

COMPONENT SUPPORTS

- B1. Supports for ASME Piping and Components
- B2. Supports for Cable Trays, Conduit, HVAC Ducts, TubeTrack, Instrument Tubing, Non-ASME Piping and Components
- B3. Anchorage of Racks, Panels, Cabinets, and Enclosures for Electrical Equipment and Instrumentation
- B4. Supports for Emergency Diesel Generator (EDG), HVAC System Components, and Other Miscellaneous Mechanical Equipment
- B5. Supports for Platforms, Pipe Whip Restraints, Jet Impingement Shields, Masonry Walls, and Other Miscellaneous Structures

(refined outline to be added when issued for public comment)

Explanation of September 30, 2004 changes in preliminary interim draft chapter outline and aging management review (AMR) tables: Within the AMR tables, this update process increases license renewal review efficiency by:

- Consolidating components (combining similar or equivalent components with matching materials, environment and AMP into a single line-item),
- Increasing consistency between **Material/Environment/Aging effects/aging management Program (MEAP)** combinations between systems (some existing MEAPs had multiple definitions that, based on the aging effect, could be broadened to envelope these into a single MEAP),
- Correcting any inconsistencies in the 2001 edition of the GALL Report,
- Updating references to the appropriate aging management programs, and
- Incorporating line-item changes based on approved staff SER positions or interim staff guidance.

The principal effect of this change is that the tables present the MEAP combinations at a higher level, and the prior detail within a structure or component line item is no longer explicitly presented. Consequently, the identifiers for subcomponents within a line item are no longer presented in the tables. As a result, the introductory listings of these subcomponents (originally in text preceding each table) have been deleted.

The following AMR tables contain a revised "Item" column and a new column titled "Link", which was not contained in the July 2001 revision. The "Item" number is a unique identifier that is used for traceability and, as mentioned above, no longer presents the detailed subcomponent identification. The link identifies the original item in the current version of the GALL Report when applicable (items added to this list refer to bases statements not yet available).

By January 30, 2005, the NRC staff plans to issue a revised GALL Report (NUREG-1801) and SRP-LR (NUREG-1800) for public comment. NRC anticipates re-numbering the line-items to provide an improved unique identifier as part of the public comment document. Also as part of the public comment process, the NRC will issue a NUREG documenting the basis for the proposed changes to the GALL Report and the SRP-LR. This NUREG bases document will be an aid for those reviewing the revised documents to understand what was changed and the basis for the proposed changes.

B1. Supports for ASME Piping and Components

B1.1 Class 1

~~B1.1.1 Support Members; Welds; Bolted Connections; Support Anchorage to Building Structure~~

~~B1.1.2 High Strength Bolting for NSSS Component Supports~~

~~B1.1.3 Constant/Variable Load Spring Hangers; Guides; Stops; Sliding Surfaces; Design Clearances; Vibration Isolators~~

~~B1.1.4 Building Concrete at Locations of Expansion and Grouted Anchors; Grout Pads for Support Base Plates~~

B1.2 Class 2 and 3

~~B1.2.1 Support Members; Welds; Bolted Connections; Support Anchorage to Building Structure~~

~~B1.2.2 Constant/Variable Load Spring Hangers; Guides; Stops; Sliding Surfaces; Design Clearances; Vibration Isolators~~

~~B1.2.3 Building Concrete at Locations of Expansion and Grouted Anchors; Grout Pads for Support Base Plates~~

B1.3 Class MC (BWR Containment Supports)

~~B1.3.1 Support Members; Welds; Bolted Connections; Support Anchorage to Building Structure~~

~~B1.3.2 Guides; Stops; Sliding Surfaces; Design Clearances~~

~~B1.3.3 Building Concrete at Locations of Expansion and Grouted Anchors; Grout Pads for Support Base Plates~~

B1. SUPPORTS FOR ASME PIPING AND COMPONENTS

Systems, Structures, and Components

This section addresses supports and anchorage for ASME piping systems and components. It is subdivided into Class 1 (III.B1.1), Class 2 and 3 (III.B1.2), and Class MC (III.B1.3). Applicable aging effects are identified and the aging management review is presented for each applicable combination of support component and aging effect.

