

**TABLE 16-1**

**AGING MANAGEMENT PROGRAMS (AMP), INDEXED BY LRA SECTION AND SYSTEM**

<b>Item No.</b>	<b>LRA Section</b>	<b>System</b>	<b>Components</b>	<b>Aging Mechanism</b>	<b>Program</b>	<b>Program Description</b>
1.	3.1	Component Supports	Piping supports, cable raceway supports, HVAC ducting supports, equipment supports, frames and saddles (inside Containment)/LOCA restraints, equipment anchorages (for NSSS) hoods outside Containment)	General Corrosion, Loading Due to Hydraulic Vibration or Water Hammer, Loading Due to Thermal Expansion, SCC of High Strength Bolts	Additional Baseline Walkdowns	See Section 16.2.1 for a general description.
2.	3.1	Component Supports	Piping supports, cable raceway supports, HVAC ducting supports, equipment supports, metal spring isolators and fixed bases (outside Containment)/LOCA restraints, frames and saddles/LOCA restraints, frames and saddles/ring foundation for flat bottom vertical TKs, frames and saddles (inside Containment)/LOCA restraints	General Corrosion, Wear, Erosion, Loss of Integrity at Bolted Connections, Welded Connections, Pinned Connections, Cracking (fatigue cracking and SCC of High Strength Bolts)	ASME Section XI, Subsection IWF	See Section 16.2.6 for a general description.
3.	Deleted					
4.	3.1	Component Supports	Control Room HVAC, Elastomer vibration isolators	Elastomer Hardening	Design Change and Modification Implementation	See Section 16.2.15 for a general description.
5.	3.1	Component Supports	CAC Fan Housing Spring Isolator Supports and Fixed Bases	General Corrosion	PM	See Section 16.2.23 for a general description. For the CAC fan housing supports and fixed bases, the PM checklists, which open and inspect other components internal to the fan housing, have been modified to also inspect these spring isolator supports for signs of general corrosion.
6.	3.1	Component Supports	Piping (Snubber) supports	General Corrosion, Wear, Erosion, Loss of Integrity at Bolted, Pinned or Weld Connections, Cracking	ASME Section XI, Subsection IWF	See Section 16.2.6 for a general description.

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7.	3.1	Component Supports	Piping supports, cable raceway supports, HVAC ducting supports, equipment supports, elastomer vibration isolators, metal spring isolators and fixed bases (outside Containment)/ LOCA restraints, frames and saddles/LOCA restraints, frames and saddles/ ring foundation for flat-bottom vertical TKs	General Corrosion, Loading Due to Hydraulic Vibration or Water Hammer, Loading Due to Thermal Expansion, Elastomer Hardening, Loading Due to Rotating or Reciprocating Equipment	Structure and System Walkdowns	See Section 16.2.29 for a general description.
8.	3.1A	For the following systems: (011) SRW Cooling (012) SW Cooling (013) FP (015) CC (019) Compressed Air (023) DFO (024) EDGs (029) Plant Heating (036) AFW (037) Demineralized Water/ Condensate Storage (038) Sampling System (NSSS) (041) CVCS (045) FWS (046) Extraction Steam (051) Plant Water (052) SI (053) Plant Drains (061) Containment Spray (064) RCS (067) SFPC (069) Waste Gas (071) Liquid Waste (074) Nitrogen and Hydrogen (077/79) Area and	Piping/supports beyond SR/NSR boundary providing structural support	Various	Structure and System Walkdowns	Aging management of the piping segments and supports beyond the SR/NSR boundary that provide structural support for the SR piping and boundary isolation valves is accomplished by the Structure and System Walkdowns Program described in Section 16.2.29. This program ensures that the intended structural support function of the NSR piping segments and supports beyond the SR/NSR boundary up to the first anchor point (or equivalent) is maintained.

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Item No.	LRA Section	System	Components	Aging Mechanism	Program	Program Description
		Process Radiation Monitoring (083) Main Steam				
9.	3.1A	For the following systems: (011) SRW Cooling (012) SW Cooling (013) FP (015) CC (019) Compressed Air (023) DFO (024) EDGs (029) Plant Heating (036) AFW (037) Demineralized Water/Condensate Storage (038) Sampling System (NSSS) (041) CVCS (045) FWS (046) Extraction Steam (051) Plant Water (052) SI (053) Plant Drains (061) Containment Spray (064) RCS (067) SFPC (069) Waste Gas (071) Liquid Waste (074) Nitrogen and Hydrogen (077/79) Area and Process Radiation Monitoring (083) Main Steam	Piping/supports beyond SR/NSR boundary providing structural support	Various	Various	Aging management of the piping segments and supports beyond the SR/NSR boundary that provide structural support for the SR piping and boundary isolation valves is accomplished by the same AMP credited to manage the SR portion of the piping systems for the identified systems, as described in various items in this Table. These various AMP ensure that the intended structural support function of the NSR piping segments and supports, beyond the SR/NSR boundary up to the first anchor point (or equivalent), is maintained.
10.	3.2	Cranes, Reactor Vessel Cooling Shroud	Reactor vessel cooling shroud structural support members, cranes	Corrosion Due to Boric Acid	BACI	See Section 16.2.7 for a general description.

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11.	3.2	Fuel Handling, Cranes	Carbon steel FHE and heavy load handling crane components, Carbon steel wire rope	General Corrosion, Fatigue, Wear, Mechanical Degradation	Load Handling and FHE	See Section 16.2.22 for a general description. Credited for discovery and management of fatigue, wear, and mechanical degradation of carbon steel wire rope and general corrosion of carbon steel components of FHE, by performing visual inspections. PM repetitive tasks have been modified to explicitly present the inspection requirements.
12.	3.2	Fuel Handling	Carbon steel components of the SFHM and the Reactor Refueling Machine (RRM)	General Corrosion	Load Handling and FHE	See Section 16.2.22 for a general description. Performance Evaluations provide for checks of the SFHM, RRM, and associated components prior to refueling campaigns (i.e., defuel/refuel or fuel shuffle). These procedures require performing a walkdown for foreign material and cleanliness, inspecting the SFHM and associated equipment for damaged, corroded, or deteriorated parts, and checking cleanliness of rail surfaces. The plant's nuclear operations procedures have numerous levels of controls and reviews, including assignment of responsibility for conducting performance evaluations as required, reviewing all the evaluations for accuracy and completeness, and analyzing data for trends, if applicable. Specific responsibilities are assigned to Calvert Cliffs personnel for monitoring these programs through periodic audits. These controls provide reasonable assurance that the associated activities will continue to be an effective means of monitoring the FHE for the effects of general corrosion/oxidation.
13.	3.2	Fuel Handling	Stainless steel wire rope	Fatigue, Wear, Mechanical Degradation	Load Handling and FHE	See Section 16.2.22 for a general description. Performance Evaluations provide for visual inspection of hoisting ropes and drive cables for the fuel upending machines and transfer carriages which are visually inspected for damage. Performance Evaluations provide for wire rope inspection for the SFHM, RRM, the spent fuel inspection elevator, and the new fuel elevator prior to refueling campaigns. The checks for the SFHM and the elevators are also performed. The SFHM procedures require visual inspection of the hoisting rope while running the hoist through the full length of travel. The RRM procedures require the same activities for the main hoist on each unit's RRM. The fuel elevators procedures require visual inspection for damage to hoisting ropes for the spent fuel inspection elevator and the new fuel elevator.
14.	Deleted					
15.	3.2	Fuel Handling, Cranes, RCS	Carbon steel parts of spent fuel cask handling crane, polar crane, intake structure semi-gantry crane, purge valve exhaust monorail hoist, reactor vessel head lift rig, RRM, containment roof jib crane, and transfer machine jib crane	General Corrosion	Load Handling and FHE	See Section 16.2.22 for a general description. Repetitive Tasks are credited for discovery and management of general corrosion effects in carbon steel parts by performing visual inspections.

