

Results Tables: Structures and Component Supports

Table 3.5.1 Summary of Aging Management Evaluations in Chapters II and III of NUREG-1801 for Structures and Component Supports

Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
Common Components of All Types of PWR and BWR Containment					
3.5.1- 01	Penetration sleeves, penetration bellows, and dissimilar metal welds	Cumulative fatigue damage (CLB fatigue analysis exists)	TLAA evaluated in accordance with 10 CFR 54.21(c)	Yes, TLAA	Consistent with NUREG-1801. Further evaluation recommended is the evaluation of the TLAA as documented in Section 4.5. Further evaluation documented in Subsection 3.5.2.2.1.6
3.5.1- 02	Penetration sleeves, bellows, and dissimilar metal welds.	Cracking due to cyclic loading; crack initiation and growth due to SCC	Containment ISI and Containment leak rate test	Yes, detection of aging effects is to be evaluated	Consistent with NUREG-1801. Further evaluation documented in Subsection 3.5.2.2.1.7
3.5.1- 03	Penetration sleeves, penetration bellows, and dissimilar metal welds	Loss of material due to corrosion	Containment ISI and Containment leak rate test	No	Consistent with NUREG-1801.
3.5.1- 04	Personnel airlock and equipment hatch	Loss of material due to corrosion	Containment ISI and Containment leak rate test	No	Consistent with NUREG-1801.

Table 3.5.1 Summary of Aging Management Evaluations in Chapters II and III of NUREG-1801 for Structures and Component Supports

Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.5.1- 05	Personnel airlock and equipment hatch	Loss of leak tightness in closed position due to mechanical wear of locks, hinges, and closure mechanism	Containment leak rate test and Plant Technical Specifications	No	Plant-specific aging effect is called loss of material due to wear. Otherwise, consistent with NUREG-1801.
3.5.1- 06	Seals, gaskets, and moisture barriers	Loss of sealant and leakage through containment due to deterioration of joint seals, gaskets, and moisture barriers	Containment ISI and Containment leak rate test	No	Plant-specific aging effects are change in material properties and cracking of seals, gaskets, and moisture barriers. Otherwise, consistent with NUREG-1801.

Table 3.5.1 Summary of Aging Management Evaluations in Chapters II and III of NUREG-1801 for Structures and Component Supports

Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
PWR Concrete (Reinforced and Prestressed) and Steel Containment BWR Concrete (Mark II and III) and Steel (Mark I, II, and III) Containmentment					
3.5.1- 07	Concrete elements: foundation, dome, and wall.	Aging of accessible and inaccessible concrete areas due to leaching of calcium hydroxide, aggressive chemical attack, and corrosion of embedded steel	Containment ISI	Yes, if aging mechanism is significant for inaccessible areas	Plant-specific environment is not conducive to the listed aging effects. Nonetheless, the specified AMP is implemented for these components. Further evaluation documented in Subsection 3.5.2.2.1.1
3.5.1- 08	Concrete elements: foundation	Cracks, distortion, and increases in component stress level due to settlement	Structures Monitoring	No, if within the scope of the applicant's structures monitoring program	Plant-specific environment is not conducive to the listed aging effects. Nonetheless, the specified AMP is implemented for these components. Further evaluation documented in Subsection 3.5.2.2.1.2

Table 3.5.1 Summary of Aging Management Evaluations in Chapters II and III of NUREG-1801 for Structures and Component Supports

Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.5.1- 09	Concrete elements: foundation	Reduction in foundation strength due to erosion of porous concrete subfoundation	Structures Monitoring	No, if within the scope of the applicant's structures monitoring program	Plant-specific environment is not conducive to the listed aging effects. Nonetheless, the specified AMP is implemented for these components. Further evaluation documented in Subsection 3.5.2.2.1.2
3.5.1- 10	Concrete elements: foundation, dome, and wall	Reduction of strength and modulus due to elevated temperature	Plant specific	Yes, for any portions of concrete containment that exceed specified temperature limits	Plant-specific environment is not conducive to the listed aging effects (concrete not exposed to elevated temperature). Nonetheless, the specified AMP is implemented for these components. Further evaluation documented in Subsection 3.5.2.2.1.3
3.5.1- 11	Prestressed containment: tendons and anchorage components	Loss of prestress due to relaxation, shrinkage, creep, and elevated temperature	TLAA evaluated in accordance with 10 CFR 54.21(c)	Yes, TLAA	Consistent with NUREG-1801. Further evaluation recommended is the evaluation of the TLAA as documented in Section 4.5. Further evaluation documented in Subsection 3.5.2.2.1.5

