

3.3 AUXILIARY SYSTEMS

3.3.1 Introduction

This section provides the results of the aging management reviews for those components in the auxiliary systems which are subject to aging management review. The following systems are addressed in this section (system descriptions are available in the referenced sections).

- [Spent Fuel Pit Cooling \(Section 2.3.3.1\)](#)
- [Service Water \(Section 2.3.3.2\)](#)
- [Component Cooling Water \(Section 2.3.3.3\)](#)
- [Compressed Air \(Section 2.3.3.4\)](#)
- [Nitrogen \(Section 2.3.3.5\)](#)
- [Chemical and Volume Control \(Section 2.3.3.6\)](#)
- [Primary Makeup Water \(Section 2.3.3.7\)](#)
- [Heating, Ventilation and Air Conditioning \(Section 2.3.3.8\)](#)
- [Containment Cooling and Filtration \(Section 2.3.3.9\)](#)
- [Control Room HVAC \(Section 2.3.3.10\)](#)
- [Fire Protection – Water \(Section 2.3.3.11\)](#)
- [Fire Protection – CO₂, Halon, and RCP Oil Collection Systems \(Section 2.3.3.12\)](#)
- [Fuel Oil \(Section 2.3.3.13\)](#)
- [Emergency Diesel Generator \(Section 2.3.3.14\)](#)
- [Security Generator \(Section 2.3.3.15\)](#)
- [Appendix R Diesel Generators \(Section 2.3.3.16\)](#)
- [City Water \(Section 2.3.3.17\)](#)
- [Plant Drains \(Section 2.3.3.18\)](#)
- [Miscellaneous Systems in Scope for 10 CFR 54.4\(a\)\(2\) \(Section 2.3.3.19\)](#)

[Table 3.3.1](#), Summary of Aging Management Programs for Auxiliary Systems Evaluated in Chapter VII of NUREG-1801, provides the summary of the programs evaluated in NUREG-1801 for the auxiliary systems component group. This table uses the format described in the introduction to Section 3. Hyperlinks are provided to the program evaluations in [Appendix B](#).

3.3.2 Results

The following system tables summarize the results of aging management reviews and the NUREG-1801 comparison for auxiliary systems.

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- [Table 3.3.2-2-IP2](#) Service Water System—Summary of Aging Management Review

- [Table 3.3.2-2-IP3](#) Service Water System—Summary of Aging Management Review
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- [Table 3.3.2-15-IP3](#) Security Generator System—Summary of Aging Management Review
- [Table 3.3.2-16-IP2](#) SBO/Appendix R Diesel Generator System—Summary of Aging Management Review
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- [Table 3.3.2-17-IP2](#) City Water System—Summary of Aging Management Review
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Miscellaneous Systems in Scope for 10 CFR 54.4(a)(2)

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- [Table 3.3.2-19-29-IP3](#) Instrument Air System, Nonsafety-Related Components Potentially Affecting Safety Functions—Summary of Aging Management Review
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- [Table 3.3.2-19-62-IP3](#) Weld Channel and Containment Penetration Pressurization System, Nonsafety-Related Components Potentially Affecting Safety Functions—Summary of Aging Management Review

3.3.2.1 Materials, Environments, Aging Effects Requiring Management and Aging Management Programs

The following sections list the materials, environments, aging effects requiring management, and aging management programs for the auxiliary systems. Programs are described in [Appendix B](#). Further details are provided in the system tables.

3.3.2.1.1 Spent Fuel Pit Cooling

Materials

Spent fuel pit cooling system components are constructed of the following materials.

- boron carbide / elastomer (Boraflex)
- boron carbide / aluminum powder clad in aluminum (Boral)

Environment

Spent fuel pit cooling system components are exposed to the following environments.

- treated borated water

Aging Effects Requiring Management

The following aging effects associated with the spent fuel pit cooling system require management.

- change in material properties
- cracking
- loss of material

Aging Management Programs

The following aging management programs manage the aging effects for the spent fuel pit cooling system components.

- [Boraflex Monitoring](#)
- [Boral Surveillance](#)
- [Water Chemistry Control – Primary and Secondary](#)

3.3.2.1.2 Service Water

Materials

Service water system components are constructed of the following materials.

- carbon steel

- copper alloy
- copper alloy > 15% zinc
- copper alloy > 15% zinc (inhibited)
- glass
- gray cast iron
- nickel alloy
- stainless steel
- titanium

Environment

Service water system components are exposed to the following environments.

- condensation
- raw water
- soil
- treated water

Aging Effects Requiring Management

The following aging effects associated with the service water system require management.

- cracking
- fouling
- loss of material
- loss of material – wear

Aging Management Programs

The following aging management programs manage the aging effects for the service water system components.