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16.	3.2	Fuel Handling	Stainless steel wire rope (SFHM and Fuel Elevators)	Fatigue, Wear, Mechanical Degradation, Distortion	Load Handling and FHE	See Section 16.2.22 for a general description. Repetitive tasks are credited for discovery and management of fatigue, wear, and mechanical degradation/ distortion of stainless steel wire rope, for the Auxiliary Building Handling Crane, Fuel Upending Machines, Transfer Jib Crane, and Fuel Elevators. These PM tasks have been modified to explicitly present the inspection requirements.
17.	3.2	Fuel Handling	Carbon steel chain (Containment purge monorail hoist)	General Corrosion, Wear	Load Handling and FHE	See Section 16.2.22 for a general description.
18.	Deleted					
19.	3.3A	Containment	Containment tendons	Prestress Losses	ASME Section XI, Subsections IWE and IWL	See Section 16.2.5 for a general description.
20.	3.3A	Containment	Containment tendons	General Corrosion	ASME Section XI, Subsections IWE and IWL	See Section 16.2.5 for a general description.
21.	3.3A	Containment	Grout under tendon bearing plates	Weathering	ASME Section XI, Subsections IWE and IWL	See Section 16.2.5 for a general description.
22.	3.3A	Containment	Containment liner	General Corrosion	ASME Section XI, Subsections IWE and IWL	See Section 16.2.5 for a general description.
23.	3.3A	Containment	Non-metallic portions of non-environmentally qualified electrical penetrations	Radiation and Thermal Damage	Containment Local Leakage Rate Testing	See Section 16.2.14 for a general description.
24.	3.3A	Containment	Steel components inside the Containment Structure	General Corrosion	Protective Coatings	See Section 16.2.24 for a general description.
25.	3.3A	Containment	Emergency air lock Personnel air lock and Equipment hatch gaskets	Elastomer Degradation	PM	See Section 16.2.23 for a general description. The Containment Personnel, Emergency Escape Air Lock and Equipment Hatch Adjustment, Lubrication, and Inspection Procedure, provides instructions for adjustment, lubrication, and inspection of the operating mechanism for the air lock. Degradation of the air lock gaskets is managed by routine replacement.
26.	3.3A	Containment	Embedded steel/rebar within the containment wall and dome	General Corrosion	Structure and System Walkdowns	See Section 16.2.29 for a general description.
27.	3.3A	Containment	Steel components outside the Containment Structure	General Corrosion	Structure and System Walkdowns	See Section 16.2.29 for a general description.
28.	3.3A	Containment	Refueling pool liner and permanent cavity seal ring	IGSCC	Structure and System Walkdowns	See Section 16.2.29 for a general description.
29.	3.3B	Turbine Building	Caulking and sealants that do not function as fire barriers	Weathering	Caulking and Sealant Inspection	See Section 16.2.11 for a general description.

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30.	3.3B	Turbine Building	Caulking and sealants that function as fire barriers	Weathering	Fire Barrier Penetration Seal Inspection	See Section 16.2.20 for a general description.
31.	3.3B	Turbine Building	Carbon steel components	General Corrosion	Structure and System Walkdowns	See Section 16.2.29 for a general description.
32.	3.3C	Intake Structure	Caulking and sealants that do not function as fire barriers	Weathering	Caulking and Sealant Inspection	See Section 16.2.11 for a general description.
33.	3.3C	Intake Structure	Caulking, sealants, and expansion joints that function as fire barriers	Weathering	Fire Barrier Penetration Seal Inspection	See Section 16.2.20 for a general description.
34a.	3.3C	Intake Structure	Concrete of fluid-retaining walls and slabs	Aggressive Chemical Attack	PM	See Section 16.2.23 for a general description. The repetitive tasks (Intake Structure Cavity Repairs and Cleaning) have been modified to include specific ARDMs where they are not presently included and/or additional specified components/subcomponents where they are not presently inspected.
34b.	3.3C	Intake Structure	Concrete of fluid-retaining walls and slabs	Aggressive Chemical Attack	Structure and System Walkdowns	See Section 16.2.29 for a general description.
35.	3.3C	Intake Structure	Embedded steel/rebar of fluid-retaining walls and slabs	General Corrosion	PM	See Section 16.2.23 for a general description. The repetitive tasks (Intake Structure Cavity Repairs and Cleaning) were modified to include specific ARDMs where they are not presently included and/or additional specified components/subcomponents where they are not presently inspected.
36.	3.3C	SW	Sluice gate wire rope and chain assemblies	Crevice Corrosion, MIC and Pitting	PM	See Section 16.2.23 for a general description.
37.	3.3C	Intake Structure	Carbon steel components	General Corrosion	Structure and System Walkdowns	See Section 16.2.29 for a general description.
38.	3.3D	Miscellaneous Tank & Valve Enclosures	Carbon steel components	General Corrosion	Structure and System Walkdowns	See Section 16.2.29 for a general description.
39.	3.3E / 5.12	Auxiliary Building (Main Steam/CVCS/FWS Systems)	Pipe encapsulations	General Corrosion	PM	See Section 16.2.23 for a general description.
40.	3.3E	Auxiliary Building	SFP liner	IGSCC	Spent Fuel Pool	See Section 16.2.27 for a general description.
41.	NA	1A Diesel Building	Carbon steel members	General Corrosion	Structure and System Walkdowns	See Section 16.2.29 for a general description.
42.	NA	1A Diesel Building	Caulking and sealants that function as fire barriers	Weathering	Fire Barrier Penetration Seal Inspection	See Section 16.2.20 for a general description.
43.	NA	1A Diesel Building	Caulking and sealants that do not function as fire barriers	Weathering	Caulking and Sealants Inspection	See Section 16.2.11 for a general description.
44.	3.3E	Auxiliary Building	SFP storage racks (Unit 1 side only)	Loss of Neutron-Absorbing Material	Spent Fuel Pool	See Section 16.2.27 for a general description.

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45.	3.3E	Auxiliary Building and SBO Buildings	Caulking, sealants, and expansion joints that do not function as fire barriers	Weathering	Caulking and Sealant Inspection	See Section 16.2.11 for a general description.
46.	3.3E	Auxiliary Building and SBO Buildings	Caulking, sealants, and expansion joints that function as fire barriers	Weathering, Galvanic Corrosion	Penetration Fire Barrier Inspection	See Section 16.2.20 for a general description.
47.	3.3E	Auxiliary Building and SBO Buildings	Carbon steel components	General Corrosion, SCC	Structure and System Walkdowns	See Section 16.2.29 for a general description.
48.	4.1	RCS	PUMP	Erosion, Galvanic Corrosion	BACI	See Section 16.2.7 for a general description.
49.	4.1	RCS	HV	Galvanic Corrosion; SCC	BACI	See Section 16.2.7 for a general description.
50.	4.1	RCS	PP, CKV, CV, ERV, Motor-Operated Valve (MOV), PUMP, SG, PZV, RV, SV	General Corrosion	BACI	See Section 16.2.7 for a general description.
51.	4.1	RCS	PP, CV, HV, PUMP and MOV	Wear	BACI	See Section 16.2.7 for a general description.
52.	4.1	RCS	PP, PUMP, RVI, and PZV (surge nozzle safe end)	Thermal Embrittlement	CASS	See Section 16.2.10 for a general description.
53.	4.1	RCS	PP and PZV	SCC/IGSCC and PWSCC	Alloy 600	See Section 16.2.3 for a general description.
54.	4.1	RCS	SG, SG Tubes and Tube Supports	Denting, Wear, Pitting, SCC/IGSCC, IGA, Erosion, Erosion Corrosion	Steam Generator	See Section 16.2.28 for a general description.
55.	4.1	RCS	HV, MOV, SG Tubes	Wear, Pitting, SCC/IGSCC	Surveillance Testing	See Section 16.2.30 for a general description. Calvert Cliffs STPs, are credited for discovering these ARDMs for the SG tubes. These procedures will discover these ARDMs by determining if any of the SG tubes are leaking RCS coolant. These Calvert Cliffs procedures direct the user to perform calculations to determine the amount and potential source of RCS leakage. Any abnormal RCS leakage would be detected and actions taken to correct the leakage prior to a loss of the intended function. The Calvert Cliffs Technical Specifications provide the basis for the acceptance criteria of leakage rates.
55A.	4.1	RCS	PP (RPV Head Leak-off Line)	SCC	Reactor Coolant	See Section 16.2.25 for a general description. Calvert Cliffs procedure implementation prevents SSC of the RPV head leak-off line by directing that the line be blown clear of fluids with compressed air. NOTE: Clearing the line of fluid eliminates the potential for this ADRM.
56.	4.1	RCS/RVI	PP, CKV, CV, ERV, SG, MOV, PUMP, PZV, and RV	Fatigue	Fatigue Monitoring	See Section 16.2.19 for a general description. A one-time fatigue analysis was performed for the reactor coolant pumps (RCPs), MOVs, and pressurizer RVs. RCP Suction/Discharge and shutdown cooling (SDC) piping were added as locations to be monitored.
57.	Deleted					