Table 3.5.1 Summary of Aging Management Evaluations in Chapters II and III of NUREG-1801 for Structures and Component Supports

Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.5.1- 12	Steel elements: liner plate and containment shell	Loss of material due to corrosion in accessible and inaccessible areas	Containment ISI and Containment leak rate test	Yes, if corrosion is significant for inaccessible areas	Consistent with NUREG-1801. Inaccessible areas are compared against accessible areas and where warranted, additional inspections are initiated.
3.5.1- 13	BWR Only				
3.5.1- 14	Steel elements: protected by coating	Loss of material due to corrosion in accessible areas only	Protective coating monitoring and maintenance	No	Consistent with NUREG-1801.
3.5.1- 15	Prestressed containment: tendons and anchorage components	Loss of material due to corrosion of prestressing tendons and anchorage components	Containment ISI	No	Consistent with NUREG-1801.
3.5.1- 16	Concrete elements: foundation, dome, and wall	Scaling, cracking, and spalling due to freeze-thaw; expansion and cracking due to reaction with aggregate	Containment ISI	No	Plant-specific environment is not conducive to the listed aging effects. Nonetheless, the specified AMP is implemented for these components.

Table 3.5.1 Summary of Aging Management Evaluations in Chapters II and III of NUREG-1801 for Structures and Component Supports

Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.5.1- 17	BWR Only				
3.5.1- 18	BWR Only				
3.5.1- 19	BWR Only				
Class I Structures					
3.5.1- 20	All Groups except Group 6: accessible interior/exterior concrete & steel components	All types of aging effects	Structures Monitoring	No, if within the scope of the applicant's structures monitoring program	Consistent with NUREG-1801. Components are within the scope of the structures monitoring program. Further evaluation documented in Subsection 3.5.2.2.2.1
3.5.1- 21	Groups 1-3, 5, 7-9: inaccessible concrete components, such as exterior walls below grade and foundation	Aging of inaccessible concrete areas due to aggressive chemical attack, and corrosion of embedded steel	Plant-specific	Yes, if an aggressive below-grade environment exists	Plant-specific below-grade environment is not an aggressive environment. No plant-specific AMP is necessary. Further evaluation documented in Subsection 3.5.2.2.2.2

Table 3.5.1 Summary of Aging Management Evaluations in Chapters II and III of NUREG-1801 for Structures and Component Supports

Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.5.1- 22	Group 6: all accessible/ inaccessible concrete, steel, and earthen components	All types of aging effects, including loss of material due to abrasion, cavitation, and corrosion	Inspection of Water-Control Structures or FERC/US Army Corps of Engineers dam inspections and maintenance	No	Consistent with NUREG-1801.
3.5.1- 23	Group 5: liners	Crack initiation and growth due to SCC; loss of material due to crevice corrosion	Water chemistry and monitoring of spent fuel pool water level	No	Consistent with NUREG-1801.
3.5.1- 24	Groups 1-3, 5, 6: all masonry block walls	Cracking due to restraint, shrinkage, creep, and aggressive environment	Masonry Wall	No	Consistent with NUREG-1801.

Table 3.5.1 Summary of Aging Management Evaluations in Chapters II and III of NUREG-1801 for Structures and Component Supports

Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.5.1- 25	Groups 1-3, 5, 7-9: foundation	Cracks, distortion, and increases in component stress level due to settlement	Structures Monitoring	No, if within the scope of the applicant's structures monitoring program	Plant-specific environment is not conducive to the listed aging effects. Nonetheless, the specified AMP is implemented for these components. Further evaluation documented in Subsection 3.5.2.2.1.2
3.5.1- 26	Groups 1-3, 5-9: foundation	Reduction in foundation strength due to erosion of porous concrete subfoundation	Structures Monitoring	No, if within the scope of the applicant's structures monitoring program	Plant-specific environment is not conducive to the listed aging effects. Nonetheless, the specified AMP is implemented for these components. Further evaluation documented in Subsection 3.5.2.2.1.2
3.5.1- 27	Groups 1-5: concrete	Reduction of strength and modulus due to elevated temperature	Plant-specific	Yes, for any portions of concrete that exceed specified temperature limits	Plant-specific AMR did not identify elevated temperature environment for this component. Nonetheless, the specified AMP is implemented for these components. Further evaluation documented in Subsection 3.5.2.2.1.3

Table 3.5.1 Summary of Aging Management Evaluations in Chapters II and III of NUREG-1801 for Structures and Component Supports

Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.5.1-28	Groups 7, 8: liners	Crack Initiation and growth due to SCC; Loss of material due to crevice corrosion	Plant-specific	Yes	Plant-specific IPA identified no tank liners that are subject to aging management review.
Component Supports					
3.5.1- 29	All Groups: support members: anchor bolts, concrete surrounding anchor bolts, welds, grout pad, bolted connections, etc.	Aging of component supports	Structures Monitoring	No, if within the scope of the applicant's structures monitoring program	Plant-specific AMR results do not include an aging effect. Plant-specific structures monitoring program manages the aging effects on support members that were identified during the AMR based on specific materials and environments. Further evaluation documented in Subsection 3.5.2.2.3.1
3.5.1- 30	Groups B1.1, B1.2, and B1.3: support members: anchor bolts and welds	Cumulative fatigue damage (CLB fatigue analysis exists)	TLAA evaluated in accordance with 10 CFR 54.21(c)	Yes, TLAA	TLAA evaluated in cases where CLB fatigue analysis exists. Further evaluation documented in Subsection 3.5.2.2.3.2

Table 3.5.1 Summary of Aging Management Evaluations in Chapters II and III of NUREG-1801 for Structures and Component Supports

Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.5.1- 31	All Groups: support members: anchor bolts and welds	Loss of material due to boric acid corrosion	Boric acid corrosion	No	Consistent with NUREG-1801.
3.5.1- 32	Groups B1.1, B1.2, and B1.3: support members: anchor bolts, welds, spring hangers, guides, stops, and vibration isolators	Loss of material due to environmental corrosion; loss of mechanical function due to corrosion, distortion, dirt, overload, etc.	ISI	No	Consistent with NUREG-1801.
3.5.1-33	Group B1.1: high strength low-alloy bolts	Crack initiation and growth due to SCC	Bolting integrity	No	High strength low-alloy bolting is not used in plant-specific structural applications.

Table 3.5.2-1: Structures and Component Supports - Reactor Containment and Reactor Containment Internals - Summary of Aging Management Evaluation

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Anchorage/ embedment/ attachment	SSR, SNS	Carbon steel	Protected from weather	Loss of material	Structures Monitoring ASME XI ISI-IWE Containment Leak Rate Testing	II.A1.2-a	3.5.1- 12	A
Basement floor slab (includes sump and instrumentation tunnel)	SSR, SNS, FLB, FB	Concrete	Exposed to weather	None	Structures Monitoring	III.A4.1-d	3.5.1- 20	A, 1, 3
Columns, other walls, hatches	SSR, EN, SNS	Concrete	Exposed to weather	None	Structures Monitoring	III.A4.1-b	3.5.1- 20	A, 1, 3
Dome Cylinder wall, buttress, ring girder	SSR, EN, SNS, MB, FLB, FB	Concrete	Exposed to weather	None	Structures Monitoring ASME XI ISI-IWL	II.A1.1-a	3.5.1- 16	A, 1, 2
Electrical penetrations	SSR, FLB, PB	Carbon steel	Protected from weather	Loss of material	ASME XI ISI-IWE Containment Leak Rate Testing	II.A3.1-a	3.5.1- 03	A

See [Table 2.1-1](#) for definitions of intended function, [Table 3.0-1](#) for definitions of internal environments and [Table 3.0-2](#) for definitions of external environments.

