

AMR Standard Notes F-J

- 1. Management of reduction of heat transfer for heat exchanger tubes by the Fuel Oil Chemistry Program (XI.M30)
Reference: Surry SER (ML#19360A020), Section 3.3.2.3.5, page 3-224, (Steel Fuel Oil Radiator Tubes)

VII **Auxiliary Systems**
Table H1 **Diesel Fuel Oil System**

Item	SRP Item (Table ID)	Structure and/or Component	Material	Environment	Aging Effect/Mechanism	Aging Management Program (AMP)/TLAA	Further Evaluation
<u>VII.H1-TBD</u>	<u>3.3-1, TBD</u>	Heat Exchanger Tubes	Steel	Fuel Oil	Reduction of heat transfer due to fouling	AMP XI.M30, "Fuel Oil Chemistry"	No

- 2. Management of loss of coating integrity for compressed air (air, air-dry, condensation environments) steel tanks with internal coatings by the Internal Coatings/Linings for In-Scope Components (XI.M42)
Reference: Surry SER (ML#19360A020), Section 3.3.2.3.5, page 3-225, (Internally Coated Carbon Steel Tanks)

VII **Auxiliary Systems**
Table D **Compressed Air System**

Item	SRP Item (Table ID)	Structure and/or Component	Material	Environment	Aging Effect/Mechanism	Aging Management Program (AMP)/TLAA	Further Evaluation
<u>VII.H1-TBD</u>	<u>3.3-1, TBD</u>	Tank	Metallic with internal coating	air-dry; air; condensation	Loss of coating or lining integrity due to blistering, cracking, flaking, peeling, delamination, rusting, physical damage	AMP XI.M42, "Internal Coatings/Linings for In-Scope Piping, Piping Components, Heat Exchangers, and Tanks"	No

3. Management of loss of material for compressed air (air, air-dry, condensation environments) steel tanks with internal coatings by the Internal Coatings/Linings for In-Scope Components (XI.M42)

Reference: Surry SER (ML#19360A020), Section 3.3.2.3.5, page 3-225, (Internally Coated Carbon Steel Tanks)

**VII Auxiliary Systems
Table D Compressed Air System**

Item	SRP Item (Table ID)	Structure and/or Component	Material	Environment	Aging Effect/Mechanism	Aging Management Program (AMP)/TLAA	Further Evaluation
<u>VII.J-TBD</u>	<u>3.3-1, TBD</u>	Tank	Metallic with internal coating	air-dry; air; condensation	Loss of material due to general, pitting, crevice corrosion	AMP XI.M42, "Internal Coatings/Linings for In-Scope Piping, Piping Components, Heat Exchangers, and Tanks"	No

4. Management of loss of material for nickel alloy strainer components in a fuel oil environment by the Fuel Oil Chemistry Program (XI.M30) and One-Time Inspection Program (XI.M32).

Reference: Surry SER (ML#19360A020), Section 3.3.2.3.4, page 3-224, (Nickel Alloy Strainer Element)

**VII Auxiliary Systems
Table H1 Diesel Fuel Oil System**

Item	SRP Item (Table ID)	Structure and/or Component	Material	Environment	Aging Effect/Mechanism	Aging Management Program (AMP)/TLAA	Further Evaluation
<u>VII.H1-TBD</u>	<u>3.3-1, TBD</u>	Strainer element	Nickel alloy	Fuel oil	Loss of material due to pitting, crevice, corrosion, MIC	AMP XI.M30, "Fuel Oil Chemistry" and AMP XI.M32, "One-Time Inspection"	No

5. TLAA management of the stainless steel spent fuel pool liner plate fatigue.

Reference: Surry SER (ML#19360A020), Section 3.5.2.3.1, page 3-267, (Stainless Steel Spent Fuel Pool Liner Plates)

III Structures and Component Supports
Table A5 Group 5 Structures (Fuel Storage Facility, Refueling Canal)

Item	SRP Item (Table ID)	Structure and/or Component	Material	Environment	Aging Effect/Mechanism	Aging Management Program (AMP)/TLAA	Further Evaluation
<u>III.A5-TBD</u>	<u>3.5.1, TBD</u>	Fuel pool liner	Stainless Steel	Treated water, treated borated water	Cumulative fatigue damage due to fatigue (Only if CLB fatigue analysis exists)	TLAA, SRP-SLR Section 4.7, "Other Plant-Specific Time-Limited Aging Analysis"	Yes

