 Line Item C-028 is split to diffrentiate between accessible and inaccessible areas. The increase in air content from 6% to 8% is acceptable based on ACI-201.2R (to be confirmed) ar

New ISG

GALL Rev. 1, Line item C-019 is split to distinguish between accessible and inaccessible areas and separate components located in different environment and those that are not containment press

Instances of macrofouling typically occur early in the service life of a component, and are corrected well before the end of the initial license period. However, macrofouling is an applicable Mechan

GALL Rev. 1, Line item C-046 is split to diffrentiate between accessible and inaccessible areas. Downcomer pipes, and support skirt are not a containment pressure boudary thus 10 CFR Part 50

No failure due to an aging effect of glass components in environments free of hydrofluoric acid, caustics, or hot water have been recorded in industry at the temperatures or during the time periods

No failure due to an aging effect of glass components in environments free of hydrofluoric acid, caustics, or hot water have been recorded in industry at the temperatures or during the time periods

GALL Rev. 1, Line Item C-031 is split to differentiate between accessible and inaccessible areas.#*# #*#ACI 201.2R was developed after some plants were constructed. Those plants were constru

Torus ring girders and downcomers are not containment pressure boundary and not in the scope of 10 CFR Part 50 Appendix J, thus XI.S4 is not applicable. ASME Section XI, Subsection IWE, X

No failure due to an aging effect of glass components in environments free of hydrofluoric acid, caustics, or hot water have been recorded in industry at the temperatures or during the time periods

No failure due to an aging effect of glass components in environments free of hydrofluoric acid, caustics, or hot water have been recorded in industry at the temperatures or during the time periods

No failure due to an aging effect of glass components in environments free of hydrofluoric acid, caustics, or hot water have been recorded in industry at the temperatures or during the time periods

Included under external surfaces, but to make them consistent with other sub-chapters, it has been added as a new AMR Item

GALL Rev. 1, Line item C-009 is split to diffrentiate between accessible and inaccessible areas. Technical basis for further evaluation is not changed. Beaver Valley, Brunswick, DC Cook are exan

Clarified the difference between clad components and tube-to-tube sheet welds

GALL Rev. 1, Line Item C-031 is split to differentiate between accessible and inaccessible areas.#*# #*#ACI 201.2R was developed after some plants were constructed. Those plants were constru

GALL Rev. 1, Line Item C-040 is split to diffrentiate between accessible and inaccessible areas. #*# #*#Current licensing basis of some plants may not require testing of aggregate reactivity based

ASME Section XI, Subsection IWE is the applicable aging management program. The components are not containment pressure boundary; thus are not in scope of 10 CRF Part 50 Appendix J.

GALL Rev. 1, Line Item C-004 is split to diffrentiate between accessible and inaccessible areas. #*# #*#Current licensing basis of some plants may not require testing of aggregate reactivity based

Added by Karwoski. Need to get TB

No failure due to an aging effect of glass components in environments free of hydrofluoric acid, caustics, or hot water have been recorded in industry at the temperatures or during the time periods

Added for BWRs, similar to existing R-72. Loss of material of material due to general, pitting and crevise corrosion are viable aging mechanisms for low alloy steel in air with Reactor water leakage

GALL Rev. 1, Line Item T-016 is split to differentiate between accessible and inaccessible areas.#*# #*#ACI 201.2R was developed after some plants were constructed. Those plants were constru

Included under external surfaces, but to make them consistent with other sub-chapters, it has been added as a new AMR Item

GALL Rev. 1, Line item T-019 is split to differentiate between accessible and inaccessible areas.   AMP XI.S6 is revised to include ground water monitoring.

GALL Rev. 1, Line item C-005 is split to differentiate between accessible and inaccessible areas.   Revised AMP includes ground water monitoring.

GALL Rev. 1, Line item C-003 is split to differentiate between accessible and inaccessible areas. Inspections of accessible areas performed in accordance with IWL will indicate the presence of in

Added by Karwoski. Need to get TB

GALL Rev. 1, Line item T-018 is split to differentiate between accessible and inaccessible areas.   The evaluation basis for a plant-specific program is not changed.#*# #*# "Reinforced oncrete" wa

GALL Rev. 1, Line Item T-002 is split to differentiate between accessible and inaccessible areas.#*#ACI 201.2R was developed after some plants were constructed. Those plants were constructed

GALL Rev. 1, Line item C-025 is split to differentiate between accessible and inaccessible areas. Inspections of accessible areas performed in accordance with IWL will indicate the presence of in

GALL Rev.1 Line Item T-001 is split to diffrentiate between accessible and inaccessible areas. The increase in air content from 6% to 8% is acceptable based on ACI-201.2R (to be confirmed) ar

No failure due to an aging effect of glass components in environments free of hydrofluoric acid, caustics, or hot water have been recorded in industry at the temperatures or during the time periods

GALL Rev. 1, Line item C-027 is split to differentiate between accessible and inaccessible areas.   The evaluation basis for a plant-specific program is not changed. Can make global change becau

GALL Rev. 1, Line Item C-051 is split to diffrentiate between accessible and inaccessible areas. #*# #*#Current licensing basis of some plants may not require testing of aggregate reactivity based

Chapter XI.M11B has been created for nickel alloy components

New MEA combination

Changed AERM to include vibratory loading consistent with change in AMP Scope.

Changed AERM to include vibratory loading consistent with change in AMP Scope.

Chapter XI.M11B has been created for nickel alloy components

Former Line R-07 split in two with Class 1 piping going to Chapter IV.C2 and nozzles, safe ends , welds going to IV.D1

Former Line R-07 split in two with Class 1 piping going to Chapter IV.C2 and nozzles, safe ends , welds going to IV.D1

Editorial

Editorial

Loss of preload can occur with both steel and stainless steel bolts.

Changed AMP to say ASME Code components because components are not typically Class 1.

Oyster Creek SER Section 3.1.2.2.2.2 credited XI.M1 for verification of effectivenes of water chemistry.   Dresden SER Section 3.1.2.2.4.3 also credits XI.M1 for verification of effectiveness of water

An approved precedent exists for accepting One-Time Inspection program as verificationof effectiveness of water chemistry program. As shown in TMI SER, Section 3.3.2.2.2.2 the staff has accep

Separated R-024 into two AMR Items because aging management programs are different between nickel alloy and stainless steel. An approved precedent exists for accepting One-Time Inspectio

Separated R-024 into two AMR Items because aging management programs are different between nickel alloy and stainless steel. XI.M11 is being created for nickel-alloy components.

Bolts may be either stainless steel or steel. Wear is not an applicable aging mechanism - check with Omesh (Basis probably is that there is no OE indicating wear. -- Bob Jackson)

Closure bolting is a more general description. Loss of preload can occur with both steel and stainless steel bolts. Environment changed for consistency with other bolting environments.

Closure bolting is a more general description and consistent with other bolting entries. The same aging effect applies for stainless steel.

Loss of preload can occur with both steel and stainless steel bolts. Environment changed for consistency with other bolting environments.

Loss of preload can occur with both steel and stainless steel bolts. Environment changed for consistency with other bolting environments.

New Transition Cone closure weld

XI.M11 did not apply to cladding

Title of the AMP is changed from "Steam Generator Tube Integrity" to "Steam Generator Program."