System Interfaces

Physical interfaces exist with the structure, system or component being supported and with the building structural element to which the support is anchored. A primary function of supports is to provide anchorage of the supported element for internal and external design basis events, so that the supported element can perform its intended function.

III STRUCTURES AND COMPONENT SUPPORTS B1.1 Class 1							
Item	Link	Structure and/or Component	Material	Environment	Aging Effect/ Mechanism	Aging Management Program (AMP)	Further Evaluation
T-29	III.B1.1.4-a	Building concrete at locations of expansion and grouted anchors; grout pads for support base plates	Reinforced 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 Program”	No, if within the scope of the applicant’s structures monitoring program
T-28	III.B1.1.3-a	Constant and variable load spring hangers; guides; stops; sliding surfaces; design clearances; vibration isolators	Steel and non-steel materials (e.g., lubrite plates, vibration isolators, etc.)	Air – indoor uncontrolled or air - outdoor	Loss of mechanical function/ Corrosion, distortion, dirt, overload, fatigue due to vibratory and cyclic thermal loads; elastomer hardening	Chapter XI.S3, “ASME Section XI, Subsection IWF”	No
T-27	III.B1.1.2-a	High strength bolting for NSSS component supports	Low alloy steel, yield strength >150 ksi	Air – indoor uncontrolled (External)	Cracking/ stress corrosion cracking	Chapter XI.M18, “Bolting Integrity”	No

III STRUCTURES AND COMPONENT SUPPORTS B1.1 Class 1							
Item	Link	Structure and/or Component	Material	Environment	Aging Effect/ Mechanism	Aging Management Program (AMP)	Further Evaluation
TP-8	TP-8	Support members; welds; bolted connections; support anchorage to building structure	Galvanized steel, aluminum	Air – indoor uncontrolled	Loss of material/ galvanic corrosion	Chapter XI.S6, "Structural Monitoring Program"	No
TP-3	TP-3	Support members; welds; bolted connections; support anchorage to building structure	Galvanized steel, aluminum	Air with borated water leakage	Loss of material/ boric acid corrosion	Chapter XI.M10, "Boric Acid Corrosion"	No
TP-5	TP-5	Support members; welds; bolted connections; support anchorage to building structure	Stainless steel	Air – indoor uncontrolled	None	None	No

III STRUCTURES AND COMPONENT SUPPORTS B1.1 Class 1							
Item	Link	Structure and/or Component	Material	Environment	Aging Effect/ Mechanism	Aging Management Program (AMP)	Further Evaluation
TP-4	TP-4	Support members; welds; bolted connections; support anchorage to building structure	Stainless steel	Air with borated water leakage	None	None	No
T-26	III.B1.1.1-c	Support members; welds; bolted connections; support anchorage to building structure	Steel	Air – indoor uncontrolled	Cumulative fatigue damage/ 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 Standard Review Plan, Section 4.3, "Metal Fatigue" for acceptable methods for meeting the requirements of 10 CFR 54.21(c)(1).	Yes, TLAA
T-24	III.B1.1.1-a	Support members; welds; bolted connections; support anchorage to building structure	Steel	Air – indoor uncontrolled or air outdoor	Loss of material/ general and pitting corrosion	Chapter XI.S3, "ASME Section XI, Subsection IWF"	No

III STRUCTURES AND COMPONENT SUPPORTS							
B1.1 Class 1							
Item	Link	Structure and/or Component	Material	Environment	Aging Effect/ Mechanism	Aging Management Program (AMP)	Further Evaluation
T-25	III.B1.1.1-b	Support members; welds; bolted connections; support anchorage to building structure	Steel	Air with borated water leakage	Loss of material/ boric acid corrosion	Chapter XI.M10, "Boric Acid Corrosion"	No