6. Management of cracking or loss of material in subliming compound fireproofing/fire barriers (thermolag, darmatt, and others) by the Fire Protection Program (XI.M26)

Reference: Peach Bottom SER (ML# 19317E013), Section 3.3.2.3.5 (Subliming Compound)

VII Auxiliary Systems
Table G Fire Protection

Item	SRP Item (Table ID)	Structure and/or Component	Material	Environment	Aging Effect/Mechanism	Aging Management Program (AMP)/TLAA	Further Evaluation
<u>VII.G.TBD</u>	<u>3.3-1, TBD</u>	Fireproofing; fire barriers	Subliming compound fireproofing/fire barriers (thermolag, darmatt, and others)	Air	Cracking due to chemical reaction or settlement; or loss of material due to vibration or flaking	AMP XI.M26, "Fire Protection"	No

7. Management of cracking and loss of material in cementitious fireproofing/fire barriers (Cafecote and others) by the Fire Protection Program (XI.M26)

Reference: Peach Bottom SER (ML# 19317E013), Section 3.3.2.3.5 (Cementitious Fireproofing and Penetration Seals)

**VII Auxiliary Systems
Table G Fire Protection**

Item	SRP Item (Table ID)	Structure and/or Component	Material	Environment	Aging Effect/Mechanism	Aging Management Program (AMP)/TLAA	Further Evaluation
<u>VII.G.TBD</u>	<u>3.3-1, TBD</u>	Fireproofing; fire barriers	Cementitious coatings	Air	Cracking due to chemical reaction or settlement; or loss of material due to exfoliation, delamination, or spalling	AMP XI.M26, "Fire Protection"	No

8. Management of cracking and loss of material in aluminum silicate fireproofing/fire barriers (Silicates: maranite, kaowool, and others) by the Fire Protection program (XI.M26)

Reference: Peach Bottom SER (ML# 19317E013), Section 3.3.2.3.5 (Aluminum Silicate Penetration Seals)

**VII Auxiliary Systems
Table G Fire Protection**

Item	SRP Item (Table ID)	Structure and/or Component	Material	Environment	Aging Effect/Mechanism	Aging Management Program (AMP)/TLAA	Further Evaluation
<u>VII.G-TBD</u>	<u>3.3-1, TBD</u>	Fireproofing; fire barriers	Silicates (maranite, kaowool, and others)	Air	Cracking due to settlement; or Loss of material due to flaking	AMP XI.M26, "Fire Protection"	No

9. Management of loss of material/wear in elastomers exposed to condensation by the Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components program (XI.M38)

Justification: Not needed - use SRP Table 3.3-1, item 263

VII Auxiliary Systems
Table F2 Auxiliary and Radwaste Area Ventilation System

Item	SRP Item (Table ID)	Structure and/or Component	Material	Environment	Aging Effect/Mechanism	Aging Management Program (AMP)/TLAA	Further Evaluation
<u>VII.F2-TBD</u>	<u>3.3-1, TBD</u>	Piping, piping components, ducting, ducting components, seals	Polymeric	Condensation	Loss of material due to wear	AMP XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components"	No

10. Management of loss of material/pitting, crevice corrosion in zinc exposed to lubricating oil by the Lubrication Oil Analysis program (XI.M39) and One-Time Inspection program (XI.M32)

Reference: Peach Bottom SER (ML# 19317E013), Section 3.2.2.3.3 (Zinc Piping, Piping Components)

VII Auxiliary Systems
Table H2 Emergency Diesel Generator System

Item	SRP Item (Table ID)	Structure and/or Component	Material	Environment	Aging Effect/Mechanism	Aging Management Program (AMP)/TLAA	Further Evaluation
<u>VII.H2-TBD</u>	<u>3.3-1, TBD</u>	Valve	Zinc	Lubricating Oil	Loss of Material due to pitting and crevice corrosion	AMP XI.M39, "Lubricating Oil Analysis" and AMP XI.M32, "One-Time Inspection"	No

11. Management of loss of material/general, pitting, crevice corrosion in zinc exposed to a condensation environment by the Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components program (XI.M38)

Reference: EPRI 3002011822 Appendix E.3.1.3 and E.3.1.4 indicate, with exception of titanium and associated alloys, all metals of interest are susceptible to general, pitting, and crevice corrosion when wetted and oxygen and/or other contaminants. This is consistent with ASM Handbook Volume 13, 1987, "Corrosion of Zinc and Zinc Alloys".