Title of the AMP is changed from "Steam Generator Tube Integrity" to "Steam Generator Program."

Scope of AMP was expanded to include more than the steam generator tubes.

Revised AMP to delete Water Chemistry because Water Chemistry does not mitigate this aging effect.

Revised AMP to delete Water Chemistry because Water Chemistry does not mitigate this aging effect.

Scope of AMP was expanded to include more than the steam generator tubes.

An approved precedent exists for accepting One-Time Inspection program as verificationof effectiveness of water chemistry program. As shown in SSES SER, Section 3.3.2.2.11 the staff has acce

XI.M3 has been revised to use yield strength instead of tensile. This is consistent with NUREG-1339 and revisions in RG 1.65.

Aging effect is the same with or without cladding. Further evaluation is needed.

Correct scope of XI.M8

XI.M3 has been revised to use yield strength instead of tensile.

Loss of material of material due to general, pitting and crevise corrosion are viable aging mechanisms for low alloy steel in air with (Reactor water leakage environment. Also, this aging effect exist

XI.M3 has been revised to use yield strength instead of tensile.

Chapter XI.M11B has been created for nickel alloy components

New MEA combination

Loss of preload can occur with both steel and stainless steel bolts.

Aging effect is the same with or without cladding. Further evaluation is needed.

Sec XI more stringent that M11B, Code case N-722

Aging effect is the same with or without cladding. Further evaluation is needed.

Chapter XI.M11B has been created for nickel alloy components

Chapter XI.M11B has been created for nickel alloy components

Panel Review Decision. Dave Alley. To be decided in Phase 3.

AMP name change

AMP name change

Editorial

Predecessor was split into two lines because aging effects are managed with different AMPs

Predecessor was split into two lines because aging effects are managed with different AMPs

BWRVIP-134, "Guidelines for Steam Dryer' has been issued and reviewed by the staff, and included in the revised AMP XI.M9 any other material to consider?

New OE

Chapter XI.M11B has been created for nickel alloy components

The staff has previously determined that AMP XI.M32 is capable of detecting the aging effect in these components. Precedents are in the Pilgrim, Vermont Yankee, and Susquehanna SERs.

An approved precedent exists for accepting One-Time Inspection program as verificationof effectiveness of water chemistry program. As shown in SSES SER, Section 3.3.2.2.11 the staff has acce

Editorial

An approved precedent exists for accepting One-Time Inspection program as verificationof effectiveness of water chemistry program. As shown in VYNPS SER, Section 3.4.2.2.2.1 the staff has ac

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Aging mechanism of fouling is specific for loss of material.

Aging mechanism of fouling is specific for loss of material.

Aging mechanism of fouling is specific for loss of material.

Bolting may be either steel or stainless steel and these are the aging effects mechanisms in the stated environment

Loss of preload can occur with both steel and stainless steel bolts.

Bolting may be either steel or stainless steel and these are the aging effects mechanisms in the stated environment

An approved precedent exists for accepting One-Time Inspection program as verificationof effectiveness of water chemistry program. As shown in WCGS SER, Section 3.4.2.2.6, the staff has acc

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An approved precedent exists for accepting Buried Piping and Tanks Inspection program to manage loss of material for stainless steel piping in soil environment. As shown in SSES SER 3.4.2.2.7

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GALL Rev. 1 Line item T-001 is split to differentiate between accessible and inaccessible areas. Inspections of accessible areas performed in accordance with the structures monitoring program

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GALL Rev. 1 Line item T-002 is split to differentiate between accessible and inaccessible areas. Inspections of accessible areas performed in accordance with the structures monitoring program w

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GALL Rev. 1, Line item T-003 is split to diffrentialte between accessible and inaccessible areas. Inspections of accessible areas performed in accordance with the structures monitoring program w

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Chapter XI.S6, “Structures Monitoring Program is revised to require monitoring of the aging effect/mechanism for this component. Further evaluation is not required. "Reinforced concrete" was ch

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GALL Rev.1, Line item T-005 is split to diffrentialte between accessible and inaccessible areas. Inspections of accessible areas performed in accordance withthe structures monitoring program wi

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Reinforced concrete was changed to "concrete" for consistency with Chapter II. Further evaluation technical basis is not changed.

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As indicated in ACI 349, sustained exposure of concrete to elevated temperature can cause a loss of its mechanical properties (modulus of elasticity and strength) and result in cracking.   The rec

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Deleted RPV support shoes for PWR with nozzle supports and Steam generator supports, XI.S3. These components are classified ASME Class 1 component supports which are evaluated in GA

GALL Rev. 1 Line item T-015 is split to differentiate between accessible and inaccessible areas. Inspections of accessible areas performed in accordance with RG. 1.127 or FERC/US Army Corp

GALL Rev. 1 Line item T-016 is split to differentiate between accessible and inaccessible areas. Inspections of accessible areas performed in accordance with Regulatory Guide 1.127, Inspection

GALL Rev.1, Line item T-018 is split to diffrentialte between accessible and inaccessible areas. Inspections of accessible areas performed in accordance with “Regulatory Guide 1.127, Inspection

Changed the component name to High strength structural bolting to be more generic and cover High strength bolting used for ASME Class 1, 2, 3 and MC component supports. High strength str

The scope of Chapter XI.S6, “Structures Monitoring Program” includes monitoring of this component. Thus a further evaluation is not required.#*# #*# "Reinforced concrete" was changed to "con

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Fatigue due to vibratory and cyclic thermal loads is removed from the aging effect/mechanism because the design codes do not require fatigue consideration for sliding surfaces. Excessive wear a

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Changed the component name to High strength structural bolting to be more generic and cover High strength bolting used for ASME Class 1, 2, 3 and MC component supports. High strength str

le Structures Monitoring for managing this aging effect, if applicable. Recommend putting in Element 10 in XI.S6 le Structures Monitoring for managing this aging effect, if applicable.

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uctural bolting was in scope of Chapter XI.M18, "Bolting Integrity" AMP in Rev. 1 of the GALL Report. For Rev.2 of theGALL, High strength structural bolting associated with ASME Component sup uctural bolting was in scope of Chapter XI.M18, "Bolting Integrity" AMP in Rev. 1 of the GALL Report. For Rev.2 of theGALL, High strength structural bolting associated with ASME Component sup

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hanged to "Various aging effects #*#due to various mechanisms in accordance with 10 CFR 50.49”.

ıs accepted the position that the Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components program consistent with GALL AMP XI.M38 is adequate to managethe aging effe

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\s shown in WCGS SER, Section 3.3.2.2.10.3, the staff has accepted the position that the Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components program consistent with

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'.3, the staff has accepted the position that the Buried Piping and Tank Inspection program consistent with GALL AMP XI.M34 is adequate to manage this aging effect. This GALL AMP is revised t

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ıs shown in WCGS SER, Section 3.3.2.2.10.6, the staff has accepted the position that the Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components program consistent with

ss of material (spalling, scaling) and cracking due to feeze-thaw. Thus a further evaluation is not required for accessible areas.

crease in porosity, permeability due to leaching of calcium hydroxide and carbonation. Thus a further evaluation is not required for accessible areas.

rface cracking due to expansion from reaction with aggregates. Thus a further evaluation is not required.

face cracking, loss of bond, and loss of material (spalling, scaling) due to corrosion of embedded steel. Thus a further evaluation is not required.

des monitoring concrete for cracking.

des monitoring concrete for cracking.

des monitoring concrete for cracking.

luction in strength and modulus of elasticity may be accepted by engineering calculation. Calculation replaces design allowables indicated in revision 1 because it may not be the correct term since

J will indicate the presence of Loss of material due to general, pitting, and crevice corrosion . Thus a further evaluation is not required.