III STRUCTURES AND COMPONENT SUPPORTS B1.2 Class 2 and 3							
Item	Link	Structure and/or Component	Material	Environment	Aging Effect/ Mechanism	Aging Management Program (AMP)	Further Evaluation
T-29	III.B1.2.3-a	Building concrete at locations of expansion and grouted anchors; grout pads for support base plates	Reinforced 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 Program”	No, if within the scope of the applicant’s structures monitoring program
T-28	III.B1.2.2-a	Constant and variable load spring hangers; guides; stops; sliding surfaces; design clearances; vibration isolators	Steel and non-steel materials (e.g., lubrite plates, vibration isolators, etc.)	Air – indoor uncontrolled or air - outdoor	Loss of mechanical function/ Corrosion, distortion, dirt, overload, fatigue due to vibratory and cyclic thermal loads; elastomer hardening	Chapter XI.S3, “ASME Section XI, Subsection IWF”	No
TP-8	TP-8	Support members; welds; bolted connections; support anchorage to building structure	Galvanized steel, aluminum	Air – indoor uncontrolled	Loss of material/ galvanic corrosion	Chapter XI.S6, “Structural Monitoring Program”	No

III STRUCTURES AND COMPONENT SUPPORTS B1.2 Class 2 and 3							
Item	Link	Structure and/or Component	Material	Environment	Aging Effect/ Mechanism	Aging Management Program (AMP)	Further Evaluation
TP-3	TP-3	Support members; welds; bolted connections; support anchorage to building structure	Galvanized steel, aluminum	Air with borated water leakage	Loss of material/ boric acid corrosion	Chapter XI.M10, "Boric Acid Corrosion"	No
TP-5	TP-5	Support members; welds; bolted connections; support anchorage to building structure	Stainless steel	Air – indoor uncontrolled	None	None	No
TP-4	TP-4	Support members; welds; bolted connections; support anchorage to building structure	Stainless steel	Air with borated water leakage	None	None	No

III STRUCTURES AND COMPONENT SUPPORTS B1.2 Class 2 and 3							
Item	Link	Structure and/or Component	Material	Environment	Aging Effect/ Mechanism	Aging Management Program (AMP)	Further Evaluation
T-26	III.B1.2.1-c	Support members; welds; bolted connections; support anchorage to building structure	Steel	Air – indoor uncontrolled	Cumulative fatigue damage/ 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 Standard Review Plan, Section 4.3, "Metal Fatigue" for acceptable methods for meeting the requirements of 10 CFR 54.21(c)(1).	Yes, TLAA
T-24	III.B1.2.1-a	Support members; welds; bolted connections; support anchorage to building structure	Steel	Air – indoor uncontrolled or air outdoor	Loss of material/ general and pitting corrosion	Chapter XI.S3, "ASME Section XI, Subsection IWF"	No
T-25	III.B1.2.1-b	Support members; welds; bolted connections; support anchorage to building structure	Steel	Air with borated water leakage	Loss of material/ boric acid corrosion	Chapter XI.M10, "Boric Acid Corrosion"	No

III STRUCTURES AND COMPONENT SUPPORTS B1.3 Class MC (BWR Containment Supports)							
Item	Link	Structure and/or Component	Material	Environment	Aging Effect/ Mechanism	Aging Management Program (AMP)	Further Evaluation
T-29	III.B1.3.3-a	Building concrete at locations of expansion and grouted anchors; grout pads for support base plates	Reinforced 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 Program”	No, if within the scope of the applicant’s structures monitoring program
T-28	III.B1.3.2-a	Constant and variable load spring hangers; guides; stops; sliding surfaces; design clearances; vibration isolators	Steel and non-steel materials (e.g., lubrite plates, vibration isolators, etc.)	Air – indoor uncontrolled or air - outdoor	Loss of mechanical function/ Corrosion, distortion, dirt, overload, fatigue due to vibratory and cyclic thermal loads; elastomer hardening	Chapter XI.S3, “ASME Section XI, Subsection IWF”	No
TP-8	TP-8	Support members; welds; bolted connections; support anchorage to building structure	Galvanized steel, aluminum	Air – indoor uncontrolled	Loss of material/ galvanic corrosion	Chapter XI.S6, “Structural Monitoring Program”	No