Table 3.5.2-1: Structures and Component Supports - Reactor Containment and Reactor Containment Internals - Summary of Aging Management Evaluation

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Equipment hatch	SSR, EN, MB, PB	Carbon steel	Protected from weather	Loss of material	Structures Monitoring ASME XI ISI-IWE Containment Leak Rate Testing	II.A3.2-a	3.5.1-04	A
Foundation, sub-foundation	SSR, SNS, FLB, FB	Concrete	Exposed to weather	None	Structures Monitoring	II.A1.1-g	3.5.1-09	A, 1, 3
Fuel transfer tube penetration	SSR, MB, FLB, PB	Stainless steel	Protected from weather Exposed to borated water	Loss of material	ASME XI ISI-IWE Containment Leak Rate Testing	II.A3.1-a	3.5.1-03	A
Liner plate	EN, FLB, PB	Carbon steel	Protected from weather	Loss of material	Structures Monitoring ASME XI ISI-IWE Containment Leak Rate Testing	II.A1.2-a	3.5.1-12	A
Mechanical penetrations	SSR, MB, FLB, PB	Carbon steel	Protected from weather	Loss of material	ASME XI ISI-IWE Containment Leak Rate Testing	II.A3.1-a	3.5.1-03	A

See [Table 2.1-1](#) for definitions of intended function, [Table 3.0-1](#) for definitions of internal environments and [Table 3.0-2](#) for definitions of external environments.

Table 3.5.2-1: Structures and Component Supports - Reactor Containment and Reactor Containment Internals - Summary of Aging Management Evaluation

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Personnel airlock Emergency personnel airlock	MB, FLB, PB	Carbon steel	Protected from weather	Loss of material	Structures Monitoring ASME XI ISI-IWE Containment Leak Rate Testing	II.A3.2-a	3.5.1- 04	A
Polar crane	SNS	Carbon steel	Protected from weather	Cumulative fatigue damage	Structures Monitoring	VII B.1-a	3.3.1- 03	A
Pressurizer support foundation	SSR	Concrete	Protected from weather	None	Structures Monitoring	III.B1.2.3-a	3.5.1- 29	C, 1, 3
Pressurizer support steel	SSR, MB, JIS	Carbon steel	Protected from weather	Loss of material	Structures Monitoring ASME XI ISI-IWF	III.A4.2-a	3.5.1- 20	C
Primary and secondary shield walls	SSR, SNS, FLB, FB	Concrete	Protected from weather	None	Structures Monitoring	III.A4.1-b	3.5.1- 20	C, 1, 2
RCP restraints	SSR, SNS	Carbon steel	Protected from weather	Loss of material	Structures Monitoring	III.A4.2-a	3.5.1- 20	C
Reactor missile shield	SSR, EN, MB, SNS	Concrete	Protected from weather	None	Structures Monitoring	III.A4.1-b	3.5.1- 20	C, 1, 2
Reactor vessel support steel	SSR	Carbon steel	Protected from weather	Loss of material	Boric Acid Corrosion Program	III.B1.1.1-b	3.5.1- 31	A

See [Table 2.1-1](#) for definitions of intended function, [Table 3.0-1](#) for definitions of internal environments and [Table 3.0-2](#) for definitions of external environments.

Table 3.5.2-1: Structures and Component Supports - Reactor Containment and Reactor Containment Internals - Summary of Aging Management Evaluation

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Reactor vessel support threaded connections	SSR	Alloy steel	Protected from weather	Cracking	Structures Monitoring ASME XI ISI-IWF	III.B5.1-b	3.5.1- 31	D
Refuel canal	EN	Concrete	Protected from weather	None	Structures Monitoring	III.A5.1-d	3.5.1- 20	A, 2, 4
Refuel maintenance support structure	SSR, SNS	Carbon steel	Protected from weather	Loss of material	Structures Monitoring	III.A4.2-a	3.5.1- 20	C
Refueling machine	SNS	Carbon steel	Protected from weather	Loss of material	Structures Monitoring	III.A4.2-a	3.5.1- 20	C
Steam generator / reactor vessel foundation	SSR	Concrete	Protected from weather	None	Structures Monitoring	III.B1.2.3-a	3.5.1- 29	C, 1, 2
Steam generator support steel	SSR, JIS	Carbon steel	Protected from weather	Loss of material	Boric Acid Corrosion Program	III.B1.1.1-b	3.5.1- 31	A
Structural shapes	SSR, EN, SNS, MB	Carbon steel	Protected from weather	Loss of material	Structures Monitoring	III.A4.2-a	3.5.1- 20	A
Sump penetrations	SSR, HS	Carbon steel	Protected from weather	Loss of material	ASME XI ISI-IWE Containment Leak Rate Testing	II.A3.1-a	3.5.1- 03	A