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less steel bellows are not in scope of ASME of IWE; but are in scope of 10 CFR Part 50 Appendix J. VT-3 examination may not delect fine cracks that could occur as a result of cyclic loading and

less steel bellows are not in scope of ASME of IWE; but are in scope of 10 CFR Part 50 Appendix J. VT-3 examination may not delect fine cracks that could occur as a result of cyclic loading and

d from a corrosive environment. The 2004 edition of ASME Section XI, Subsection IWE specifies VT-3 examination for containment pressure boundary components including stainless steel and dis

d from a corrosive environment. The 2004 edition of ASME Section XI, Subsection IWE specifies VT-3 examination for containment pressure boundary components including stainless steel and dis

sion, tear, surface cracks, or other defects is specified in ASME Section XI, Subsection IWE for the moisture barrier sion, tear, surface cracks, or other defects is specified in ASME Section XI, Subsection IWE for the moisture barrier

thus 10 CFR Part 50 Appendix J is not applicable. The components are addressed separately and the applicable aging management is identified. The ECCS Suction Header is removed from the

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o element 10) Operating Experience.

crease in porosity and permeability, cracking, loss of material (spalling, scaling) due to aggressive chemical attack. Thus a further evaluation is not required for accessible areas. Mark 2 and Mark

crease in porosity and permeability, cracking, loss of material (spalling, scaling) due to aggressive chemical attack. Thus a further evaluation is not required for accessible areas. Mark 2 and Mark

crease in porosity and permeability, cracking, loss of material (spalling, scaling) due to aggressive chemical attack. Thus a further evaluation is not required for accessible areas. Can make global

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water monitoring.

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I.S1 element 4) is augmented to detect cracking by surface examination.

ɿents during the period of extended operation.

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clude items such as terminal blocks, fuse holders, splices, etc.#*#The term embrittlement, cracking, melting, discoloration, swelling, or loss of dielectric strength leading to reduced insulation resista

strength leading to reduced insulation resistance; electrical failure should be consolidated into the actual aging effect reduced insulation resistance for better technical clarity. Reduced insulation re

TITUTE (NEI) LETTER DATED MARCH 26, 2007 - RE: INTERPRETATION OF GENERIC LETTER (GL) 2007-01, INACCESSIBLE OR UNDERGROUND POWER CABLE FAILURES THAT DISAI

resulting from corrosion of connector contact surfaces due to intrusion of borated water. Increased resistance of connection is also the term defined in GALL Table IX.E.

ssembly.#*#Material change to account for various other metals that may be used for the clamp.#*#The term increased resistance of connection more accurately describes the actual aging effect

he term active equipment more closely aligns with the LR Rule than Larger Assembly.

g effect resulting from thermal cycling and ohmic heating; the aging effects apply to both controlled and uncontrolled. Increased resistance of connection is also the term defined in GALL Table IX.

g effect reduced insulation resistance for better technical clarity. Reduced insulation resistance accurately defines the aging effect associated with MEB insulation and insulators.#*#Electrical failure

adation of insulator quality is to be deleted.

ɛ of connection is also the term defined in GALL Table IX.E

ı aging mechanism.#*#The term increased resistance of connection more accurately describes the actual aging effect due to oxidation or loss of pre-load. Increased resistance of connection resista

Additionally, “Change in Material Properties” is not a term defined in Chapter IX.#*#During conduct of XI.E4 inspections, accessible gaskets and sealants will be inspected for degradation which co efined in GALL Table IX.E. Loosening of bolted connections is to be deleted.

scope of Chapter XI.S6, "Structures Monitoring Program".

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nation and found within the GALL Report.

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ıation and found within the GALL Report.

ıd ACI 301-66 Table 304(b). "Reinforced concrete" is changed to "Concrete" for consistency with Chapter II.

: scope of Chapter XI.S6, "Structures Monitoring Program".

nation and found within the GALL Report.

nation and found within the GALL Report.

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ɿation and found within the GALL Report.

on ASTM C295-54 or ASTM C227-50. Deletion of the year for ASTM C295 and ASTM C227-50 and the addition of other ASTM reactivity tests provide alternate acceptable technical basis for pl

scope of Chapter XI.S6, "Structures Monitoring Program".

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own. The maintenance rule requires that licensees monitor the effectiveness of maintenance for protective coatings within its scope (as discrete systems or components or as part of any SSC), or (

; structural supports not included in electrical AMRs.

nation and found within the GALL Report.

face cracking, loss of bond, and loss of material (spalling, scaling) due to corrosion of embedded steel. Thus a further evaluation is not required.

cted in accordance with ACI 318 which provided the requirements for design and construction of reinforced concrete structures. ACI 318 included factors for water-cement mix proportions, slump,

ıd ACI 301-66 Table 304(b). Ground water/soil is applicable to the wall and the basemat.

crease in porosity and permeability, cracking, loss of material (spalling, scaling) due to aggressive chemical attack. Thus a further evaluation is not required for accessible areas.

‹I.S1 is the only applicable aging management program. There is no torus in Mark 3 containment

rosion. Are seeing a lot of corrosion on the torus, so recoating is needed

sure boundary. Torus ring girder, downcomers, and drywell support skirt are not a containment pressure boudary thus 10 CFR Part 50 Appendix J is not applicable. The components are address

ıation and found within the GALL Report.

: scope of Chapter XI.S6, "Structures Monitoring Program".

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d ACI 301-66 Table 304(b)

Rev.1, Line Item VII.J-21. Talk to Jim Davis about none none concrete scale

) Appendix J is not applicable. The components are addressed separately and the applicable aging management is identified.

) Appendix J is not applicable. The components are addressed separately and the applicable aging management is identified.

I.S1 element 4) is augmented to detect cracking by surface examination.

Rev.1, Line Item VII.J-21.

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nation and found within the GALL Report.

.0.3.2.25, RG 1.127 and the structures monitoring aging management programs are acceptable for managing wood aging effects during the period of extended operation ı: Carbon steel piles driven in undisturbed soils show no significant effects due to corrosion, regardless of the soil type or soil properties. Likewise, piles driven in disturbed soil above the water table

.s changed to "Concrete" for consistency with Chapter II.

.s changed to "Concrete" for consistency with Chapter II.

.s changed to "Concrete" for consistency with Chapter II.

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.s changed to "Concrete" for consistency with Chapter II.