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58.	Deleted					
59.	4.1	RCS	PP, PUMP, SG	General Corrosion	ASME Section XI, Subsections IWB, IWC, and IWD	See Section 16.2.4 for a general description.
60.	4.1	RCS	PUMP, and MOV	Wear	ASME Section XI, Subsections IWB, IWC, and IWD	See Section 16.2.4 for a general description.
61.	4.1	RCS	ERV, HV, RV, PUMP, MOV	Thermal Embrittlement	ASME Section XI, Subsections IWB, IWC, and IWD	See Section 16.2.4 for a general description.
62.	4.1	RCS	SG	Denting, Pitting and SCC/IGSCC	Chemistry	See Section 16.2.12 for a general description. Procedures that control FWS chemistry, includes the SGs, condensate storage tank, FWS, condensate, main steam system, heater drain tanks, condensate demineralizer effluent, SG blowdown ion exchanger effluent, and condensate precoat filters. These procedures control fluid chemistry in order to minimize the concentration of corrosive impurities (chlorides, sulfates, oxygen) and optimizes fluid pH. Control of fluid chemistry minimizes the corrosive environment for FWS components, and limits the rate and effects of corrosion/pitting, denting and SCC/IGSCC. Secondary chemistry parameters (e.g., pH, dissolved oxygen levels) are measured at procedurally-specified frequencies. The measured parameter values are compared against target values that represent a goal or predetermined warning limit. If a measured value is out of bounds, corrective actions are taken (e.g., power reduction, plant shutdown) in accordance with the plant secondary chemistry procedure. Remedial actions are specified to minimize corrosion degradation of components and to ensure that secondary system integrity is maintained.
63.	4.1	RCS	SG tube supports	Erosion-Corrosion	Chemistry	See Section 16.2.12 for a general description. See the description of Secondary Chemistry in Item 62 above.
64.	4.1	RCS	RCP tube-in-tube seal water HX	IGA	Chemistry	See Section 16.2.12 for a general description. Primary Chemistry Procedures are credited with mitigating the effects of IGA on the RCP seal water HX (RCS side) by monitoring and maintaining the RCS chemistry. Calvert Cliffs Primary Chemistry lists the parameters to monitor (e.g., chloride, fluoride, sulfate, oxygen, pH), the frequency of monitoring these parameters, and the acceptable value or range of values for each parameter. The primary chemistry parameters are measured at procedurally-specified frequencies and are compared against target values, which represent a goal or predetermined warning limit. If a target value is approached or violated, corrective actions are taken as prescribed by the procedure, thereby ensuring timely response to chemical excursions.
65.	4.1	RCS	PP	PWSCC	Chemistry	See Section 16.2.12 for a general description. The Primary Chemistry Procedure is described in Item 64 above.
66.	4.1	RCS	SG	SCC/IGSCC and Pitting	Chemistry	See Section 16.2.12 for a general description. The Primary Chemistry Procedure is described in Item 64.



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67.	4.1	RCS	RCP tube-in-tube seal water HX	IGA	Chemistry	See Section 16.2.12 for a general description. CC/SRW Chemistry Procedures are credited with mitigating IGA on the RCP seal water HX (CC System side) by monitoring and maintaining CC chemistry to control the concentrations of oxygen, chlorides, other chemicals, and contaminants. The water is treated with hydrazine to minimize the amount of oxygen in the water that aids in the prevention and control of most corrosive mechanisms. The procedures list the parameters to monitor, the frequency of monitoring these parameters, and the target and action levels for the CC System fluid parameters. The parameters currently monitored by the procedure are: pH, hydrazine, chloride, dissolved oxygen, dissolved copper, dissolved iron, suspended solids, gamma activity, and tritium activity (normally not a radioactive system). All of the parameters listed in this procedure currently have target values that give an acceptable range or limit for the associated parameter.
68.	N/A	Various	Various	Various	ARDI	See Section 16.2.2 for a general description.
69.	Deleted					
70.	4.1	RCS	RCP tube-in-tube seal water HX	Wear	Reactor Coolant	See Section 16.2.25 for a general description. Calvert Cliffs utilizes OIs for management and discovery of wear in the RCP seal water HXs.
71.	4.2	RPVs and CEDMs/ Electrical	RPV Alloy 600 components	SCC	Alloy 600	See Section 16.2.3 for a general description.
72.	4.2	RPVs and CEDMs/ Electrical	RPV head and vessel, RPV studs, nuts and washers	General Corrosion	BACI	See Section 16.2.7 for a general description.
73.	4.2	RPVs and CEDMs/ Electrical	RPV Head Nozzles and RPV anchor bolts	SCC	BACI	See Section 16.2.7 for a general description.
74.	4.2	RPVs and CEDMs/ Electrical	RPV/CEDM	Wear	BACI	See Section 16.2.7 for a general description.
75.	4.2	RPVs and CEDMs/ Electrical	RPV	Neutron Embrittlement	CRVSP	See Section 16.2.13 for a general description.
76.	Deleted					
77.	4.2	RPVs and CEDMs/ Electrical	RPV, CEDM, Reactor Vessel Level Monitoring System (RVLMS)/Incore Instrumentation (ICI) Nozzles	Fatigue	Fatigue Monitoring	See Section 16.2.19 for a general description. This AMP was modified to perform an engineering evaluation for CEDM and RVLMS/ICI nozzle components to ensure that the components are bounded.
78.	4.2	RPVs and CEDMs/ Electrical	RPV, CEDM, RVLMS/ICI Nozzles	Fatigue	ASME Section XI, Subsections IWB, IWC, and IWD	See Section 16.2.4 for a general description.
79.	4.2	RPVs and CEDMs/ Electrical	RPV components susceptible to general corrosion	General Corrosion	ASME Section XI, Subsections IWB, IWC, and IWD	See Section 16.2.4 for a general description.
80.	4.2	RPVs and CEDMs/ Electrical	RPV anchor bolts	SCC	ASME Section XI, Subsections IWB, IWC, and IWD	See Section 16.2.4 for a general description.

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81.	4.2	RPVs and CEDMs/ Electrical	RPV/CEDM	Wear	ASME Section XI; Subsections IWB, IWC, and IWD	See Section 16.2.4 for a general description.
82.	Deleted					
83.	4.2	RPVs and CEDMs/ Electrical	RPV head and vessel, O- ring flange sealing area	General Corrosion	PM	See Section 16.2.23 for a general description. A maintenance procedure is credited for the discovery of general corrosion on the RPV head and vessel O-ring flange sealing area. This procedure provides for inspection and acceptance criteria for minor pitting, nicks, and scratches near or on the O-ring sealing area. Any evidence of general corrosion would be found during the performance of this procedure.
84.	4.2	RPVs and CEDMs/ Electrical	RPV, studs, nuts, and washers	General Corrosion, Wear	PM	See Section 16.2.23 for a general description. A maintenance procedure is credited for the discovery of general corrosion and wear. This procedure specifies the procedural steps, materials, and acceptance criteria to be used in the cleaning and inspection of the RPV studs, nuts, and washers. The procedure describes what the inspection process should be looking for, and how to report any wear or damage that is found. The procedure also lists the acceptance criteria for contact between load bearing surfaces as a minimum of 70 percent.
85.	4.3	RVI	Combustion Engineering, Inc. (CE) Pressurized Water Reactor RVI components as identified by Section IV.B3 of GALL, Rev 2	As identified for CE Pressurized Water Reactor RVI components in Section IV.B3 of GALL, Rev 2	RVI	See Section 16.2.26 for a general description.
86.	Deleted					
87.	Deleted					
88.	Deleted					
89.	Deleted					
90.	Deleted					
91.	Deleted					
92.	Deleted					
93.	5.1	AFW	Class 'HB' PP	Crevice Corrosion General Corrosion MIC, Galvanic Corrosion and Pitting	Buried Pipe Inspection	See Section 16.2.8 for a general description.
94.	Deleted					
95.	Deleted					
96.	Deleted					
97.	5.1	AFW	Pump Turbine and GOVs Valves and GOVs Cooler	Crevice Corrosion, General Corrosion, Erosion Corrosion, Pitting	PM	See Section 16.2.23 for a general description. Maintenance procedures for AFW Pump Turbine Overhaul, and AFW Pump Turbine Governor Valve Overhaul disassembles the turbine and turbine GOVs to inspect for damage. Measurements are taken to assure critical tolerances are within acceptance criteria. Specific subcomponents are inspected for wear, erosion, pitting, and/or surface cracking.
98.	5.1	AFW	CV	General Corrosion	PM	See Section 16.2.23. for a general description