See [Table 2.1-1](#) for definitions of intended function, [Table 3.0-1](#) for definitions of internal environments and [Table 3.0-2](#) for definitions of external environments.

Table 3.5.2-1: Structures and Component Supports - Reactor Containment and Reactor Containment Internals - Summary of Aging Management Evaluation

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Tendon wires Tendon anchorage	EN	Carbon steel	Protected from weather	Loss of material	ASME XI ISI-IWL	II.A1.3-a	3.5.1- 15	A
Tendon wires Tendon anchorage	SSR	Carbon steel	Protected from weather	Loss of prestress	ASME XI ISI-IWL	II.A1.3-b	3.5.1- 11	A
Threaded fasteners	SSR	Carbon steel	Protected from weather	Loss of material	Structures Monitoring	III.A4.2-a	3.5.1- 20	A
Upper guide structure and its threaded connections	SSR, EN	Stainless steel	Protected from weather Exposed to borated water	Loss of material	ASME XI ISI-IWF			J
Various steel connections	SSR	Carbon steel	Protected from weather	Loss of material	Structures Monitoring ASME XI ISI-IWF	III.B5.1-a	3.5.1- 29	A

See [Table 2.1-1](#) for definitions of intended function, [Table 3.0-1](#) for definitions of internal environments and [Table 3.0-2](#) for definitions of external environments.

Notes for Tables 3.5.2-1 through 3.5.2-X:

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

Plant-specific notes:

1. No aging effects requiring management apply for the concrete with the environment addressed in this report. However, in compliance with the NRC's current position, it will be conservatively included in the stated program(s).
2. Concrete is not exposed to aggressive environment.
3. Below grade environment is non-aggressive.
4. No aging effect if liner plate is maintained.

See [Table 2.1-1](#) for definitions of intended function, [Table 3.0-1](#) for definitions of internal environments and [Table 3.0-2](#) for definitions of external environments.

Results Tables: Electrical Components

Table 3.6.1 Summary of Aging Management Evaluations in Chapter VI of NUREG-1801 for Electrical Components

Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.6.1- 01	Electrical equipment subject to 10 CFR 50.49 environmental qualification (EQ) requirements	Degradation due to various aging mechanisms	Environmental qualification of electric components	Yes, TLAA	EQ equipment is not subject to aging management review because it is not long-lived. EQ equipment is evaluated as a TLAA in Section 4.4. Further Evaluation documented in Subsection 3.6.2.2.1

Table 3.6.1 Summary of Aging Management Evaluations in Chapter VI of NUREG-1801 for Electrical Components

Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.6.1- 02	Electrical cables and connections not subject to 10 CFR 50.49 EQ requirements	Embrittlement, cracking, melting, discoloration, swelling, or loss of dielectric strength leading to reduced insulation resistance (IR); electrical failure caused by thermal/thermooxidative degradation of organics; radiolysis and photolysis (ultraviolet [UV] sensitive materials only) of organics; radiation-induced oxidation; moisture intrusion	Aging management program for electrical cables and connections not subject to 10 CFR 50.49 EQ requirements	No	Consistent with NUREG-1801.

Table 3.6.1 Summary of Aging Management Evaluations in Chapter VI of NUREG-1801 for Electrical Components

Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.6.1- 03	Electrical cables used in instrumentation circuits not subject to 10 CFR 50.49 EQ requirements that are sensitive to reduction in conductor insulation resistance	Embrittlement, cracking, melting, discoloration, swelling, or loss of dielectric strength leading to reduced IR; electrical failure caused by thermal/thermooxidative degradation of organics; radiation-induced oxidation; moisture intrusion	Aging management program for electrical cables used in instrumentation circuits not subject to 10 CFR 50.49 EQ requirements	No	Consistent with NUREG-1801 for non-EQ nuclear instrumentation and radiation monitoring instrumentation cables only.