- [Bolting Integrity](#)
- [Buried Piping and Tanks Inspection](#)
- [External Surfaces Monitoring](#)
- [Heat Exchanger Monitoring](#)
- [Selective Leaching](#)
- [Service Water Integrity](#)
- [Water Chemistry Control – Closed Cooling Water](#)
- [Water Chemistry Control – Primary and Secondary](#)

3.3.2.1.3 Component Cooling Water

Materials

Component cooling water system components are constructed of the following materials.

- aluminum bronze
- carbon steel
- cast austenitic stainless steel (CASS)
- copper alloy
- copper alloy > 15% zinc (inhibited)
- gray cast iron
- stainless steel

Environment

Component cooling water system components are exposed to the following environments.

- air – indoor
- condensation
- raw water
- treated borated water
- treated borated water > 140°F
- treated water
- treated water > 140°F

Aging Effects Requiring Management

The following aging effects associated with the component cooling water system require management.

- cracking
- cracking – fatigue
- fouling
- loss of material
- loss of material – wear

Aging Management Programs

The following aging management programs manage the aging effects for the component cooling water system components.

- [Bolting Integrity](#)
- [Boric Acid Corrosion Prevention](#)

- External Surfaces Monitoring
- Heat Exchanger Monitoring
- Selective Leaching
- Service Water Integrity
- Water Chemistry Control – Closed Cooling Water
- Water Chemistry Control – Primary and Secondary

3.3.2.1.4 Compressed Air

Materials

Compressed air system components are constructed of the following materials.

- aluminum
- carbon steel
- copper alloy
- copper alloy > 15% zinc
- stainless steel

Environment

Compressed air system components are exposed to the following environments.

- air – indoor
- air – treated
- condensation

Aging Effects Requiring Management

The following aging effects associated with the compressed air system require management.

- loss of material

Aging Management Programs

The following aging management programs manage the aging effects for the compressed air system components.

- Bolting Integrity
- External Surfaces Monitoring
- One-Time Inspection
- Periodic Surveillance and Preventive Maintenance

3.3.2.1.5 Nitrogen

Materials

Nitrogen system components are constructed of the following materials.

- carbon steel
- copper alloy
- copper alloy > 15% zinc
- stainless steel

Environment

Nitrogen system components are exposed to the following environments.

- air – indoor
- gas

Aging Effects Requiring Management

The following aging effects associated with the nitrogen system require management.

- loss of material

Aging Management Programs

The following aging management programs manage the aging effects for the nitrogen system components.

- [Bolting Integrity](#)
- [External Surfaces Monitoring](#)

3.3.2.1.6 Chemical and Volume Control

Materials

Chemical and volume control system components are constructed of the following materials.

- carbon steel
- CASS
- copper alloy
- copper alloy > 15% zinc
- gray cast iron
- stainless steel

Environment

Chemical and volume control system components are exposed to the following environments.

- air – indoor
- lube oil
- treated borated water
- treated borated water > 140°F
- treated water

Aging Effects Requiring Management

The following aging effects associated with the chemical and volume control system require management.

- cracking
- cracking – fatigue
- fouling
- loss of material
- loss of material – wear

Aging Management Programs

The following aging management programs manage the aging effects for chemical and volume control system components.

- [Bolting Integrity](#)
- [Boric Acid Corrosion Prevention](#)
- [External Surfaces Monitoring](#)
- [Heat Exchanger Monitoring](#)
- [Oil Analysis](#)
- [Periodic Surveillance and Preventive Maintenance](#)
- [Selective Leaching](#)
- [Water Chemistry Control – Closed Cooling Water](#)
- [Water Chemistry Control – Primary and Secondary](#)

3.3.2.1.7 Primary Makeup Water

Materials

Primary makeup water system components are constructed of the following materials.

- carbon steel
- copper alloy

- glass
- stainless steel

Environment

Primary makeup water system components are exposed to the following environments.

- air – indoor
- air – outdoor
- concrete
- steam
- treated water

Aging Effects Requiring Management

The following aging effects associated with the primary makeup water system require management.

- cracking
- loss of material

Aging Management Programs

The following aging management programs manage the aging effects for primary makeup water system components.

- [Bolting Integrity](#)
- [External Surfaces Monitoring](#)
- [Water Chemistry Control – Primary and Secondary](#)

3.3.2.1.8 Heating, Ventilation and Air Conditioning

Materials

Heating, ventilation and air conditioning system components are constructed of the following materials.

- aluminum
- carbon steel
- copper alloy
- elastomer
- stainless steel

Environment

Heating, ventilation and air conditioning system components are exposed to the following environments.

- air – indoor
- air – outdoor

Aging Effects Requiring Management

The following aging effects associated with the heating, ventilation and air conditioning system require management.