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99.	5.1	AFW	CKVs	Crevice Corrosion General Corrosion Pitting	Chemistry	See Section 16.2.12 for a general description. Demineralized Water Chemistry procedures have been established to: minimize impurity ingress to plant systems; reduce corrosion product generation, transport, and deposition; reduce collective radiation exposure through chemistry; improve integrity and availability of plant systems; and extend component and plant life. The demineralized water chemistry program controls fluid chemistry in order to minimize the concentration of corrosive impurities and dissolved oxygen. The demineralized water chemistry parameters (e.g., specific conductivity, dissolved oxygen, chloride, fluoride, sulfate) are measured at procedurally-specified frequencies. The measured parameter values are compared against target values, which represent a goal or predetermined warning limit. These procedures will mitigate the effects of crevice corrosion, general corrosion, and pitting of the internal surfaces of AFW System CKVs located at the interface with the Chemical Addition System.
100.	5.1	AFW	EB, HB, PP, CKVs, CVs, HVs, PUMP	Crevice Corrosion, General Corrosion, Pitting, Erosion Corrosion (for CVs)	Chemistry	See Section 16.2.12 for a general description. The Secondary Chemistry Procedure is described in Item 62.
101.	5.1	AFW	GOV valve pump turbine	Erosion Corrosion, Crevice Corrosion, General Corrosion, Pitting	Chemistry	See Section 16.2.12 for a general description. The Secondary Chemistry Procedure is described in Item 62.
102.	5.1	AFW	PUMP	Crevice Corrosion, Pitting	Structure and System Walkdowns	See Section 16.2.29 for a general description.
103.	5.1	AFW	PP	Crevice Corrosion, General Corrosion, Pitting	Structure and System Walkdowns	See Section 16.2.29 for a general description.
104.	5.1	AFW	TK (No. 12 Condensate Storage Tank)	Elastomer Degradation	Structure and System Walkdowns	See Section 16.2.29 for a general description.
105.	Deleted					
106.	Deleted					
107.	5.2	CVCS	All items exposed to borated water (due to leakage)	General Corrosion	BACI	See Section 16.2.7 for a general description.
108.	5.2	CVCS	CVOPs with air internal environment	General Corrosion	PM	See Section 16.2.23 for a general description. The quality of IA System components that are within scope is verified approximately quarterly, based on operating experience and applicable industry standards, in accordance with PM Checklist. These checklists assure that the system is being maintained in accordance with industry standards for moisture (dew point) and particulate contamination. This procedure is used to mitigate the effects of general corrosion on CVOPs and PCVs.
109.	5.2	CVCS	Letdown Line piping, CKVs, CVs, HXs, HVs and TES	Fatigue	Fatigue Monitoring	See Section 16.2.19 for a general description.

**TABLE 16-1**

**AGING MANAGEMENT PROGRAMS (AMP), INDEXED BY LRA SECTION AND SYSTEM**

<b>Item No.</b>	<b>LRA Section</b>	<b>System</b>	<b>Components</b>	<b>Aging Mechanism</b>	<b>Program</b>	<b>Program Description</b>
110.	5.2	CVCS	Heat traced PP and components	SCC	Design Change and Modification Implementation	See Section 16.2.15 for a general description.
111.	5.2	CVCS	Letdown HX shell side	Crevice Corrosion and Pitting	Chemistry	See Section 16.2.12 for a general description. The CC/SRW Chemistry Procedure is described in Item 67.
112.	5.2	CVCS	Items with boric acid or borated water internal environments	Crevice Corrosion and Pitting	Chemistry	See Section 16.2.12 for a general description. The Primary Chemistry Procedure is described in Item 64.
113.	Deleted					
114.	Deleted					
115.	Deleted					
116.	Deleted					
117a.	5.3	CC	PUMP casings	General Corrosion, Crevice Corrosion, Pitting	PM	See Section 16.2.23 for a general description. The CC pumps are inspected for crevice corrosion/ pitting and general corrosion, using a maintenance procedure. This procedure instructs the user to inspect the pump impeller and shaft for erosion, corrosion/pitting, and inspect all pump parts for wear, corrosion, and mechanical damage.
117b.	5.3	CC	PUMP casings	General Corrosion, Crevice Corrosion, Pitting	Surveillance Testing	See Section 16.2.30 for a general description. Pump inspections rely on the CC pump periodic test of the pump active function (flow vs. head) to trigger the overhaul. The periodicity of this test is established by Technical Specifications.
118.	5.3	CC	PP, automatic vents, CKVs, CVs, HVs, PUMP casings, REs, RVs, SVs, TEs, TIs, TICs, HXs	Crevice Corrosion, Pitting	Chemistry	See Section 16.2.12 for a general description. The CC/SRW Chemistry Procedure is described in Item 67.
119.	5.3	CC	PP, CKVs, CVs, HVs, PUMP casings, RVs, TEs, TIs, HXs	General Corrosion	Chemistry	See Section 16.2.12 for a general description. The CC/SRW Chemistry Procedure is described in Item 67.
120.	5.3	CC	Automatic vents, CVs, HVs, RVs, SVs	Selective Leaching	Chemistry	See Section 16.2.12 for a general description. The CC/SRW Chemistry Procedure is described in Item 67.
121.	5.3	CC	HXs, PP	Erosion Corrosion	Chemistry	See Section 16.2.12 for a general description. The CC/SRW Chemistry Procedure is described in Item 67.
122.	Deleted					
123.	5.4	Compressed Air	All Compressed Air System carbon steel components	General Corrosion	PM	See Section 16.2.23 for a general description.
124.	Deleted					
125.	5.5	Containment Isolation Group	MOVs in borated water systems	Crevice Corrosion, General Corrosion and Pitting	BACI	See Section 16.2.7 for a general description.
126.	Deleted					
127.	5.6	Containment Spray	PP, CKVs, CVs, HVs, HXs, MOVs, and PUMPs that are exposed to borated water (due to leakage)	General Corrosion	BACI	See Section 16.2.7 for a general description.

**TABLE 16-1**

**AGING MANAGEMENT PROGRAMS (AMP), INDEXED BY LRA SECTION AND SYSTEM**

<b>Item No.</b>	<b>LRA Section</b>	<b>System</b>	<b>Components</b>	<b>Aging Mechanism</b>	<b>Program</b>	<b>Program Description</b>
128.	5.6	Containment Spray	SDC HXs	General Corrosion, Crevice Corrosion, and/or Pitting	Chemistry	See Section 16.2.12 for a general description. See Item 67 for a description of the CC/SRW Chemistry Procedure.
129.	5.6	Containment Spray	PP, CKVs, CVs, FEs, FOs, HVs, HXs, MOVs, PUMPs, RVs, TEs, and TIs) that are exposed to boric water (as process fluid)	General Corrosion, Crevice Corrosion, and/or Pitting	Chemistry	See Section 16.2.12 for a general description. See Item 64 for a description of the Primary System Chemistry Procedure.
130.	5.7	DFO	DFO TKs	Crevice Corrosion, General Corrosion, Pitting, Fouling, and MIC	DFO (Tanks and Chemistry)	See Section 16.2.16 for a general description. Under the DFO Storage Tank Water Check STP, water that may collect at the DFO tank bottom is periodically drained and fuel chemistry is analyzed. If the amount of drained water or fuel chemistry is found not to meet the established standards, corrective action is implemented as required. Draining the water will minimize the degradation of the internal surface of the carbon steel tank bottom, and will also minimize the possibility of MIC since microbes require water to survive and multiply. If more than one gallon of water is drained, the operator is required to notify the shift supervisor, and the situation will be investigated to determine and correct the source of the water.
131.	5.7	DFO	Buried PP	Crevice Corrosion, General Corrosion, Galvanic Corrosion, MIC, and Pitting	Buried Pipe Inspection	See Section 16.2.8 for a general description.
132.	5.7	DFO	DFO Tanks	Crevice Corrosion, General Corrosion, Pitting, Fouling, and MIC	DFO (Tanks and Chemistry)	See Section 16.2.16 for a general description. Fuel oil chemistry is controlled, under this procedure, including testing for the presence of biologics. The procedure establishes surveillance frequencies, fuel oil specifications (e.g., viscosity, % water and sediment, particulate contamination, and biologics), and corrective actions. Sampling and analysis are performed on new fuel prior to unloading from fuel trucks. This procedure specifies limits for viscosity, water, and sediment for both receipt inspection and Technical Specification surveillance, in accordance with ASTM D975-81. This procedure requires the addition of a stabilizer/corrosion inhibitor prior to unloading fuel oil into the Fuel Oil Storage Tanks (FOSTs). This approach provides assurance that the desired ratio of inhibitor to fuel oil exists. Corrosion inhibitor is added to the fuel to control corrosion of any exposed metal surfaces in the tank. A biocide is also added to the FOSTs for the initial addition, or if the presence of biological activity has been confirmed, to control MIC.
133.	5.7	DFO	All above-ground DFO items	Crevice Corrosion, General Corrosion, and Pitting	Structure and System Walkdowns	See Section 16.2.29 for a general description.
134.	5.7	DFO	DFO TKs	Weathering	Structure and System Walkdowns	See Section 16.2.29 for a general description.