III STRUCTURES AND COMPONENT SUPPORTS B1.3 Class MC (BWR Containment Supports)							
Item	Link	Structure and/or Component	Material	Environment	Aging Effect/ Mechanism	Aging Management Program (AMP)	Further Evaluation
TP-3	TP-3	Support members; welds; bolted connections; support anchorage to building structure	Galvanized steel, aluminum	Air with borated water leakage	Loss of material/ boric acid corrosion	Chapter XI.M10, "Boric Acid Corrosion"	No
TP-5	TP-5	Support members; welds; bolted connections; support anchorage to building structure	Stainless steel	Air – indoor uncontrolled	None	None	No
TP-4	TP-4	Support members; welds; bolted connections; support anchorage to building structure	Stainless steel	Air with borated water leakage	None	None	No

III STRUCTURES AND COMPONENT SUPPORTS B1.3 Class MC (BWR Containment Supports)							
Item	Link	Structure and/or Component	Material	Environment	Aging Effect/ Mechanism	Aging Management Program (AMP)	Further Evaluation
T-26	III.B1.3.1-b	Support members; welds; bolted connections; support anchorage to building structure	Steel	Air – indoor uncontrolled	Cumulative fatigue damage/ 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 Standard Review Plan, Section 4.3, "Metal Fatigue" for acceptable methods for meeting the requirements of 10 CFR 54.21(c)(1).	Yes, TLAA
T-24	III.B1.3.1-a	Support members; welds; bolted connections; support anchorage to building structure	Steel	Air – indoor uncontrolled or air outdoor	Loss of material/ general and pitting corrosion	Chapter XI.S3, "ASME Section XI, Subsection IWF"	No

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~~**B2. SUPPORTS FOR CABLE TRAYS, CONDUIT, HVAC DUCTS, TUBETRACK,
INSTRUMENT TUBING, NON-ASME PIPING AND COMPONENTS**~~

~~B2.1 Support Members; Welds; Bolted Connections; Support Anchorage to Building Structure~~

~~B2.2 Building Concrete at Locations of Expansion and Grouted Anchors; Grout Pads for Support Base Plates~~

B2. SUPPORTS FOR CABLE TRAYS, CONDUIT, HVAC DUCTS, TUBETRACK, INSTRUMENT TUBING, NON-ASME PIPING AND COMPONENTS

Systems, Structures, and Components

This section addresses supports and anchorage for cable trays, conduit, HVAC ducts, tube track, instrument tubing, and non-ASME piping and components. Applicable aging effects are identified and the aging management review is presented for each applicable combination of support component and aging effect.

System Interfaces

Physical interfaces exist with the structure, system or component being supported and with the building structural element to which the support is anchored. A primary function of supports is to provide anchorage of the supported element for internal and external design basis events, so that the supported element can perform its intended function.

September 2004

III B2-3

Proposed Draft NUREG-1801

III B2 STRUCTURES AND COMPONENT SUPPORTS Supports for Cable Trays, Conduit, HVAC Ducts, TubeTrack, Instrument Tubing, Non-ASME Piping and Components							
Item	Link	Structure and/or Component	Material	Environment	Aging Effect/ Mechanism	Aging Management Program (AMP)	Further Evaluation
T-29	III.B2.2-a	Building concrete at locations of expansion and grouted anchors; grout pads for support base plates	Reinforced 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 Program”	No, if within the scope of the applicant’s structures monitoring program
TP-2	TP-2	Sliding support bearings and sliding support surfaces	Lubrite	Air – outdoor	Loss of mechanical function/ Corrosion, distortion, dirt, overload, fatigue due to vibratory and cyclic thermal loads; elastomer hardening	Chapter XI.S6, “Structural Monitoring Program”	No
TP-1	TP-1	Steel components: Radial beam seats in BWR drywell; RPV support shoes for PWR with nozzle supports; other supports	Lubrite	Air – indoor uncontrolled	Loss of mechanical function/ Corrosion, distortion, dirt, overload, fatigue due to vibratory and cyclic thermal loads; elastomer hardening	Chapter XI.S6, “Structural Monitoring Program”	No