ıation and found within the GALL Report.

ination and found within NUREG-1801 See if this is pre-load or integrity because you can visually inspect for loss of pre-load

on ASTM C295-54 or ASTM C227-50. Deletion of the year for ASTM C295 and ASTM C227-50 and the addition of other ASTM reactivity tests provide alternate acceptable technical basis for pl

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on ASTM C295-54 or ASTM C227-50. Deletion of the year for ASTM C295 and ASTM C227-50 and the addition of other ASTM reactivity tests provide alternate acceptable technical basis for pla

l in accordance with ACI 318 which provided the requirements for design and construction of reinforced concrete structures. ACI 318 included factors for water-cement mix proportions, slump, agg

ıd ACI 301-66 Table 304(b). "Reinforced concrete" is changed to "Concrete" for consistency with Chapter II.

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:fter some plants were constructed. Those plants were constructed in accordance with ACI 318 which provided the requirements for design and construction of reinforced concrete structures. ACI :

ls and Gaskets. Seals and Gaskets are covered in scope of 10 CFR Part 50 Appendix J. Thus Chapter XI.S4, “10 CFR Part 50, Appendix J " is the applicable aging management program

fter some plants were constructed. Those plants were constructed in accordance with ACI 318 which provided the requirements for design and construction of reinforced concrete structures. ACI

sition that copper alloy in an outdoor air environment exhibits a loss of material aging effect and accepted GALL AMP XI.M36 to manage this aging effect. The GALL AMP is revised to include more ceptible to loss of material. As shown in Beaver Valley SER S

nes are proposed to address the aging management for corrosion of s

nes are proposed to address the aging management for corrosion of s

naterial, environment, and aging effects combinations for component external surfaces in GALL Report, Chapter VII.I, “External Surfaces of Components and Miscellaneous Bolting”. Chapter XI.M2

sistent with other identical material, environment, and aging effects combinations for component external surfaces in the GALL Report, Chapter VII.I, “External Surfaces of Components and Miscella

l itself is very reactive, with a high affinity for oxygen, and reforms damage to this layer instantaneously. The oxide film on titanium and titanium alloys provides an effective barrier to attack by most f a continuous, stable, highly adherent protective oxide layer on the metal surface. Titanium and its alloys are fully resistant to all natural waters (raw, untreated fresh or salt water). For these reas

f the environment has no impact on aging effects if the material is the same. This conclusion is also based on the fact that stainless steels are highly resistant to corrosion in dry atmospheres in the

additional heat exchanger material susceptible to reduction of heat transfer due to fouling. As shown in Beaver Valley SER Section 3.3.2.3.15, Lubricating Oil Analysis program and a One-Time Ins

sion, tear, surface cracks, or other defects is specified in ASME Section XI, Subsection IWE for the moisture barrier

s of concern for extended operation. GALL Report lines ite exists for adding this material, environment, and aging effect combination to the GALL Report. As shown in Harris SER page 3-560, the staff accepted the position that cracking, loss of material ar

s of concern for extended operation. Precedent exists in B

l itself is very reactive, with a high affinity for oxygen, and reforms damage to this layer instantaneously. The oxide film on titanium and titanium alloys provides an effective barrier to attack by most

f a continuous, stable, highly adherent protective oxide layer on the metal surface. Titanium and its alloys are fully resistant to all natural waters (raw, untreated fresh or salt water). For these reas

ceptible to loss of material. As shown in Beaver Valley SER Section 3.3.2.3.15, Lubricating Oil Analysis program and a One-Time Inspection program consistent with GALL AMP XI.M32 to verify the

s of concern for extended operation. Precedent exists in Beaver Valley SER, Section 3.3.2.3.6, where the staff has accepted that no aging effect exist for this environment and no aging managemer

s of concern for extended operation. Staff to confirm.

ıt exists for adding this material, environment, aging effect, and program combination to the GALL Report. As shown in Harris SER page 3-560, the staff accepted the position that cracking, loss o

f the environment has no impact on aging effects if the material is the same. This conclusion is also based on the fact that stainless steels are highly resistant to corrosion in dry atmospheres in the

f the environment has no impact on aging effects if the

Rev.1, Line Item VII.J-.AP-3.

nples

inum from corrosion (Hollingsworth and Hunsicker 1979). This conclusion is based on the fact that, on the basis of current industry research and operating experience, dry air on metal will not resu ıdditional heat exchanger material susceptible to reduction of h

ȷ this material, environment, aging effect, and program combination to the GALL Report. As shown in Harris SER page 3-560, the staff accepted the position that cracking, loss of material and chaı

, grout, mortar, and may or may not be reinforced. Thus, the aging effects/mechanisms of masonry block walls are generally the same as those of concrete walls. Concrete walls in this environmeı mechanism because it is independent on the environment while the others are (see LP-23); modified definition of air controlled in Chpt IX to include controlling aging effects. See 3.6.2.3.1 of LRA f

s of concern for extended operation. Staff to confirm.

s of concern for extended operation. Precedent exists in B

f the environment has no impact on aging effects if the s of concern for extended operation. Staff to confirm.

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as accepted the position that the Inspection of Internal Surfaces in

Rev.1, Line Item VII.J-21.

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on ASTM C295-54 or ASTM C227-50. Deletion of the year for ASTM C295 and ASTM C227-50 and the addition of other ASTM reactivity tests provide alternate acceptable technical basis for pl

s of concern for extended operation. Precedent exists in Beaver Valley SER, Section 3.3.2.3.5, where the staff has accepted that no aging effect exist for this environment and no aging manageme

ucted in accordance with ACI 318 which provided the requirements for design and construction of reinforced concrete structures. ACI 318 included factors for water-cement mix proportions, slump,

on ASTM C295-54 or ASTM C227-50. Deletion of the year for ASTM C295 and ASTM C227-50 and the addition of other ASTM reactivity tests provide alternate acceptable technical basis for pl

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s of concern for extended operation. Precedent exists in Beaver Valley SER, Section 3.3.2.3.5, where the staff has accepted that no aging effect exist for this environment and no aging manageme

s of concern for extended operation. Precedent exists in Beaver Valley SER, Section 3.3.2.3.5, where the staff has accepted that no aging effect exist for this environment and no aging manageme

ıd ACI 301-66 Table 304(b). "Reinforced concrete" is changed to "Concrete" for consistency with Chapter II.

ıd ACI 301-66 Table 304(b)

sure boundary. Torus ring girder, downcomers, and drywell support skirt are not a containment pressure boudary thus 10 CFR Part 50 Appendix J is not applicable. The components are address

ism for degradation of metals exposed to raw water if there is a potential for recurrence. As such, macrofouling is considered to be an applicable aging mechanism for titanium and titanium alloys

) Appendix J is not applicable. The components are addressed separately and the applicable aging management is identified.

s of concern for extended operation. GALL Report lines item VIII.I-12, VIII.I-3, and VIII.I-15 addresses stainless steel, copper alloy and steel materials in gas environment with no aging effects identi

s of concern for extended operation. GALL Report lines item VIII.1-12, VIII 1-3, and VIII.1-5 addresses stainless steel, copper alloy and steel materials in gas environment with no aging effects ident

cted in accordance with ACI 318 which provided the requirements for design and construction of reinforced concrete structures. ACI 318 included factors for water-cement mix proportions, slump,

‹I.S1 is the only applicable aging management program.