**TABLE 16-1  
AGING MANAGEMENT PROGRAMS (AMP), INDEXED BY LRA SECTION AND SYSTEM**

<b>Item No.</b>	<b>LRA Section</b>	<b>System</b>	<b>Components</b>	<b>Aging Mechanism</b>	<b>Program</b>	<b>Program Description</b>
135.	5.7	DFO	DFO TKs	Crevice Corrosion, General Corrosion, Pitting, Fouling, and MIC	DFO (Tanks and Chemistry)	See Section 16.2.16 for a general description.  Draining water and chemistry testing/control of fuel oil provide a high degree of confidence that the effects of the plausible ARDMs will be minimized. However, the internal surfaces of the tank are not accessible during system walkdowns. Calvert Cliffs has developed PM Tasks to perform internal inspections of the FOSTs at periodic intervals, consisting of UT assessments of the condition of the tank interior conducted in accordance with American Petroleum Institute Standard 653 for FOST inspections. The results of these inspections are documented as part of the PM program. These results are used to assess the overall condition of the tank interior and to determine the appropriate intervals for future inspections.
136.	Deleted					
137.	Deleted					
138.	Deleted					
139.	Deleted					
140.	5.8	EDG	Jacket water expansion TKs and cooling water PP	General Corrosion, Crevice Corrosion, and Pitting	Chemistry	See Section 16.2.12 for a general description.  Procedures are credited with mitigating the effects of general corrosion, crevice corrosion, and pitting of the cooling water piping and jacket water expansion tanks by monitoring and maintaining EDG jacket water chemistry (e.g., pH, dissolved oxygen). This procedure contains two different sets of chemistry parameters, one for the Fairbanks Morse EDGs, and one for the Societe Alsacienne De Constructions Mecaniques De Mulhouse EDG. The water is treated with hydrazine or corrosion inhibitors to minimize the amount of oxygen in the water, which aids in the prevention and control of most corrosive mechanisms. Continued maintenance of system water quality will mitigate EDG jacket water expansion tank and cooling water piping degradation. The procedure provides for a prompt review of EDG jacket water chemistry parameters so that steps can be taken to return chemistry parameters to normal levels, and, thus, minimize the effects of general corrosion, crevice corrosion, and pitting.
141.	5.8	EDG	EDG lube oil "Y" strainers	General Corrosion, Crevice Corrosion, and Pitting	PM	See Section 16.2.23 for a general description.  PM checklists (Clean/Inspect 2B, 1B, and 2A EDG Lube Oil "Y" Strainers and Baskets) are credited with discovery of the effects of degradation on the "Y" strainer internal surfaces. The PMs tasks have been modified to check for signs of corrosion on the "Y" strainer internal surfaces during performance of the procedures.
142.	5.8	EDG	EDG Starting Air (SA) and CA intake piping and SA system CKVs	General Corrosion, Crevice Corrosion, and Pitting	PM	See Section 16.2.23 for a general description.  A PM procedure (disassemble, Inspect and Overhaul EDG CKV) is credited with discovery of the effects of pitting, crevice corrosion, and general corrosion of the internal surfaces of EDG SA System CKVs. This procedure has been modified to inspect specifically for corrosion of piping and check for the presence of debris in valves that could indicate the piping in these systems is undergoing corrosion.

**TABLE 16-1  
AGING MANAGEMENT PROGRAMS (AMP), INDEXED BY LRA SECTION AND SYSTEM**

<b>Item No.</b>	<b>LRA Section</b>	<b>System</b>	<b>Components</b>	<b>Aging Mechanism</b>	<b>Program</b>	<b>Program Description</b>
143.	5.8	EDG	EDG SA/CA intake/exhaust piping, EDG intake filters and intake/exhaust mufflers, EDG exhaust piping and flame arrestors	General Corrosion, Crevice Corrosion, Erosion Corrosion, Particulate Wear, Erosion, Fatigue, and Pitting	PM	See Section 16.2.23 for a general description. A PM procedure (Inspect EDG Air Intake Filters) is credited for the discovery of effects of corrosion on the internal surfaces of the EDG SA/CA intake piping, internal surfaces of the EDG intake filters and intake mufflers, and external surfaces of the EDG intake filters and exhaust mufflers. The MPM has been modified to inspect the attached piping for signs of corrosion.
144.	5.8	EDG	EDG SA and CA intake PP	General Corrosion	PM	See Section 16.2.23 for a general description. PM repetitive tasks are credited with the discovery of the effects of corrosion of internal piping surfaces for EDG SA, and CA intake systems. These PM repetitive tasks have been modified to inspect specifically for corrosion of piping and check for the presence of debris in valves that could indicate the piping in these systems is undergoing corrosion.
145.	5.8	EDG	EDG SA and CA intake PP	General Corrosion, Crevice Corrosion, and Pitting	PM	See Section 16.2.23 for a general description. A PM procedure (Remove Relief Valve, Test and Reinstall) is credited with the discovery of degradation of the internal piping surfaces for EDG SA, and CA intake systems. This procedure has been modified to inspect specifically for corrosion of piping and check for the presence of debris in valves that could indicate the piping in these systems is undergoing corrosion.
146.	5.8	EDG	DFO day TKs, drip TKs and associated level switches	General Corrosion, Crevice Corrosion, Pitting, and MIC	DFO (Tanks and Chemistry)	See Section 16.2.16 for a general description. A procedure is credited for mitigating the effects of crevice corrosion, general corrosion, MIC and pitting on the interior surfaces of the EDG DFO day tanks, and drip tanks with associated tank-mounted level switches. Under this procedure, fuel oil chemistry is controlled, including testing for the presence of biologics. The procedure establishes surveillance frequencies, fuel oil specifications (e.g., viscosity, % water and sediment, particulate contamination and biologics), and corrective actions. Sampling and analysis are performed on new fuel prior to unloading from fuel trucks. This procedure specifies limits for water, viscosity, and sediment for both receipt inspection and Technical Specification surveillance for fuel oil in the FOSTs in accordance with ASTM-D975-81. The procedure currently has target values and action levels that give an acceptable range or limit for a given parameter. This procedure now requires the addition of a stabilizer/corrosion inhibitor prior to unloading fuel oil into the FOSTs. This approach provides a better assurance that the desired ratio of inhibitor to fuel oil exists. This procedure was revised to incorporate criteria in accordance ASTM-D270-65 for taking quarterly samples from the diesel FOSTs. This revision involves taking multilevel samples from each diesel FOST rather than sampling only from the tank bottom.

**TABLE 16-1**

**AGING MANAGEMENT PROGRAMS (AMP), INDEXED BY LRA SECTION AND SYSTEM**

<b>Item No.</b>	<b>LRA Section</b>	<b>System</b>	<b>Components</b>	<b>Aging Mechanism</b>	<b>Program</b>	<b>Program Description</b>
147.	5.8	EDG	DFO day TKs, drip TKs	General Corrosion, Crevice Corrosion, Pitting, and MIC	Surveillance Testing	See Section 16.2.30 for a general description. STPs (Testing EDGs and the 4 kV LOCA Sequencers) are credited for mitigation of crevice corrosion, general corrosion, pitting, and MIC on the interior of the DFO day tanks. The procedures provide for periodic draining of DFO day tank of any water that may be present, which minimizes the corrosive effects of water on carbon steel. The tank sample is taken and visually examined for the presence of water in the fuel. This procedure is currently performed monthly after the EDGs are shut down from testing.
148.	Deleted					
149.	Deleted					
150.	5.9	FWS	PP	Erosion Corrosion	FAC	See Section 16.2.18 for a general description. All of the FWS piping subject to aging management review, as well as all the piping in the system not subject to aging management review, are included in this program.
151.	5.9	FWS	PP	Low Cycle Fatigue	Fatigue Monitoring	See Section 16.2.19 for a general description.
152.	5.9	FWS	CKVs	Erosion Corrosion	PM	See Section 16.2.23 for a general description.
153.	5.9	FWS	PP, CKVs, HVs, MOVs, and TEs	General Corrosion, Crevice Corrosion, Erosion Corrosion, and/or Pitting	Chemistry	See Section 16.2.12 for a general description. See Item 62 for a description of Secondary Systems Chemistry procedures.
154.	Deleted					
155.	5.10	FP	NSR portions of the below listed systems required for 10 CFR 50.48(c) are included in the group 041 - CVCS 064 - RCS	General Corrosion	BACI	See Section 16.2.7 for a general description.
156.	5.10	FP	NSR portions of the below listed systems required for 10 CFR 50.48(c) are included in the group: 008 – Well Water 011 – SRW 013 – FP 015 – CC 019 – Compressed Air 029 – Plant Heating 036 – AFW 037 – Demin Water and Cond Storage 044 - Condensate 053 – Plant Drains 071 – Liquid Waste 083 – Main Steam	For Plausible Aging Mechanisms Applicable to These Systems	FP	See Section 16.2.21 for a general description.