III STRUCTURES AND COMPONENT SUPPORTS B2 Supports for Cable Trays, Conduit, HVAC Ducts, TubeTrack, Instrument Tubing, Non-ASME Piping and Components							
Item	Link	Structure and/or Component	Material	Environment	Aging Effect/ Mechanism	Aging Management Program (AMP)	Further Evaluation
TP-8	TP-8	Support members; welds; bolted connections; support anchorage to building structure	Galvanized steel, aluminum	Air – indoor uncontrolled	Loss of material/ galvanic corrosion	Chapter XI.S6, "Structural Monitoring Program"	No
TP-3	TP-3	Support members; welds; bolted connections; support anchorage to building structure	Galvanized steel, aluminum	Air with borated water leakage	Loss of material/ boric acid corrosion	Chapter XI.M10, "Boric Acid Corrosion"	No
TP-6	TP-6	Support members; welds; bolted connections; support anchorage to building structure	Galvanized steel, aluminum, stainless steel	Air – outdoor	Loss of material/ pitting and crevice corrosion	Chapter XI.S6, "Structural Monitoring Program"	No

III B2 STRUCTURES AND COMPONENT SUPPORTS Supports for Cable Trays, Conduit, HVAC Ducts, TubeTrack, Instrument Tubing, Non-ASME Piping and Components							
Item	Link	Structure and/or Component	Material	Environment	Aging Effect/ Mechanism	Aging Management Program (AMP)	Further Evaluation
TP-5	TP-5	Support members; welds; bolted connections; support anchorage to building structure	Stainless steel	Air – indoor uncontrolled	None	None	No
TP-4	TP-4	Support members; welds; bolted connections; support anchorage to building structure	Stainless steel	Air with borated water leakage	None	None	No
T-30	III.B2.1-a	Support members; welds; bolted connections; support anchorage to building structure	Steel	Air – indoor uncontrolled (External)	Loss of material/ general and pitting corrosion	Chapter XI.S6, “Structures Monitoring Program”	No, if within the scope of the applicant’s structures monitoring program

III STRUCTURES AND COMPONENT SUPPORTS B2 Supports for Cable Trays, Conduit, HVAC Ducts, TubeTrack, Instrument Tubing, Non-ASME Piping and Components							
Item	Link	Structure and/or Component	Material	Environment	Aging Effect/ Mechanism	Aging Management Program (AMP)	Further Evaluation
T-25	III.B2.1-b	Support members; welds; bolted connections; support anchorage to building structure	Steel	Air with borated water leakage	Loss of material/ boric acid corrosion	Chapter XI.M10, "Boric Acid Corrosion"	No

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~~**B3. ANCHORAGE OF RACKS, PANELS, CABINETS, AND ENCLOSURES
FOR ELECTRICAL EQUIPMENT AND INSTRUMENTATION**~~

~~B3.1 Support Members; Welds; Bolted Connections; Support Anchorage to Building Structure~~

~~B3.2 Building Concrete at Locations of Expansion and Grouted Anchors;
Grout Pads for Support Base Plates~~

B3. ANCHORAGE OF RACKS, PANELS, CABINETS, AND ENCLOSURES FOR ELECTRICAL EQUIPMENT AND INSTRUMENTATION

Systems, Structures, and Components

This section addresses supports and anchorage for racks, panels, cabinets, and enclosures for electrical equipment and instrumentation. Applicable aging effects are identified and the aging management review is presented for each applicable combination of support component and aging effect.