; of concern for extended operation. GALL Report lines ite

; of concern for extended operation. Precedent exists in Beaver Valley SER, Section 3.3.2.3.6, where the staff has accepted that no aging effect exist for this environment and no aging managemer

; of concern for extended operation. Precedent exists in B

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cted in accordance with ACI 318 which provided the requirements for design and construction of reinforced concrete structures. ACI 318 included factors for water-cement mix proportions, slump,

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on ASTM C295-54 or ASTM C227-50. Deletion of the year for ASTM C295 and ASTM C227-50 and the addition of other ASTM reactivity tests provide alternate acceptable technical basis for pl

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e environment.

cted in accordance with ACI 318 which provided the requirements for design and construction of reinforced concrete structures. ACI 318 included factors for water-cement mix proportions, slump,

crease in porosity and permeability, cracking, loss of material (spalling, scaling) due to aggressive chemical attack. Thus a further evaluation is not required for accessible areas.

s changed to "Concrete" for consistency with Chapter II.#*# Ground water/soil environment is applicable to this component and the aging effects/mechanisms are applicable consistent with TP-212

l in accordance with ACI 318 which provided the requirements for design and construction of reinforced concrete structures. ACI 318 included factors for water-cement mix proportions, slump, agg

crease in porosity and permeability, cracking, loss of material (spalling, scaling) due to aggressive chemical attack. Thus a further evaluation is not required for accessible areas.

ıd ACI 301-66 Table 304(b). "Reinforced concrete" is changed to "Concrete" for consistency with Chapter II.

ꜱ of concern for extended operation. Precedent exists in Beaver Valley SER, Section 3.3.2.3.3, where the staff has accepted that no aging effect exist for this environment and no aging manageme ɹse AMP has been changed to address ground water

on ASTM C295-54 or ASTM C227-50. Deletion of the year for ASTM C295 and ASTM C227-50 and the addition of other ASTM reactivity tests provide alternate acceptable technical basis for pl

' chemistry. NMP-1 SER Section 3.1.A.2.2.4 also credits

›ted the position that a One-Time Inspection program consistent with...

ı program as verification of effectiveness of water chemistry program.

ːpted the position that a One-Time Inspection program consistent with...

s for all low alloy steel material.

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will indicate the presence of loss of material (spalling, scaling) and cracking due to feeze-thaw. Thus a further evaluation is not required for accessible areas. "Reinforced Concrete" is changed to

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will indicate the presence of increase in porosity, permeability due to leaching of calcium hydroxide and carbonation. Thus a further evaluation is not required for accessible areas.

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vill indicate the presence of surface cracking due to expansion from reaction with aggregates. Thus a further evaluation is not required.

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ıange to "concrete" for consistency with Chapter II.

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ll indicate the presence of surface cracking, loss of bond, and loss of material (spalling, scaling) due to corrosion of embedded steel. Thus a further evaluation is not required.#*# #*# "Reinforced c

ll indicate the presence of surface cracking, loss of bond, and loss of material (spalling, scaling) due to corrosion of embedded steel. Thus a further evaluation is not required.#*# #*# "Reinforced c

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· evaluation is not required because AMP XI.S6 requires monitoring concrete for cracking including cracks and distortion due to increased stress levels from settlement.

· evaluation is not required because AMP XI.S6 requires monitoring concrete for cracking including cracks and distortion due to increased stress levels from settlement.

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luction in strength and modulus of elasticity may be accepted by engineering calculation. Calculation replaces design allowables indicated in revision 1because it may not be the correct term since

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luction in strength and modulus of elasticity may be accepted by engineering calculation. Calculation replaces design allowables indicated in revision 1because it may not be the correct term since

LL Rev. 1, Line Item III.B1.1-5. The added materials were identified as alternate to Lubrite in previous LRAs

of Engineeris dam inspections and maintenance programs will indicate the presence of loss of material (spalling, scaling) and cracking due to feeze-thaw. Thus a further evaluation is not required

of Water-Control Structures Associated with Nuclear Power Plants” or the FERC / US Army Corp of Engineers dam inspections and maintenance programs will indicate the presence of increase in

of Water-Control Structures Associated with Nuclear Power Plants” or the FERC / US Army Corp of Engineers dam inspections and maintenance programs will indicate the presence of surface cra

uctural bolting was in scope of Chapter XI.M18, "Bolting Integrity" AMP in Rev. 1 of the GALL Report. For Rev. 2 of theGALL. High-strength structural bolting associated with ASME Component sup crete for consistency with Chapter II.

crete for consistency with Chapter II.

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and debris accumulation can prevent sliding of the surface as required by design. Fluorogold, and Lubrofluor were identified by previous applicant as sliding surfaces materials.

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uctural bolting was in scope of Chapter XI.M18, "Bolting Integrity" AMP in Rev. 1 of the GALL Report. For Rev.2 of theGALL, High strength structural bolting associated with ASME Component su

ɔports is added to the scope of Chapter XI.S3, "ASME Section XI, Subsection IWF".

ports is added to the scope of Chapter XI.S3, "ASME Section XI, Subsection IWF".

ports is added to the scope of Chapter XI.S3, "ASME Section XI, Subsection IWF." The IWF visual examination is augmented to require surface examination of high-strength bolting to detect crac

ports is added to the scope of Chapter XI.S3, "ASME Section XI, Subsection IWF." The IWF visual examination is augmented to require surface examination of high-strength bolting to detect crac

ct of loss of material, because visual inspections are performed on internal surfaces during surveillance testing or maintenance activities. AMP XI.M38 is revised to include other materials besides s

ct of loss of material, because visual inspections are performed on internal surfaces during surveillance testing or maintenance activities. AMP XI.M38 is revised to include other materials besides s

ct of loss of material, because visual inspections are performed on internal surfaces during surveillance testing or maintenance activities. AMP XI.M38 is revised to include other materials besides s

GALL AMP XI.M38 is adequate to manage the aging effect of hardening and loss of strength, because the program includes visual inspection and physical manipulations to detect the aging effects

GALL AMP XI.M38 is adequate to manage the aging effect of hardening and loss of strength, because the program includes visual inspection and physical manipulations to detect the aging effects

GALL AMP XI.M38 is adequate to manage the aging effect of hardening and loss of strength, because the program includes visual inspection and physical manipulations to detect the aging effects

GALL AMP XI.M38 is adequate to manage the aging effect of hardening and loss of strength, because the program includes visual inspection and physical manipulations to detect the aging effects

t. AMP XI.M38 is revised to include stainless steel material.

GALL AMP XI.M38 is adequate to managethe aging effect of loss of material, because visual inspections are performed on internal surfaces during surveillance testing or maintenance activities.

GALL AMP XI.M38 is adequate to managethe aging effect of loss of material, because visual inspections are performed on internal surfaces during surveillance testing or maintenance activities.

GALL AMP XI.M38 is adequate to managethe aging effect of loss of material, because visual inspections are performed on internal surfaces during surveillance testing or maintenance activities.

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o include other materials besides steel.