- change in material properties
- cracking
- loss of material

Aging Management Programs

The following aging management programs manage the aging effects for the heating, ventilation and air conditioning systems components.

- [Bolting Integrity](#)
- [External Surfaces Monitoring](#)
- [Periodic Surveillance and Preventive Maintenance](#)

3.3.2.1.9 Containment Cooling and Filtration

Materials

Containment cooling and filtration system components are constructed of the following materials.

- carbon steel
- copper alloy
- copper alloy > 15% zinc
- elastomer
- stainless steel
- titanium

Environment

Containment cooling and filtration system components are exposed to the following environments.

- air – indoor
- condensation

- raw water

Aging Effects Requiring Management

The following aging effects associated with the containment cooling and filtration system require management.

- change in material properties
- cracking
- fouling
- loss of material
- loss of material – wear

Aging Management Programs

The following aging management programs manage the aging effects for containment cooling and filtration system components.

- [Bolting Integrity](#)
- [External Surfaces Monitoring](#)
- [Periodic Surveillance and Preventive Maintenance](#)
- [Service Water Integrity](#)

3.3.2.1.10 Control Room HVAC

Materials

Control room HVAC system components are constructed of the following materials.

- aluminum
- carbon steel
- copper alloy
- elastomer
- stainless steel

Environment

Control room HVAC system components are exposed to the following environments.

- air – indoor
- air – outdoor
- condensation
- gas
- raw water

Aging Effects Requiring Management

The following aging effects associated with the control room HVAC system require management.

- change in material properties
- cracking
- fouling
- loss of material

Aging Management Programs

The following aging management programs manage the aging effects for the control room HVAC system components.

- [Bolting Integrity](#)
- [External Surfaces Monitoring](#)
- [Periodic Surveillance and Preventive Maintenance](#)
- [Service Water Integrity](#)

3.3.2.1.11 Fire Protection – Water

Materials

Fire protection – water system components are constructed of the following materials.

- carbon steel
- copper alloy
- copper alloy > 15% zinc
- gray cast iron
- stainless steel

Environment

Fire protection – water system components are exposed to the following environments.

- air – indoor
- air – outdoor
- concrete
- exhaust gas
- soil
- treated water

Aging Effects Requiring Management

The following aging effects associated with the fire protection – water system require management.

- cracking – fatigue
- loss of material

Aging Management Programs

The following aging management programs manage the aging effects for fire protection – water system components.

- [Aboveground Steel Tanks](#)
- [Bolting Integrity](#)
- [Buried Piping and Tanks Inspection](#)
- [External Surfaces Monitoring](#)
- [Fire Protection](#)
- [Fire Water System](#)
- [Selective Leaching](#)

3.3.2.1.12 Fire Protection – CO₂, Halon, and RCP Oil Collection Systems

Materials

Fire protection – CO₂, halon, and RCP oil collection systems components are constructed of the following materials.

- aluminum
- carbon steel
- copper alloy
- stainless steel

Environment

Fire protection – CO₂, halon, and RCP oil collection systems components are exposed to the following environments.

- air – indoor
- gas
- lube oil

Aging Effects Requiring Management

The following aging effects associated with the fire protection – CO₂, halon, and RCP oil collection systems require management.

- loss of material

Aging Management Programs

The following aging management programs manage the aging effects for fire protection – CO₂, halon, and RCP oil collection systems components.

- [Bolting Integrity](#)
- [Boric Acid Corrosion Prevention](#)
- [Fire Protection](#)
- [One-Time Inspection](#)

3.3.2.1.13 Fuel Oil

Materials

Fuel oil system components are constructed of the following materials.

- carbon steel
- copper alloy
- copper alloy > 15% zinc
- glass
- gray cast iron
- stainless steel

Environment

Fuel oil system components are exposed to the following environments.

- air – indoor
- air – outdoor
- concrete
- fuel oil
- soil

Aging Effects Requiring Management

The following aging effects associated with the fuel oil system require management.

- fouling
- loss of material

Aging Management Programs

The following aging management programs manage the aging effects for fuel oil system components.

- [Aboveground Steel Tanks](#)
- [Bolting Integrity](#)
- [Buried Piping and Tanks Inspection](#)
- [Diesel Fuel Monitoring](#)
- [External Surfaces Monitoring](#)
- [Fire Protection](#)
- [Periodic Surveillance and Preventive Maintenance](#)

3.3.2.1.14 Emergency Diesel Generator

Materials

Emergency diesel generator system components are constructed of the following materials.

- aluminum
- carbon steel
- copper alloy
- copper alloy > 15% zinc
- elastomer
- glass
- gray cast iron
- stainless steel
- titanium

Environment

Emergency diesel generator system components are exposed to the following environments.