**TABLE 16-1**

**AGING MANAGEMENT PROGRAMS (AMP), INDEXED BY LRA SECTION AND SYSTEM**

<b>Item No.</b>	<b>LRA Section</b>	<b>System</b>	<b>Components</b>	<b>Aging Mechanism</b>	<b>Program</b>	<b>Program Description</b>
157.	5.10	FP	NSR portions of the below listed systems required for 10 CFR 50.48(c) are included in the group 013 – FP 023 – DFO 036 – AFW 053 – Plant Drains	For Plausible Aging Mechanisms Applicable to These Systems	FP	See Section 16.2.21 for a general description.
158.	5.10	FP	NSR portions of the below listed systems required for 10 CFR 50.48(c) are included in the group 008 – Well Water 011 – SRW 013 – FP 015 – CC 019 – Compressed Air 029 – Plant Heating 036 – AFW 037 – Demin Water & Cond Storage 044 – Condensate 053 – Plant Drains 071 – Liquid Waste 083 – Main Steam	For Plausible Aging Mechanisms Applicable to These Systems	Structure and System Walkdowns	See Section 16.2.29 for a general description.
159.	Deleted					
160.	Deleted					
161.	Deleted					
162.	5.11A	Auxiliary Building Heating and Ventilation	Fans	Dynamic Loading	Structure and System Walkdowns	See Section 16.2.29 for a general description.
163.	5.11A	Auxiliary Building Heating and Ventilation	Duct flexible collars, GD	Elastomer Degradation, Wear	Structure and System Walkdowns	See Section 16.2.29 for a general description.
164.	5.11A	Auxiliary Building Heating and Ventilation	Ducts, HXs	General and Crevice Corrosion, Pitting	Structure and System Walkdowns	See Section 16.2.29 for a general description.
165.	5.11A	Auxiliary Building Heating and Ventilation	HX	General and Crevice Corrosion, Pitting	PM	See Section 16.2.23 for a general description.
166.	Deleted					
167.	Deleted					
168.	5.11B	Primary Containment Heating and Ventilation	Cooling coil external surfaces	Crevice Corrosion, Pitting	PM	See Section 16.2.23 for a general description.

**TABLE 16-1**  
**AGING MANAGEMENT PROGRAMS (AMP), INDEXED BY LRA SECTION AND SYSTEM**

Item No.	LRA Section	System	Components	Aging Mechanism	Program	Program Description
169.	5.11B	Primary Containment Heating and Ventilation	Fans	Dynamic Loading	PM	See Section 16.2.23 for a general description.
170.	5.11B	Primary Containment Heating and Ventilation	Fans	Dynamic Loading	Structure and System Walkdowns	See Section 16.2.29 for a general description.
171.	5.11B	Primary Containment Heating and Ventilation	Cooler housings, HXs	General Corrosion, Crevice Corrosion, Pitting, MIC	PM	See Section 16.2.23 for a general description.
172.	5.11B	Primary Containment Heating and Ventilation	Cooler rubber boots, GD	Radiation Damage, Elastomer Degradation, Wear	PM	See Section 16.2.23 for a general description.
173.	5.11B	Primary Containment Heating and Ventilation	Cooling coil internal surfaces	Crevice Corrosion, Pitting	Chemistry	See Section 16.2.12 for a general description. See Item 67 for a description of the CC/SRW Chemistry Procedure.
174.	5.11B	Primary Containment Heating and Ventilation	Duct flexible collars, GD	Elastomer Degradation, Wear	Structure and System Walkdowns	See Section 16.2.29 for a general description.
175.	Deleted					
176.	5.11C	Control Room and Diesel Generator Buildings HVAC	Dampers, ducts, fans, filters, HXs	General Corrosion, Crevice Corrosion, MIC, and Pitting	PM	See Section 16.2.23 for a general description. Existing procedures have been modified to include specific items with respect to discovery of these ARDMs to help ensure each plausible ARDM is being adequately managed.
177.	Deleted					
178.	5.11C	Control Room and Diesel Generator Buildings HVAC	Fans	Dynamic Loading	Structure and System Walkdowns	See Section 16.2.29 for a general description.
179.	5.11C	Control Room and Diesel Generator Buildings HVAC	Duct flexible collars	Elastomer Degradation, Wear	Structure and System Walkdowns	See Section 16.2.29 for a general description.
180.	5.11C	Control Room and Diesel Generator Buildings HVAC	Dampers, ducts, fans, FD, filters, HXs	General Corrosion, Crevice Corrosion, MIC, and Pitting	Structure and System Walkdowns	See Section 16.2.29 for a general description.
181.	Deleted					
182.	5.12	Main Steam, Extraction Steam	PP	Erosion Corrosion	FAC	See Section 16.2.18 for a general description.
183.	5.12	Main Steam, Extraction Steam	PP, CKVs, CVs, FOs, HVs, HXs, and MOVs	General Corrosion, Crevice Corrosion, Pitting, and Erosion Corrosion	FAC	See Section 16.2.18 for a general description.

**TABLE 16-1**

**AGING MANAGEMENT PROGRAMS (AMP), INDEXED BY LRA SECTION AND SYSTEM**

<b>Item No.</b>	<b>LRA Section</b>	<b>System</b>	<b>Components</b>	<b>Aging Mechanism</b>	<b>Program</b>	<b>Program Description</b>
184.	5.12	Main Steam, Compressed Air	PP, CVs, HVs, ACC	General Corrosion	PM	See Section 16.2.23 for a general description The quality of the air to IA System components that are within scope is periodically verified, in accordance with PM Checklists. These checklists assure that the system is being maintained in accordance with industry standards for moisture (dewpoint) and particulate contamination. Maintenance of dry air mitigates corrosion of compressed air components.
185.	5.12	Main Steam	CVs	General Corrosion, Erosion Corrosion	PM	See Section 16.2.23 for a general description. Main steam isolation valves (MSIVs) are periodically inspected. The PM activities require the periodic disassembly and inspection of these valves, per the requirements of the PM procedure. These regularly scheduled inspections would result in the detection of the effects of degradation such that corrective action would be taken. Existing procedures were modified to include specific items with respect to discovery of these ARDMs to help ensure each plausible ARDM is being adequately managed.
185A.	5.12	Main Steam	MSIV actuation system	Any Plausible Aging Effects	PM	See Section 16.2.23 for a general description.
186.	5.12	Main Steam	SG blowdown HXs	General Corrosion, Crevice Corrosion, Erosion Corrosion, and Pitting	Chemistry	See Section 16.2.12 for a general description. See Item 67 for a description of the CC/SRW Chemistry Procedure.
187.	5.12	Main Steam	SG blowdown radiation monitor cooler	General Corrosion, Crevice Corrosion, Pitting, and Selective Leaching	Chemistry	See Section 16.2.12 for a general description. See Item 67 for a description of CC/SRW Chemistry Procedure.
188.	5.12	Chemical Addition	HVs	General Corrosion, Crevice Corrosion, and Pitting	Chemistry	See Section 16.2.12 for a general description. See Item 99 for a description of the Demineralized Water Chemistry Procedure.
189.	5.12	Main Steam, Nitrogen & Hydrogen	PP, CKVs, CVs, HVs, FOs, HXs, MOVs, TEs, and TKs	General Corrosion, Crevice Corrosion, Pitting, Erosion Corrosion, Wear, Selective Leaching	Chemistry	See Section 16.2.12 for a general description. See Item 62 for a description of the Secondary Chemistry Procedure.
190.	Deleted					
191.	5.13	NSSS Sampling	Sample coolers, CVs, and HVs that are exposed to borated water (due to leakage)	General Corrosion	BACI	See Section 16.2.7 for a general description.
192.	5.13	NSSS Sampling	CVOP	General Corrosion	PM	See Section 16.2.23 for a general description. The quality of IA System components that are within scope is periodically verified in accordance with PM Checklists. These checklists assure that the system is being maintained in accordance with industry standards for moisture (dew point) and particulate contamination.
193.	5.13	NSSS Sampling	PP and Valves in the RCS hot leg sampling line	Fatigue	Fatigue Monitoring	See Section 16.2.19 for a general description. The FMP was modified to include an engineering evaluation of the piping and valves in the RCS hot leg sampling line.