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GALL AMP XI.M38 is adequate to managethe aging effect of loss of material, because visual inspections are performed on internal surfaces during surveillance testing or maintenance activities. A

GALL AMP XI.M38 is adequate to managethe aging effect of loss of material, because visual inspections are performed on internal surfaces during surveillance testing or maintenance activities. A

GALL AMP XI.M38 is adequate to managethe aging effect of loss of material, because visual inspections are performed on internal surfaces during surveillance testing or maintenance activities. A ı GALL AMP XI.M38 is adequate to managethe aging effect of loss of material, because visual inspections are performed on internal surfaces during surveillance testing or maintenance activities. /

ı GALL AMP XI.M38 is adequate to managethe aging effect of loss of material, because visual inspections are performed on internal surfaces during surveillance testing or maintenance activities. /

e design allowables are given by the ACI Code.

some penetration sleeves and bellows are not designed to allow for a local pressure test (Type B test) and are only pressure tested as part of the containment Type A Integrated Leak Rate Test (

some penetration sleeves and bellows are not designed to allow for a local pressure test (Type B test) and are only pressure tested as part of the containment Type A Integrated Leak Rate Test (

ssimilar metal welds. Examination of stainless steel bellows is not in scope of IWE; but in scope of 10 CFR Part 50 Appendix J. VT-3 examination may not delect fine cracks that could occur as a

ssimilar metal welds. Examination of stainless steel bellows is not in scope of IWE; but in scope of 10 CFR Part 50 Appendix J. VT-3 examination may not delect fine cracks that could occur as a

list because it is evaluated with ECCS piping system as permitted by IWE.

list because it is evaluated with ECCS piping system as permitted by IWE.

3 basements are enclosed within the reactor building, so soil and ground water are not an issue

3 basements are enclosed within the reactor building, so soil and ground water are not an issue

change because AMP has been changed to address ground water

318 included factors for water-cement mix proportions, slump, aggregates, type of mixer, mixing time, and temperature for durable concrete which were later addressed in ACI 201.2R-77. Thus, cc

318 included factors for water-cement mix proportions, slump, aggregates, type of mixer, mixing time, and temperature for durable concrete which were later addressed in ACI 201.2R-77. Thus, cc

design allowables are given by the ACI Code .

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design allowables are given by the ACI Code .

GALL AMP XI.M38 is adequate to managethe aging effect of loss of material, because visual inspections are performed on internal surfaces during surveillance testing or maintenance activities. A

GALL AMP XI.M38 is adequate to managethe aging effect of loss of material, because visual inspections are performed on internal surfaces during surveillance testing or maintenance activities. Al

GALL AMP XI.M38 is adequate to managethe aging effect of loss of material, because visual inspections are performed on internal surfaces during surveillance testing or maintenance activities. Al

ance; electrical failure should be consolidated into the actual aging effect reduced insulation resistance for better technical clarity. Reduced insulation resistance accurately defines the aging effect a

sistance accurately defines the aging effect associated with cable and connection insulation materials used in instrumentation circuits.#*#Electrical failure is a loss of intended function potentially ca

3LE ACCIDENT MITIGATION SYSTEMS OR CAUSE PLANT TRANSIENTS' is basis for including power (greater than or equal to 480 V) cables.#*#To accurately define the aging effect associate resulting from chemical contamination, corrosion, and oxidation. Increased resistance of connection resistance is also the term defined in GALL Table IX.E.#*#Chemical contamination, corrosion, a

E. Loosening of bolted connections is to be deleted.

e is a loss of intended function potentially caused by an aging effect. It is not an aging effect and is not a term defined in GALL Table IX.E.

ance is also the term defined in GALL Table IX.E.

uld permit water to enter the bus.#*#Modify XI.E4 to include some of the elements of M38 for the inspection and detection aging effects for elastomers.

ants that are not committed to a specific year of the standard or ASTM C227-50.#*# #*#For potentially reactive aggregate, the single reference to ACI 201.2R as a basis why reaction with aggrega

demonstrate that their performance or condition is being effectively controlled through the performance of appropriate preventive maintenance, in accordance with 10 CFR 50.65(a)(1) or (a)(2), as

aggregates, type of mixer, mixing time, and temperature for durable concrete which were later addressed in ACI 201.2R-77. Thus, concrete structures constructed to either ACI 318 or 201.2R are

ed separately and the applicable aging management is identified. The ECCS Suction Header is removed from the list because it is evaluated with ECCS piping system as permitted by IWE. The b

demonstrate that their performance or condition is being effectively controlled through the performance of appropriate preventive maintenance, in accordance with 10 CFR 50.65(a)(1) or (a)(2), as

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ants that are not committed to a specific year of the standard or ASTM C227-50.#*# #*#For potentially reactive aggregate, the single reference to ACI 201.2R as a basis why reaction with aggrega

e zone do not reflect any significant corrosion. Therefore, aging management is not required for carbon steel exposed to a weather environment (non-aggressive soil environment). Industry operatir

ants that are not committed to a specific year of the standard or ASTM C227-50.#*# #*#For potentially reactive aggregate, the single reference to ACI 201.2R as a basis why reaction with aggrega

ants that are not committed to a specific year of the standard or ASTM C227-50.#*# #*#For potentially reactive aggregate, the single reference to ACI 201.2R as a basis why reaction with aggrega

gregates, type of mixer, mixing time, and temperature for durable concrete which were later addressed in ACI 201.2R-77. Thus, concrete structures constructed to either ACI 318 or 201.2R are expe

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ıregates, type of mixer, mixing time, and temperature for durable concrete which were later addressed in ACI 201.2R-77. Thus, concrete structures constructed to either ACI 318 or 201.2R are expe

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ants that are not committed to a specific year of the standard or ASTM C227-50.#*# #*#For potentially reactive aggregate, the single reference to ACI 201.2R as a basis why reaction with aggrega

318 included factors for water-cement mix proportions, slump, aggregates, type of mixer, mixing time, and temperature for durable concrete which were later addressed in ACI 201.2R-77. Thus, cc

318 included factors for water-cement mix proportions, slump, aggregates, type of mixer, mixing time, and temperature for durable concrete which were later addressed in ACI 201.2R-77. Thus, cc

e metallic materials besides steel.

27 Fire Water System AMP includes recommendations for inspections of external surfaces of fire hydrants.

aneous Bolting”. The Fire Protection program is revised to recommend visual inspection of halon/carbon dioxide piping during the performance testing of the system.

t gases in wet or dry conditions, including oxygen, nitrogen, NH3 CO2, CO, and H2S. This protection extends to temperatures in excess of 300ºF. The outstanding resistance of titanium and titaniu ons, loss of material due to general, pitting and crevice corrosion is not considered applicable. Stress corrosion cracking of titanium and its alloys is considered applicable in sea water or brackish

e absence of corrosive species, (which would be reflective of indoor uncontrolled air) as cited in Metals Handbook, Volumes 3 (p. 65) and 13 (p. 555), Ninth Edition, American Society for Metals Int

pection program consistent with GALL AMP XI.M32 to verify the effectiveness of the Lube Oil Analysis program are adequate to manage the aging effect of reduction of heat transfer.

nd changes in material properties are appropriate aging effects for reinforced concrete and asbestos cement pipe/components buried in a soil environment. Ref: ASTM C296, Standard Specif

t gases in wet or dry conditions, including oxygen, nitrogen, NH3 CO2, CO, and H2S. This protection extends to temperatures in excess of 300ºF. The outstanding resistance of titanium and titaniu

ons, loss of material due to general, pitting and crevice corrosion is not considered applicable. Stress corrosion cracking of titanium and its alloys is considered applicable in sea water or brackish

e effectiveness of the Lube Oil Analysis program are adequate to manage the aging effect of loss of material.