VII Auxiliary Systems
Table C1 Open-Cycle Cooling Water System (Service Water System)

Item	SRP Item (Table ID)	Structure and/or Component	Material	Environment	Aging Effect/Mechanism	Aging Management Program (AMP)/TLAA	Further Evaluation
VII.C1-TBD	3.3-1, TBD	Valve	Zinc	Condensation	Loss of Material due to general, pitting and crevice corrosion	AMP XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components"	No

12. Management of loss of material/general, pitting, crevice corrosion in carbon steel, stainless steel, and copper alloy exposed to a treated water environment by Water Chemistry (XI.M2) and One-Time Inspection Program (XI.M32) for GALL-SLR Chapter VII PWR Systems (e.g. CVCS or HVAC).

Justification: Provides a treated water environment AMR line in GALL-SLR Chapter VII consistent with those in Chapter VIII

VII Auxiliary Systems
Table E1 Chemical and Volume Control System (PWR)

Item	SRP Item (Table ID)	Structure and/or Component	Material	Environment	Aging Effect/Mechanism	Aging Management Program (AMP)/TLAA	Further Evaluation
VII.E1-TBD	3.3-1, TBD	Piping, piping components, tanks	Stainless Steel; Steel; copper	Treated water	Loss of material due to general (steel only), pitting, crevice	AMP XI.M2, "Water Chemistry" and AMP XI.M32, "One-Time Inspection"	No
VII.E1-TBD	3.3-1, TBD	Piping, piping components, tanks	Stainless Steel	Treated water >60°C (>140°F)	Cracking due to SCC	AMP XI.M2, "Water Chemistry" and AMP XI.M32, "One-Time Inspection"	No

13 AMP XI.E7, High Voltage Insulators:

- 1.) Revise the materials portion of VI.A.LP-32 for management of loss of material in high voltage insulators to include materials associated with polymer insulators (EPR, silicone rubber, FRP and fiberglass).
- 2.) Revise the materials portion of VI.A.LP-28 for management of reduced electrical insulation resistance in high voltage insulators to include toughened glass and materials associated with polymer insulators (EPR, silicone rubber, FRP, and fiberglass).

References: Turkey Point SER (ML# 19191A057), Section 3.6.2.3.1 (Polymer)
 EPRI Insulator Reference Book, 3002010140, Dec 2017, Section 1.6, Section 3.4, Section 5 (Toughened Glass)

VI Electric Components
Table A Equipment Not Subject to 10CFR 50.49 Environmental Qualification Requirements

Item	SRP Item (Table ID)	Structure and/or Component	Material	Environment	Aging Effect/Mechanism	Aging Management Program (AMP)/TLAA	Further Evaluation
<u>VI.A.LP-32</u>	<u>3.6-1, 002</u>	High-voltage electrical insulators	Porcelain; malleable iron; aluminum; galvanized steel; cement; EPR; silicone rubber; FRP; and fiberglass	Air - outdoor	Loss of material due to mechanical wear or corrosion caused by movement of transmission conductors due to significant wind	AMP XI.E7, "High-Voltage Insulators"	No
<u>VI.A.LP-28</u>	<u>3.6-1, 002</u>	High-voltage electrical insulators	Porcelain; malleable iron; aluminum; galvanized steel; cement; EPR; silicone rubber; FRP; fiberglass; and toughened glass	Air - outdoor	Reduced electrical insulation resistance due to presence of cracks, foreign debris, salt, dust, cooling tower plume or industrial effluent contamination	AMP XI.E7, "High-Voltage Insulators"	No

14. Revise reactor vessel internals components to reflect primary, expansion and existing components inspections specified by MRP-227 Rev 1-A. Note new materials for components with stellite wear surfaces.