**TABLE 16-1**

**AGING MANAGEMENT PROGRAMS (AMP), INDEXED BY LRA SECTION AND SYSTEM**

<b>Item No.</b>	<b>LRA Section</b>	<b>System</b>	<b>Components</b>	<b>Aging Mechanism</b>	<b>Program</b>	<b>Program Description</b>
194.	5.13	NSSS Sampling	HXs that are exposed to chemically treated water from the CC System	Crevice Corrosion and Pitting	Chemistry	See Section 16.2.12 for a general description. See Item 67 for a description of the CC/SRW Chemistry Procedure.
195.	5.13	NSSS Sampling	Sample coolers, CVs, HVs, and SVs that are exposed to borated water (as process fluid)	Crevice Corrosion and Pitting	Chemistry	See Section 16.2.12 for a general description. See Item 64 for a description of Primary Chemistry Procedure.
196.	5.13	NSSS Sampling	Sample coolers and HVs that are exposed to steam and feedwater (as process fluid)	Crevice Corrosion and Pitting	Chemistry	See Section 16.2.12 for a general description. See Item 62 for a description of the Secondary Chemistry Procedure.
197.	5.13	NSSS Sampling	PUMP	Rubber Degradation	PM	See Section 16.2.23 for a general description.
198.	Deleted					
199.	Deleted					
200.	Deleted					
201.	5.15	SI	RWT penetrations and associated welds	SCC	BACI	See Section 16.2.7 for a general description. Engineering review discussed in Item 204 concluded that periodic inspections of RWT penetrations and associated welds will be performed as part of BACI Program to manage the effects of aging on subject structures, systems, and components. PM tasks have been generated to perform the inspections.
202.	5.15	SI	PP (fasteners), CKVs, CVs, HVs, HXs, MOVs, RVs, PUMPs, and TKs that are exposed to borated water (due to leakage)	General Corrosion	BACI	See Section 16.2.7 for a general description.
203.	5.15	SI	PP and valves in the safety injection tank (SIT) injection mode flowpath	Fatigue	Fatigue Monitoring	See Section 16.2.19 for a general description. In response to NRC Bulletin 88-08, "Thermal Stresses in Piping Connected to Reactor Coolant Systems," Calvert Cliffs identified the potential for thermal stratification in the piping between the SIT outlet CKVs and the loop inlet CKVs, and subsequently confirmed the natural convection phenomenon. Since the current piping analysis for the affected portions of the SI System does not include the additional stresses imposed by thermal stratification, Calvert Cliffs completed an engineering review of the industry's task reports and determined: (a) any necessary changes to the piping analyses of record for the SI System; and (b) the impact of such changes on fatigue usage parameters used by the FMP. SI System locations were added to the FMP.
204.	5.15	SI	RWT penetrations and associated welds	SCC	BACI	See Section 16.2.7 for a general description. An engineering evaluation determined that RWT penetrations will leak before break. This evaluation confirmed that detection of minor leakage by visual inspection will adequately manage the RWT penetrations prior to a challenge of the structural integrity under design basis conditions. See Item 201.
205.	5.15	SI	PP and valves in the SIT injection and SDC mode flowpaths	Fatigue	Fatigue Monitoring	See Section 16.2.19 for a general description.

**TABLE 16-1**

**AGING MANAGEMENT PROGRAMS (AMP), INDEXED BY LRA SECTION AND SYSTEM**

<b>Item No.</b>	<b>LRA Section</b>	<b>System</b>	<b>Components</b>	<b>Aging Mechanism</b>	<b>Program</b>	<b>Program Description</b>
206.	5.15	SI	Low pressure SI pump seal HXs and high pressure SI Pump seal coolers	General Corrosion, Crevice Corrosion and Pitting	Chemistry	See Section 16.2.12 for a general description. See Item 67 for a description of the CC/SRW Chemistry Procedure.
207.	5.15	SI	All SI System device types that are exposed to borated water (as process fluid)	General Corrosion, Crevice Corrosion and Pitting	Chemistry	See Section 16.2.12 for a general description. See Item 64 for a description of the Primary Chemistry Procedure.
208.	5.15	SI	RWT penetrations and associated that are exposed to borated water (as process fluid)	SCC	Chemistry	See Section 16.2.12 for a general description. See Item 64 for a description of the Primary Chemistry Procedure.
209.	5.15	SI	RWT HXs	Crevice Corrosion and Pitting	Chemistry	See Section 16.2.12 for a general description. See Item 99 for a description of the Demineralized Water Chemistry Procedure.
210.	Deleted					
211.	5.15	SI	RWT perimeter seal	Weathering	Structure and System Walkdowns	See Section 16.2.29 for a general description.
212.	Deleted					
213.	Deleted					
214.	5.16	SW	CC and SRW HXs	Crevice Corrosion, Erosion Corrosion, General Corrosion, MIC, Pitting, and Elastomer Degradation	PM	See Section 16.2.23 for a general description.
215.	5.16	SW	FOs	Crevice Corrosion, Erosion Corrosion, MIC, Particulate Wear Erosion, and Pitting	PM	See Section 16.2.23 for a general description.
216.	5.16	SW	Internally lined PP, BSs, CKVs, CVs, HVs, LC, LJ, and PUMPs	Crevice Corrosion, Galvanic Corrosion, General Corrosion, MIC, Particulate Wear Erosion, Pitting, Elastomer Degradation, and Selective Leaching	PM	See Section 16.2.23 for a general description. PM tasks have been modified to include specific ARDMs where they were not initially included and/or additional specified components/ subcomponents where they were not initially inspected. Degradation of the SW strainer carbon steel drain lines is managed by routine replacement.
217.	5.16	SW	Emergency Core Cooling System Pump Room air coolers	Crevice Corrosion, General Corrosion, MIC, and Pitting	PM	See Section 16.2.23 for a general description. PM tasks have been modified to include specific ARDMs where they were not initially included and/or additional specified components/ subcomponents where they were not initially inspected.
218.	5.16	SW	ACCs, CVs, HVs, and PCVs, with air internal environment	General Corrosion	PM	See Section 16.2.23 for a general description.
219.	5.16	SW	CC and SRW HXs	Crevice Corrosion, General Corrosion, and Pitting	Chemistry	See Section 16.2.12 for a general description. See Item 67 for a description of the CC/SRW Chemistry Procedure.

**TABLE 16-1**

**AGING MANAGEMENT PROGRAMS (AMP), INDEXED BY LRA SECTION AND SYSTEM**

<b>fitem No.</b>	<b>LRA Section</b>	<b>System</b>	<b>Components</b>	<b>Aging Mechanism</b>	<b>Program</b>	<b>Program Description</b>
220.	5.16	SW	SW System bolting	General Corrosion, Crevice Corrosion, and Pitting	Structure and System Walkdowns	See Section 16.2.29 for a general description.
221.	Deleted					
222.	Deleted					
223.	Deleted					
224.	Deleted					
225.	5.17	SRW	Air-operated valves (CV, HV)	General Corrosion	PM	See Section 16.2.23 for a general description. The quality of IA System components that are within scope is periodically verified, in accordance with PM Checklists. These checklists assure that the system is being maintained in accordance with industry standards for moisture (dew point) and particulate contamination. Mitigation of general corrosion of the SRW air-operated valves. The exposure to moisture is minimal and short-term, and is not expected to result in significant levels of degradation of the carbon steel components.
226.	5.17	SRW	PP, AVV, CKVs, CVs, FEs, FOs, HVs, PUMPs, REs, RVs, TEs, TIs, TKs	Crevice Corrosion and Pitting	Chemistry	See Section 16.2.12 for a general description. See Item 67 for a description of the CC/SRW Chemistry Procedure.
227.	5.17	SRW	PP, AVVs, CKVs, CVs, HVs, PUMPs, RVs, TIs	General Corrosion	Chemistry	See Section 16.2.12 for a general description. See Item 67 for a description of the CC/SRW Chemistry Procedure.
228.	5.17	SRW	CVs, HVs, and PUMPs	Selective Leaching	Chemistry	See Section 16.2.12 for a general description. See Item 67 for a description of the CC/SRW Chemistry Procedure.
229a.	5.17	SRW	PUMPs	General Corrosion, Crevice Corrosion and Pitting	PM	See Section 16.2.23 for a general description. The SRW pumps are inspected for general corrosion, crevice corrosion/pitting using the PM Pump Overhaul Procedure. This procedure instructs the user to inspect certain pump components for erosion, wear, and mechanical damage. The procedure has been modified to include inspections for general corrosion, crevice corrosion/pitting on the pump casing and bushings. The procedure directs the user to contact the System Engineer if any of these indications are found, and to replace parts as necessary.
229b.	5.17	SRW	PUMPs	General Corrosion, Crevice Corrosion and Pitting	Surveillance Testing	See Section 16.2.30 for a general description. Pump inspections rely on the SRW pump periodic test of the pump active function (flow vs. head) to trigger the overhaul. The periodicity of these tests is established by Technical Specifications.
230.	Deleted					