System Interfaces

Physical interfaces exist with the structure, system or component being supported and with the building structural element to which the support is anchored. A primary function of supports is to provide anchorage of the supported element for internal and external design basis events, so that the supported element can perform its intended function.

III B3 STRUCTURES AND COMPONENT SUPPORTS Anchorage of Racks, Panels, Cabinets, and Enclosures for Electrical Equipment and Instrumentation							
Item	Link	Structure and/or Component	Material	Environment	Aging Effect/Mechanism	Aging Management Program (AMP)	Further Evaluation
T-29	III.B3.2-a	Building concrete at locations of expansion and grouted anchors; grout pads for support base plates	Reinforced 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 Program"	No, if within the scope of the applicant's structures monitoring program
TP-8	TP-8	Support members; welds; bolted connections; support anchorage to building structure	Galvanized steel, aluminum	Air – indoor uncontrolled	Loss of material/ galvanic corrosion	Chapter XI.S6, "Structural Monitoring Program"	No
TP-3	TP-3	Support members; welds; bolted connections; support anchorage to building structure	Galvanized steel, aluminum	Air with borated water leakage	Loss of material/ boric acid corrosion	Chapter XI.M10, "Boric Acid Corrosion"	No

III B3 STRUCTURES AND COMPONENT SUPPORTS Anchorage of Racks, Panels, Cabinets, and Enclosures for Electrical Equipment and Instrumentation							
Item	Link	Structure and/or Component	Material	Environment	Aging Effect/ Mechanism	Aging Management Program (AMP)	Further Evaluation
TP-5	TP-5	Support members; welds; bolted connections; support anchorage to building structure	Stainless steel	Air – indoor uncontrolled	None	None	No
TP-4	TP-4	Support members; welds; bolted connections; support anchorage to building structure	Stainless steel	Air with borated water leakage	None	None	No
T-30	III.B3.1-a	Support members; welds; bolted connections; support anchorage to building structure	Steel	Air – indoor uncontrolled (External)	Loss of material/ general and pitting corrosion	Chapter XI.S6, “Structures Monitoring Program”	No, if within the scope of the applicant’s structures monitoring program

III STRUCTURES AND COMPONENT SUPPORTS							
B3 Anchorage of Racks, Panels, Cabinets, and Enclosures for Electrical Equipment and Instrumentation							
Item	Link	Structure and/or Component	Material	Environment	Aging Effect/ Mechanism	Aging Management Program (AMP)	Further Evaluation
T-25	III.B3.1-b	Support members; welds; bolted connections; support anchorage to building structure	Steel	Air with borated water leakage	Loss of material/ boric acid corrosion	Chapter XI.M10, "Boric Acid Corrosion"	No

~~**B4. SUPPORTS FOR EMERGENCY DIESEL GENERATOR (EDG), HVAC SYSTEM
COMPONENTS, AND OTHER MISCELLANEOUS MECHANICAL EQUIPMENT**~~

~~B4.1 Support Members; Welds; Bolted Connections; Support Anchorage to Building Structure~~

~~B4.2 Vibration Isolation Elements~~

~~B4.3 Building Concrete at Locations of Expansion and Grouted Anchors; Grout Pads for Support Base Plates~~

B4. SUPPORTS FOR EMERGENCY DIESEL GENERATOR (EDG), HVAC SYSTEM COMPONENTS, AND OTHER MISCELLANEOUS MECHANICAL EQUIPMENT

Systems, Structures, and Components

This section addresses supports and anchorage for miscellaneous mechanical equipment. Applicable aging effects are identified and the aging management review is presented for each applicable combination of support component and aging effect.

System Interfaces

Physical interfaces exist with the structure, system or component being supported and with the building structural element to which the support is anchored. A primary function of supports is to provide anchorage of the supported element for internal and external design basis events, so that the supported element can perform its intended function.