nt program is required.

f material and changes in material properties for reinforced concrete and asbestos cement pipe/components in an outdoor air environment can be managed with the External Surfaces. Ref: AS

e absence of corrosive species, (which would be reflective of indoor uncontrolled air) as cited in Metals Handbook, Volumes 3 (p. 65) and 13 (p. 555), Ninth Edition, American Society for Metals Int ılt in aging that will be of concern during the period of extended operation. Therefore, aluminum exposed to dried air environment does not have any applicable aging effect. Reference: Hollingswor anges in material properties for reinforced concrete and asbestos cement pipe/components in a raw water environment can be managed with the Open Cycle Cooling Water AMP (XI.M20).

ent are susceptible to loss of material and cracking due to freeze-thaw. Inspections conducted in accordance with the masonry wall aging management program will detect loss of material and crac or Susquehanna Steam Electric Station as an example.

ants that are not committed to a specific year of the standard or ASTM C227-50.#*# #*#For potentially reactive aggregate, the single reference to ACI 201.2R as a basis why reaction with aggrega

nt program is required.

aggregates, type of mixer, mixing time, and temperature for durable concrete which were later addressed in ACI 201.2R-77. Thus, concrete structures constructed to either ACI 318 or 201.2R are

ants that are not committed to a specific year of the standard or ASTM C227-50.#*# #*#For potentially reactive aggregate, the single reference to ACI 201.2R as a basis why reaction with aggrega

nt program is required.

nt program is required.

ed separately and the applicable aging management is identified. The ECCS Suction Header is removed from the list because it is evaluated with ECCS piping system as permitted by IWE. The b

if there is a potential for macrofouling in the raw water environment and velocities are less than 5 ft/s.

fied. with no aging effects.

ified. with no aging effects

aggregates, type of mixer, mixing time, and temperature for durable concrete which were later addressed in ACI 201.2R-77. Thus, concrete structures constructed to either ACI 318 or 201.2R are

ıt program is required.

aggregates, type of mixer, mixing time, and temperature for durable concrete which were later addressed in ACI 201.2R-77. Thus, concrete structures constructed to either ACI 318 or 201.2R are

ants that are not committed to a specific year of the standard or ASTM C227-50.#*# #*#For potentially reactive aggregate, the single reference to ACI 201.2R as a basis why reaction with aggrega

ants that are not committed to a specific year of the standard or ASTM C227-50.#*# #*#For potentially reactive aggregate, the single reference to ACI 201.2R as a basis why reaction with aggrega

aggregates, type of mixer, mixing time, and temperature for durable concrete which were later addressed in ACI 201.2R-77. Thus, concrete structures constructed to either ACI 318 or 201.2R are (

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ˌregates, type of mixer, mixing time, and temperature for durable concrete which were later addressed in ACI 201.2R-77. Thus, concrete structures constructed to either ACI 318 or 201.2R are expe

nt program is required.

ants that are not committed to a specific year of the standard or ASTM C227-50.#*# #*#For potentially reactive aggregate, the single reference to ACI 201.2R as a basis why reaction with aggrega

"Concrete" for consistency with Chapter II.

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design allowables are given by the ACI Code. .Reinforced concrete was changed to "concrete" for consistency with Chapter II.

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design allowables are given by the ACI Code. .Reinforced concrete was changed to "concrete" for consistency with Chapter II.

for accessible areas. "Reinforced Concrete" is changed to "Concrete" for consistency with Chapter II.

porosity, permeability due to leaching of calcium hydroxide and carbonation. Thus a further evaluation is not required for accessible areas.

acking, loss of bond, and loss of material (spalling, scaling) due to corrosion of embedded steel. Thus a further evaluation is not required.#*# #*# "Reinforced oncrete" was changed to "Concrete" f

ports is added to the scope of Chapter XI.S3, "ASME Section XI, Subsection IWF." The IWF visual examination is augmented to require surface examination of high-strength bolting to detect crac

ɔports is added to the scope of Chapter XI.S3, "ASME Section XI, Subsection IWF".

king as required by the Bolting Integrity Program (XI.M18)

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steel.

steel.

steel.

;. AMP M38 is revised to include the aging management of elastomer components.

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. AMP M38 is revised to include the aging management of elastomer components.

AMP XI.M38 is revised to include other materials besides steel.

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ILRT). The frequency of Type A test is every 10 years and could be extended for up to 15 years if a licensee implements Option B, performance based test, in accordance with 10 CFR Part 50 Apr

ILRT). The frequency of Type A test is every 10 years and could be extended for up to 15 years if a licensee implements Option B, performance based test, in accordance with 10 CFR Part 50 Apr

result of SCC and TGSCC and some penetration sleeves and bellows are not designed to allow for a local pressure test (Type B test) and are only pressure tested as part of the containment Type

result of SCC and TGSCC and some penetration sleeves and bellows are not designed to allow for a local pressure test (Type B test) and are only pressure tested as part of the containment Type

oncrete structures constructed to either ACI 318 or 201.2R are expected to be durable. Because these standards were used for both accessible and inaccessible concrete, it is reasonable to concl

oncrete structures constructed to either ACI 318 or 201.2R are expected to be durable. Because these standards were used for both accessible and inaccessible concrete, it is reasonable to concl

AMP XI.M38 is revised to include other materials besides steel.

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associated with cable and connection insulation materials.#*#Electrical failure is a loss of intended function potentially caused by an aging effect. It is not an aging effect and is not a term defined ir

aused by an aging effect. It is not an aging effect and is not a term defined in GALL Table IX.E.

d with wetted power cables. Reduced insulation resistance is also the term defined in GALL Table IX.E.#*#Electrical failure is a loss of intended function potentially caused by an aging effect. It is n and oxidation do not cause fatigue. Ohmic heating, thermal cycling, electrical transients, frequent manipulation, or vibration are aging mechanisms that may cause fatigue. Deleted frequent manipu

gte is not significant does not include provisions for the concrete structures constructed in accordance with ACI 318. ACI 201.2R guidance was developed after many of the earlier nuclear plants w

appropriate.#*#Regulatory Guide 1.54, "Quality Assurance Requirements for Protective Coatings Applied to Water-Cooled Nuclear Power Plants," was issued to describe an acceptable method for

expected to be durable. Because these standards were used for both accessible and inaccessible concrete, it is reasonable to conclude that leaching of calcium hydroxide and carbonation in acc

ɒasis for further evaluation is not changed.

appropriate.#*#Regulatory Guide 1.54, "Quality Assurance Requirements for Protective Coatings Applied to Water-Cooled Nuclear Power Plants," was issued to describe an acceptable method for

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gte is not significant does not include provisions for the concrete structures constructed in accordance with ACI 318. ACI 201.2R guidance was developed after many of the earlier nuclear plants w

ıg experience supports the conclusion that there are no aging effects for carbon steel in a weather environment (non-aggressive soil environment).#*# #*# The staff review concluded that, on the ba

gte is not significant does not include provisions for the concrete structures constructed in accordance with ACI 318. ACI 201.2R guidance was developed after many of the earlier nuclear plants w

gte is not significant does not include provisions for the concrete structures constructed in accordance with ACI 318. ACI 201.2R guidance was developed after many of the earlier nuclear plants we