**TABLE 16-1**

**AGING MANAGEMENT PROGRAMS (AMP), INDEXED BY LRA SECTION AND SYSTEM**

<b>Item No.</b>	<b>LRA Section</b>	<b>System</b>	<b>Components</b>	<b>Aging Mechanism</b>	<b>Program</b>	<b>Program Description</b>
231.	5.18	SFPC	All items that are exposed to borated water (due to leakage)	General Corrosion	BACI	See Section 16.2.7 for a general description.
232.	5.18	SFPC	SFP demineralizer, filter and pipe supports	General Corrosion, Boric Acid Corrosion	PM	See Section 16.2.23 for a general description. PM tasks have been modified to explicitly call for inspection of the components for signs of boric acid corrosion.
233.	5.18	SFPC	SFPC PUMPs	Cavitation Erosion, Erosion Corrosion	PM	See Section 16.2.23 for a general description. PM tasks have been modified to explicitly present inspection requirements.
234.	5.18	SFPC	HXs	General Corrosion	Chemistry	See Section 16.2.12 for a general description. See Item 67 for a description of the CC/SRW Chemistry Procedure.
235.	6.1	Cables	For information concerning the AMP for LRA Section 6.1, Cables, see items 258 through 266			
236a.	6.2	Electrical Commodities	Battery terminals/ charger and inverter cabinets	Electrical Stressors, General Corrosion, and Wear	PM	See Section 16.2.23 for a general description. PM tasks have been modified to include specific ARDMs where they were not initially included and/or additional specified components/ subcomponents where they were not initially inspected.
236b.	6.2	Electrical Commodities	Battery terminals/ charger and inverter cabinets	Electrical Stressors, General Corrosion, and Wear	Surveillance Testing	See Section 16.2.30 for a general description.
237.	6.2	Electrical Commodities	Breaker cabinets	Electrical Stressors, Wear, and Fatigue	PM	See Section 16.2.23 for a general description. PM tasks have been modified to include specific ARDMs where they were not initially included and/or additional specified components/ subcomponents where they were not initially inspected.
238.	6.2	Electrical Commodities	Bus cabinets	Electrical Stressors, Wear, and Fatigue	PM	See Section 16.2.23 for a general description. PM tasks have been modified to include specific ARDMs where they were not initially included and/or additional specified components/ subcomponents where they were not initially inspected.
239.	6.2	Electrical Commodities	Bus cabinets	Electrical Stressors, Wear, and Fatigue	PM	See Section 16.2.23 for a general description. New PM Tasks have been created to include specific ARDMs for components/sub-components that were not initially inspected.
240.	6.2	Electrical Commodities	Motor-control cabinets panels	Electrical Stressors, Wear, Fatigue, and Dynamic Loading	PM	See Section 16.2.23 for a general description. PM tasks have been modified to include specific ARDMs where they were not initially included and/or additional specified components/ subcomponents where they were not initially inspected.
241.	6.2	Electrical Commodities	Motor-control cabinets panels	Electrical Stressors, Wear, Fatigue, and Dynamic Loading	PM	See Section 16.2.23 for a general description. New PM Tasks have been created to include specific ARDMs for components/sub-components that were not initially inspected.

**TABLE 16-1  
AGING MANAGEMENT PROGRAMS (AMP), INDEXED BY LRA SECTION AND SYSTEM**

<b>Item No.</b>	<b>LRA Section</b>	<b>System</b>	<b>Components</b>	<b>Aging Mechanism</b>	<b>Program</b>	<b>Program Description</b>
242.	6.2	Electrical Commodities	Miscellaneous panels	Electrical Stressors, Wear, Fatigue, and Dynamic Loading	PM	See Section 16.2.23 for a general description. PM tasks have been modified to include specific ARDMs where they were not initially included and/or additional specified components/ subcomponents where they were not initially inspected.
243.	6.2	Electrical Commodities	Miscellaneous panels	Electrical Stressors, Wear, Fatigue, and Dynamic Loading	PM	See Section 16.2.23 for a general description. New PM Tasks have been created to include specific ARDMs for components/sub-components that were not initially inspected.
244.	6.2	Electrical Commodities	Local control station panels	Electrical Stressors, Wear, Fatigue, and General Corrosion	PM	See Section 16.2.23 for a general description. PM tasks have been modified to include specific ARDMs where they were not initially included and/or additional specified components/ subcomponents where they were not initially inspected.
245.	6.2	Electrical Commodities	Local control station panels	Electrical Stressors, Wear, Fatigue, and General Corrosion	PM	See Section 16.2.23 for a general description. New PM Tasks have been created to include specific ARDMs for components/sub-components that were not initially inspected.
245a.	NA	Electrical Commodities	Fuse Holders	Electrical Stressors, Corrosion, Fatigue	PM	See Section 16.2.23 for a general description.
245b.	NA	Electrical Commodities	Fuse Holders	Electrical Stressors, Corrosion, Fatigue	Surveillance Testing	See Section 16.2.30 for a general description.
246.	6.3	EQ Equipment	All long-lived components on the EQ Master List	Thermal, Radiative, and Kapton-Unique Aging Effects	Environmental Qualification	See Section 16.2.17 for a general description.
247.	6.3	EQ Equipment	EQ Penetrations	Thermal, Radiative	Containment Local Leakage Rate Testing	See Section 16.2.14 for a general description.
248.	6.3	EQ Equipment	EQ Penetrations	General Corrosion	Structure and System Walkdowns	See Section 16.2.29 for a general description.
249.	6.3	EQ Equipment	EQ Penetrations	General Corrosion	Protective Coatings	See Section 16.2.24 for a general description.
250.	Deleted					
251.	Deleted					
252.	Deleted					
253.	6.4	Instrument Lines	Instrument line supports	General Corrosion and Elastomer Hardening	Structure & System Walkdown	See Section 16.2.29 for a general description.
254.	Deleted					
255.	NA	Piping External Surfaces	External pipe surfaces	Various Corrosion Mechanisms	BACI	See Section 16.2.7 for a general description.
256.	NA	Piping External Surfaces	External pipe surfaces	Various Corrosion Mechanisms	Structure and System Walkdowns	See Section 16.2.29 for a general description.
257.	Deleted					
258.	6.1	Cables	In-Scope Random-Lay tray Electrical Cables and Connections (low and medium voltage)	Thermal Stress, Radiation Stress, Moisture	Cable	See Section 16.2.9 for a general description.
259.	6.1	Cables	In-Scope Maintained-Spacing Tray Electrical Cables and Connections (low and medium voltage)	Thermal Stress, Radiation Stress, Moisture	Cable	See Section 16.2.9 for a general description.



**TABLE 16-1**  
**AGING MANAGEMENT PROGRAMS (AMP), INDEXED BY LRA SECTION AND SYSTEM**

<b>Item No.</b>	<b>LRA Section</b>	<b>System</b>	<b>Components</b>	<b>Aging Mechanism</b>	<b>Program</b>	<b>Program Description</b>
260.	6.1	Cables	In-Scope Thermal and Radiative Synergy Electrical Cables and Connections (low and medium voltage)	Thermal Stress, Radiation Stress, Moisture	Cable	See Section 16.2.9 for a general description.
261.	6.1	Cables	In-Scope Large-Motor Terminations	Thermal Stress	Cable	See Section 16.2.9 for a general description.
262.	N/A	Cables	In-Scope Inaccessible Power Cables	Thermal Stress, Radiation Stress, Moisture/Submergence/Wetting	Cable	See Section 16.2.9 for a general description.
263.	6.1	Cables	In-Scope Sensitive, Low Current Instrumentation Circuits	Thermal Stress, Radiation Stress, Moisture	Cable	See Section 16.2.9 for a general description.
264.	6.1	Cables	In-Scope, 4 kV Bus Insulating Boots	Thermal Stress, Radiation Stress, Moisture	Cable	See Section 16.2.9 for a general description.
265.	6.1	Cables	In-Scope ITE (ITE Imperial Company) MCC Internal Wiring	Thermal Stress, Radiation Stress, Moisture	Cable	See Section 16.2.9 for a general description.
266.	N/A	Cables	In-Scope EQ Cables and Connections	Thermal Stress, Radiation Stress, Moisture	Cable	See Section 16.2.9 for a general description.

**TABLE 16-1**  
**AGING MANAGEMENT PROGRAMS (AMP), INDEXED BY LRA SECTION AND SYSTEM**

Component Key

ACC	Accumulator	HV	Hand Valve
AVV	Auto Vent Valve	HX	Heat Exchanger
BS	Basket Strainer	LC	Level Controller
CA	Combustion Air	LJ	'LJ' Pipe Class
CAC	Containment Air Cooler	MOV	Motor-Operated Valve
CC	Component Cooling	PCV	Pressure Control Valve
CKV	Check Valve	PP	Piping
CV	Control Valve	PUMP	Pump/Driver Assembly
CVOP	Control Valve Operator	PZV	Pressurizer
EB	'EB' Pipe Class	RE	Radiation Element
ERV	Electro-Relief Valve	RV	Relief Valve
FD	Fire Damper	SV	Solenoid Valve
FE	Flow Element	TE	Temperature Element
FO	Flow Orifice	TI	Temperature Indicator
GD	Gravity Damper	TIC	Temperature Indicating Controller
GOV	Governor	TK	Tank
HB	'HB' Pipe Class		