III B4 STRUCTURES AND COMPONENT SUPPORTS Supports for Emergency Diesel Generator (EDG), HVAC System Components, and Other Miscellaneous Mechanical Equipment							
Item	Link	Structure and/or Component	Material	Environment	Aging Effect/ Mechanism	Aging Management Program (AMP)	Further Evaluation
T-29	III.B4.3-a	Building concrete at locations of expansion and grouted anchors; grout pads for support base plates	Reinforced 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 Program”	No, if within the scope of the applicant’s structures monitoring program
TP-2	TP-2	Sliding support bearings and sliding support surfaces	Lubrite	Air – outdoor	Loss of mechanical function/ Corrosion, distortion, dirt, overload, fatigue due to vibratory and cyclic thermal loads; elastomer hardening	Chapter XI.S6, “Structural Monitoring Program”	No
TP-1	TP-1	Steel components: Radial beam seats in BWR drywell; RPV support shoes for PWR with nozzle supports; other supports	Lubrite	Air – indoor uncontrolled	Loss of mechanical function/ Corrosion, distortion, dirt, overload, fatigue due to vibratory and cyclic thermal loads; elastomer hardening	Chapter XI.S6, “Structural Monitoring Program”	No

III B4 STRUCTURES AND COMPONENT SUPPORTS Supports for Emergency Diesel Generator (EDG), HVAC System Components, and Other Miscellaneous Mechanical Equipment							
Item	Link	Structure and/or Component	Material	Environment	Aging Effect/ Mechanism	Aging Management Program (AMP)	Further Evaluation
TP-8	TP-8	Support members; welds; bolted connections; support anchorage to building structure	Galvanized steel, aluminum	Air – indoor uncontrolled	Loss of material/ galvanic corrosion	Chapter XI.S6, “Structural Monitoring Program”	No
TP-3	TP-3	Support members; welds; bolted connections; support anchorage to building structure	Galvanized steel, aluminum	Air with borated water leakage	Loss of material/ boric acid corrosion	Chapter XI.M10, "Boric Acid Corrosion"	No
TP-6	TP-6	Support members; welds; bolted connections; support anchorage to building structure	Galvanized steel, aluminum, stainless steel	Air – outdoor	Loss of material/ pitting and crevice corrosion	Chapter XI.S6, “Structural Monitoring Program”	No

III B4 STRUCTURES AND COMPONENT SUPPORTS Supports for Emergency Diesel Generator (EDG), HVAC System Components, and Other Miscellaneous Mechanical Equipment							
Item	Link	Structure and/or Component	Material	Environment	Aging Effect/Mechanism	Aging Management Program (AMP)	Further Evaluation
TP-5	TP-5	Support members; welds; bolted connections; support anchorage to building structure	Stainless steel	Air – indoor uncontrolled	None	None	No
TP-4	TP-4	Support members; welds; bolted connections; support anchorage to building structure	Stainless steel	Air with borated water leakage	None	None	No
T-30	III.B4.1-a	Support members; welds; bolted connections; support anchorage to building structure	Steel	Air – indoor uncontrolled (External)	Loss of material/general and pitting corrosion	Chapter XI.S6, “Structures Monitoring Program”	No, if within the scope of the applicant’s structures monitoring program

III B4 STRUCTURES AND COMPONENT SUPPORTS Supports for Emergency Diesel Generator (EDG), HVAC System Components, and Other Miscellaneous Mechanical Equipment							
Item	Link	Structure and/or Component	Material	Environment	Aging Effect/ Mechanism	Aging Management Program (AMP)	Further Evaluation
T-25	III.B4.1-b	Support members; welds; bolted connections; support anchorage to building structure	Steel	Air with borated water leakage	Loss of material/ boric acid corrosion	Chapter XI.M10, "Boric Acid Corrosion"	No
T-31	III.B4.2-a	Vibration isolation elements	Non-metallic (e.g., Rubber)	Air – indoor uncontrolled or air - outdoor	Reduction or loss of isolation function/ radiation hardening, temperature, humidity, sustained vibratory loading	Chapter XI.S6, "Structures Monitoring Program"	No, if within the scope of the applicant's structures monitoring program