Table 3.6.1 Summary of Aging Management Evaluations in Chapter VI of NUREG-1801 for Electrical Components

Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.6.1- 04	Inaccessible medium-voltage (2 kV to 15 kV) cables (e.g., installed in conduit or direct buried) not subject to 10 CFR 50.49 EQ requirements	Formation of water trees; localized damage leading to electrical failure (breakdown of insulation) caused by moisture intrusion and water trees	Aging management program for inaccessible medium-voltage cables not subject to 10 CFR 50.49 EQ requirements	No	Consistent with NUREG-1801.
3.6.1- 05	Electrical connectors not subject to 10 CFR 50.49 EQ requirements that are exposed to borated water leakage	Corrosion of connector contact surfaces caused by intrusion of borated water	Boric acid corrosion	No	Consistent with NUREG-1801.

Table 3.6.2-1: Electrical Components - Summary of Aging Management Evaluation

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Electrical cables and connections not subject to 10 CFR 50.49 EQ requirements	Provide electrical connections to specified sections of an electrical circuit to deliver voltage, current, or signals	Insulation material – various organic polymers	Heat or radiation	Reduced insulation resistance (IR), electrical failure	Electrical cables and connections not subject to 10 CFR 50.49 EQ requirements	VI.A.1-a.	3.6.1- 02	A
Electrical cables used in instrumentation circuits not subject to 10 CFR 50.49 EQ requirements that are sensitive to reduction in conductor insulation resistance	Provide electrical connections to specified sections of an electrical circuit to deliver voltage, current, or signals	Insulation material – various organic polymers	Heat or radiation	Reduced insulation resistance (IR), electrical failure	Electrical cables used in instrumentation circuits not subject to 10 CFR 50.49 EQ requirements	VI.A.1-b	3.6.1- 03	B

See [Table 2.1-1](#) for definitions of intended function, [Table 3.0-1](#) for definitions of internal environments and [Table 3.0-2](#) for definitions of external environments.

Table 3.6.2-1: Electrical Components - Summary of Aging Management Evaluation

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Electrical connectors not subject to 10 CFR 50.49 EQ requirements that are exposed to borated water leakage	Provide electrical connections to specified sections of an electrical circuit to deliver voltage, current, or signals	Connector pins – various metals	Borated water leakage	Connector failure	Boric Acid Corrosion	VI.A.2-a.	3.6.1- 05	A
High Voltage Insulators	Portion for SBO, insulate and support an electrical conductor.	Porcelain Cement Steel	Outdoor	Surface contamination Cracking	Transmission Maintenance Program			J, 1
Inaccessible medium-voltage (2kV to 15kV) cables (e.g., installed in conduit or direct buried) not subject to 10 CFR 50.49 EQ requirements	Provide electrical connections to specified sections of an electrical circuit to deliver voltage, current, or signals	Insulation material – various organic polymers	Moisture and voltage stress	Electrical failure (breakdown of insulation)	Inaccessible medium-voltage cables not subject to 10 CFR 50.49 EQ requirements	VI.A.1-c	3.6.1- 04	A

See [Table 2.1-1](#) for definitions of intended function, [Table 3.0-1](#) for definitions of internal environments and [Table 3.0-2](#) for definitions of external environments.

Table 3.6.2-1: Electrical Components - Summary of Aging Management Evaluation

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Uninsulated ground conductors	Provide electrical connections to specified sections of an electrical circuit to deliver voltage, current, or signals	Aluminum Copper	Various	None	None			J

See [Table 2.1-1](#) for definitions of intended function, [Table 3.0-1](#) for definitions of internal environments and [Table 3.0-2](#) for definitions of external environments.

Notes for Tables 3.6.2-1 through 3.6.2-X:

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

Plant-specific notes:

- 1. Program provided by transmission company.

See [Table 2.1-1](#) for definitions of intended function, [Table 3.0-1](#) for definitions of internal environments and [Table 3.0-2](#) for definitions of external environments.