Reference: Clevis bearing wear surface: MRP-227 Rev 1-A Table 4-9, item W14 (Existing Components)

Radial support key wear surface: MRP 2018-022 Table 4-3 (New Primary Component)

No additional measures components: Adds new material: Stellite

IV Reactor Vessel Internals, and Reactor Coolant System
Table B2 Reactor Vessel Internals (PWR) - Westinghouse

Item	SRP Item (Table ID)	Structure and/or Component	Material	Environment	Aging Effect/Mechanism	Aging Management Program (AMP)/TLAA	Further Evaluation
<u>IV.B2.RP-TBD</u>	<u>3.1-1, TBD</u>	Alignment and interfacing components: clevis bearing wear surface	Stellite	Reactor coolant and neutron flux	Loss of material due to wear	AMP XI.M16A, "PWR Vessel Internals"	Yes
<u>IV.B2.RP-TBD</u>	<u>3.1-1, TBD</u>	Lower internals: radial support key wear surface	Stellite	Reactor coolant and neutron flux	Loss of material due to wear	AMP XI.M16A, "PWR Vessel Internals"	Yes
<u>IV.B2.RP-TBD</u>	<u>3.1-1, TBD</u>	Reactor vessel internal "No Additional Measures" components	Stellite	Reactor coolant and neutron flux	No additional aging management for reactor internal "No Additional Measures" components unless required by ASME Section XI, Examination Category B-N-3 or relevant operating experience exists	AMP XI.M16A, "PWR Vessel Internals"	Yes

15. Management of cracking, blistering, and loss of material in polymeric (fiberglass) tanks exposed to a fuel oil environment by the Fuel Oil Chemistry Program (XI.M30).

Justification: EPRI 3002011822 Appendix C2.1.6 indicates fiberglass is often used for petroleum products because of its corrosion resistance. Fiberglass is susceptible to cracking, blistering, and loss of material in air environments (SRP 3.3.1 item 150) and raw water environments (SRP 3.3.1, item 030a). AMP XI.M30 Fuel Oil Chemistry and XI.M32 One-Time Inspection will confirm unacceptable degradation is not occurring.

**VII Auxiliary Systems
Table H1 Diesel Fuel Oil System**

Item	SRP Item (Table ID)	Structure and/or Component	Material	Environment	Aging Effect/Mechanism	Aging Management Program (AMP)/TLAA	Further Evaluation
<u>VII.H1-TBD</u>	<u>3.3-1, TBD</u>	Tank	Fiberglass	Fuel oil	Cracking, blistering, loss of material due to exposure to ultraviolet light, ozone, radiation, temperature, moisture, or chemical attack	AMP XI.M30 "Fuel Oil Chemistry" and AMP XI.M32 "One-Time Inspection"	No

16. Revise NUREG-2191 AMR Lines VII.C1.A-400 and VII.C3.A-400 to specify “ AMP XI.M20, Open-Cycle Cooling Water System or AMP XI.M38, Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components”.

Justification: Avoids the use of AMR Standard Note E for raw water environment components not covered by NRC GL 89-03.

VII
Table C1 **Auxiliary Systems**
Open-Cycle Cooling Water System (Service Water System)

Item	SRP Item (Table ID)	Structure and/or Component	Material	Environment	Aging Effect/Mechanism	Aging Management Program (AMP)/TLAA	Further Evaluation
<u>VII.C1.A-400</u>	<u>3.3-1, 127</u>	Piping, piping components, tanks	Metallic	Raw water	Loss of material due to recurring internal corrosion	AMP XI.M20, “Open-Cycle Cooling Water System” <u>or</u> AMP XI.M38, “ <u>Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components</u> ”	No

VII
Table C3 **Auxiliary Systems**
Ultimate Heat Sink

Item	SRP Item (Table ID)	Structure and/or Component	Material	Environment	Aging Effect/Mechanism	Aging Management Program (AMP)/TLAA	Further Evaluation
<u>VII.C3.A-400</u>	<u>3.3.1-127</u>	Piping, piping components, tanks	Metallic	Raw water	Loss of material due to recurring internal corrosion	AMP XI.M20, “Open-Cycle Cooling Water System” <u>or</u> AMP XI.M38, “ <u>Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components</u> ”	No