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oncrete structures constructed to either ACI 318 or 201.2R are expected to be durable.   Because these standards were used for both accessible and inaccessible concrete, it is reasonable to concl

oncrete structures constructed to either ACI 318 or 201.2R are expected to be durable.   Because these standards were used for both accessible and inaccessible concrete, it is reasonable to concl

ım alloys to rural, marine, and urban atmospheric exposure has been documented (Metals Handbook, Ninth Edition, Volume 13, “Corrosion,” American Society of Metals International) An appr‹

raw water systems if the titanium alloy is not ASTM Grade 1, 2, 7, 11, or 12 and contains more than 5% aluminum or more than 0.20% oxygen or any amount of tin. (Metals Handbook, Ninth Edi

ernational, 1980and 1987. Components are not subject to moisture in a dry air environment (and indoor uncontrolled air would have limited humidity and condensation).

ication for Asbestos-Cement Pipe

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TM C296, Standard Specification for Asbestos-Cement Pipe

ernational, 1980and 1987. Components are not subject to moisture in a dry air environment (and indoor uncontrolled air would have limited humidity and condensation).

th, E. H., and Hunsicker, H. Y. 1979. “Corrosion Resistance of Aluminum and Aluminum Alloys,” Metals Handbook Ninth Edition, Volume 2, Properties and Selection: Nonferrous Alloys and Pure I

:king; thus a further evaluation is not required.

ıgte is not significant does not include provisions for the concrete structures constructed in accordance with ACI 318. ACI 201.2R guidance was developed after many of the earlier nuclear plants w

expected to be durable.   Because these standards were used for both accessible and inaccessible concrete, it is reasonable to conclude that leaching of calcium hydroxide and carbonation in acc

.gte is not significant does not include provisions for the concrete structures constructed in accordance with ACI 318. ACI 201.2R guidance was developed after many of the earlier nuclear plants w

ɔasis for further evaluation is not changed.

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gte is not significant does not include provisions for the concrete structures constructed in accordance with ACI 318. ACI 201.2R guidance was developed after many of the earlier nuclear plants w

or consistency with Chapter II.#*# Ground water/soil environment is applicable to this component and the aging effects/mechanisms are applicable consistent with TP-212.

king as required by the Bolting Integrity Program (XI.M18)

›endix J. The ILRT frequency thus may not provide for early detection of cracking such that corrective actions are taken to prevent loss of primary containment leak-tightness. ASME Section XI, S

›endix J. The ILRT frequency thus may not provide for early detection of cracking such that corrective actions are taken to prevent loss of primary containment leak-tightness. ASME Section XI, S

e A test, Integrated Leak Rate Test (ILRT). The frequency of Type A test is every 10 years and could be extended for up to 15 years if a licensee implements the Option B, performance based test, i

e A test, Integrated Leak Rate Test (ILRT). The frequency of Type A test is every 10 years and could be extended for up to 15 years if a licensee implements the Option B, performance based test, i

ude that leaching of calcium hydroxide and carbonation in accessible areas subject to flowing - water represent that of the inaccessible areas. This is consistent with ASME Section XI, Subsectior

ude that leaching of calcium hydroxide and carbonation in accessible areas subject to flowing - water represent that of the inaccessible areas. This is consistent with ASME Section XI, Subsectior

ı GALL Table IX.E.

ıot an aging effect and is not a term defined in GALL Table IX.E.#*#Water treeing is a degradation and long-term failure phenomenon. The degradation mechanism for wetted power cables is mois ılation and vibration as aging mechanisms for LP-23 and added them to LP-31.

'ere constructed. They were constructed in accordance with ACI 318 which provided the requirements for design and construction of reinforced concrete structures. It included the factors for water

· complying with the NRC's quality assurance requirements with regard to protective coatings applied to ferritic steels, stainless steel, zinc-coated (galvanized) steel, concrete, or masonry surfaces (

essible areas subject to flowing - water represent that of the inaccessible areas. This is consistent with ASME Section XI, Subsection IWL, as augmented by 10CFR Part 50.55a.

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ere constructed. They were constructed in accordance with ACI 318 which provided the requirements for design and construction of reinforced concrete structures. It included the factors for water

asis of current industry research and operating experience, the staff finds that a non-aggressive soil on carbon steel at VYNPS will not result in aging that will be of a concern during the period of e

ere constructed. They were constructed in accordance with ACI 318 which provided the requirements for design and construction of reinforced concrete structures. It included the factors for water

ere constructed. They were constructed in accordance with ACI 318 which provided the requirements for design and construction of reinforced concrete structures. It included the factors for water c

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ɔle areas subject to flowing - water represent that of the inaccessible areas.

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ude that leaching of calcium hydroxide and carbonation in accessible areas subject to flowing - water represent that of the inaccessible areas. This is consistent with ASME Section XI, Subsectior

ɔved precedent exists for adding this material, environment, aging effect, and program combination to the GALL Report. As shown in Oyster Creek SER Section 3.3.2.3 page 3-370, the staff accep tion, Volume 11, “Failure Analysis and Prevention,” American Society of Metals International) oved precedent exists for adding this material, environment, aging effect, and program combination to the GALL Report. As shown in Oyster Creek SER Section 3.3.2.3 page 3-370, the staff accep

tion, Volume 11, “Failure Analysis and Prevention,” American Society of Metals International)

Metals, pp. 204-236.

'ere constructed. They were constructed in accordance with ACI 318 which provided the requirements for design and construction of reinforced concrete structures. It included the factors for water

essible areas subject to flowing - water represent that of the inaccessible areas. This is consistent with ASME Section XI, Subsection IWL, as augmented by 10CFR Part 50.55a.

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ɔle areas subject to flowing - water represent that of the inaccessible areas.

ere constructed. They were constructed in accordance with ACI 318 which provided the requirements for design and construction of reinforced concrete structures. It included the factors for water

ubsection IWE (XI.S1) is therefore augmented to require

ubsection IWE (XI.S1) is therefore augmented to require

in accordance with 10 CFR Part 50 Appendix J. The ILRT fr

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ı IWL, as augmented by 10CFR Part 50.55a.

ı IWL, as augmented by 10CFR Part 50.55a.

ture and voltage stress.

cement mix proportions, slump, aggregates, type of mixer

of water-cooled nuclear power plants. The presumpti

of water-cooled nuclear power plants. The presumpti

of water-cooled nuclear power plants. The presumpti

cement mix proportions, slump, aggregates, type of mixer

cement mix proportions, slump, aggregates, type of mixer

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xtended operation. .

cement mix proportions, slump, aggregates, type of mixer

cement mix proportions, slump, aggregates, type of mixer

cement mix proportions, slump, aggregates, type of mixer

cement mix proportions, slump, aggregates, type of mixer

ı IWL, as augmented by 10CFR Part 50.55a. Split for accecssibl

ı IWL, as augmented by 10CFR Part 50.55a. Split for accecssibl

ted the position that titanium in an outdoor air

ɔted the position that titanium in an outdoor air

cement mix proportions, slump, aggregates, type of mixer

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