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~~**B5. SUPPORTS FOR PLATFORMS, PIPE WHIP RESTRAINTS, JET IMPINGEMENT
SHIELDS, MASONRY WALLS, AND OTHER MISCELLANEOUS STRUCTURES**~~

~~B5.1 Support Members; Welds; Bolted Connections; Support Anchorage to Building
Structure~~

~~B5.2 Building Concrete at Locations of Expansion and Grouted Anchors; Grout Pads for
Support Base Plates~~

B5. SUPPORTS FOR PLATFORMS, PIPE WHIP RESTRAINTS, JET IMPINGEMENT SHIELDS, MASONRY WALLS, AND OTHER MISCELLANEOUS STRUCTURES

Systems, Structures, and Components

This section addresses supports and anchorage for miscellaneous structures. Applicable aging effects are identified and the aging management review is presented for each applicable combination of support component and aging effect.

System Interfaces

Physical interfaces exist with the structure, system or component being supported and with the building structural element to which the support is anchored. A primary function of supports is to provide anchorage of the supported element for internal and external design basis events, so that the supported element can perform its intended function.

III B5 STRUCTURES AND COMPONENT SUPPORTS Supports for Platforms, Pipe Whip Restraints, Jet Impingement Shields, Masonry Walls, and Other Miscellaneous Structures							
Item	Link	Structure and/or Component	Material	Environment	Aging Effect/Mechanism	Aging Management Program (AMP)	Further Evaluation
T-29	III.B5.2-a	Building concrete at locations of expansion and grouted anchors; grout pads for support base plates	Reinforced 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 Program"	No, if within the scope of the applicant's structures monitoring program
TP-8	TP-8	Support members; welds; bolted connections; support anchorage to building structure	Galvanized steel, aluminum	Air – indoor uncontrolled	Loss of material/ galvanic corrosion	Chapter XI.S6, "Structural Monitoring Program"	No
TP-3	TP-3	Support members; welds; bolted connections; support anchorage to building structure	Galvanized steel, aluminum	Air with borated water leakage	Loss of material/ boric acid corrosion	Chapter XI.M10, "Boric Acid Corrosion"	No

III B5 STRUCTURES AND COMPONENT SUPPORTS Supports for Platforms, Pipe Whip Restraints, Jet Impingement Shields, Masonry Walls, and Other Miscellaneous Structures							
Item	Link	Structure and/or Component	Material	Environment	Aging Effect/Mechanism	Aging Management Program (AMP)	Further Evaluation
TP-5	TP-5	Support members; welds; bolted connections; support anchorage to building structure	Stainless steel	Air – indoor uncontrolled	None	None	No
TP-4	TP-4	Support members; welds; bolted connections; support anchorage to building structure	Stainless steel	Air with borated water leakage	None	None	No
T-30	III.B5.1-a	Support members; welds; bolted connections; support anchorage to building structure	Steel	Air – indoor uncontrolled (External)	Loss of material/general and pitting corrosion	Chapter XI.S6, “Structures Monitoring Program”	No, if within the scope of the applicant’s structures monitoring program

III B5 STRUCTURES AND COMPONENT SUPPORTS Supports for Platforms, Pipe Whip Restraints, Jet Impingement Shields, Masonry Walls, and Other Miscellaneous Structures							
Item	Link	Structure and/or Component	Material	Environment	Aging Effect/ Mechanism	Aging Management Program (AMP)	Further Evaluation
T-25	III.B5.1-b	Support members; welds; bolted connections; support anchorage to building structure	Steel	Air with borated water leakage	Loss of material/ boric acid corrosion	Chapter XI.M10, "Boric Acid Corrosion"	No

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