- air – indoor
- air – outdoor
- condensation
- exhaust gas
- lube oil
- raw water
- treated water
- treated water > 140°F

Aging Effects Requiring Management

The following aging effects associated with the emergency diesel generator system require management.

- change in material properties
- cracking
- cracking – fatigue
- fouling
- loss of material
- loss of material – wear

Aging Management Programs

The following aging management programs manage the aging effects for emergency diesel generator system components.

- [Bolting Integrity](#)
- [External Surfaces Monitoring](#)
- [Oil Analysis](#)
- [One-Time Inspection](#)
- [Periodic Surveillance and Preventive Maintenance](#)
- [Selective Leaching](#)
- [Service Water Integrity](#)
- [Water Chemistry Control – Closed Cooling Water](#)

3.3.2.1.15 Security Generator

Materials

Security generator system components are constructed of the following materials.

- aluminum
- carbon steel
- copper alloy > 15% zinc
- stainless steel

Environment

Security generator system components are exposed to the following environments.

- air – indoor
- exhaust gas
- gas
- soil
- treated water

Aging Effects Requiring Management

The following aging effects associated with the security generator system require management.

- cracking – fatigue
- fouling
- loss of material

Aging Management Programs

The following aging management programs manage the aging effects for security generator system components.

- [Bolting Integrity](#)
- [Buried Piping and Tanks Inspection](#)
- [External Surfaces Monitoring](#)
- [Periodic Surveillance and Preventive Maintenance](#)
- [Selective Leaching](#)
- [Water Chemistry Control – Closed Cooling Water](#)

3.3.2.1.16 Appendix R Diesel Generators

Materials

Appendix R diesel generator system components are constructed of the following materials.

- aluminum
- carbon steel
- copper alloy
- copper alloy > 15% zinc
- copper alloy > 15% zinc (inhibited)
- glass
- stainless steel

Environment

Appendix R diesel generator system components are exposed to the following environments.

- air – indoor
- air – outdoor
- condensation
- exhaust gas
- lube oil

- treated water
- treated water > 140°F

Aging Effects Requiring Management

The following aging effects associated with the Appendix R diesel generator system require management.

- cracking
- cracking – fatigue
- fouling
- loss of material
- loss of material – wear

Aging Management Programs

The following aging management programs manage the aging effects for Appendix R diesel generator system components.

- [Bolting Integrity](#)
- [External Surfaces Monitoring](#)
- [Heat Exchanger Monitoring](#)
- [Oil Analysis](#)
- [Periodic Surveillance and Preventive Maintenance](#)
- [Selective Leaching](#)
- [Water Chemistry Control – Closed Cooling Water](#)

3.3.2.1.17 City Water

Materials

City water system components are constructed of the following materials.

- carbon steel
- copper alloy
- copper alloy > 15% zinc
- gray cast iron
- stainless steel

Environment

City water system components are exposed to the following environments.

- air – indoor
- air – outdoor
- concrete

- soil
- treated water

Aging Effects Requiring Management

The following aging effects associated with the city water system require management.

- loss of material

Aging Management Programs

The following aging management programs manage the aging effects for city water system components.

- [Aboveground Steel Tanks](#)
- [Bolting Integrity](#)
- [Buried Piping and Tanks Inspection](#)
- [External Surfaces Monitoring](#)
- [Periodic Surveillance and Preventive Maintenance](#)
- [Selective Leaching](#)

3.3.2.1.18 Plant Drains

Materials

Plant drains components are constructed of the following materials.

- carbon steel
- stainless steel

Environment

Plant drains components are exposed to the following environments.

- air – indoor
- air – outdoor
- concrete
- gas
- raw water
- soil
- treated borated water

Aging Effects Requiring Management

The following aging effects associated with the plant drains require management.

- loss of material

Aging Management Programs

The following aging management programs manage the aging effects for plant drains components.

- [Bolting Integrity](#)
- [Boric Acid Corrosion Prevention](#)
- [Buried Piping and Tanks Inspection](#)
- [External Surfaces Monitoring](#)
- [One-Time Inspection](#)
- [Periodic Surveillance and Preventive Maintenance](#)
- [Water Chemistry Control – Primary and Secondary](#)

3.3.2.1.19 Miscellaneous Systems in Scope for 10 CFR 54.4(a)(2)

The following lists encompass materials, environments, aging effects requiring management, and aging management programs for the series 3.3.2-19-xx-IPx tables.

Materials

Nonsafety-related components affecting safety-related systems are constructed of the following materials.

- aluminum
- carbon steel
- carbon steel coated
- CASS
- copper alloy
- copper alloy > 15% zinc
- elastomer
- glass
- gray cast iron
- nickel alloy
- plastic
- stainless steel

Environment

Nonsafety-related components affecting safety-related systems are exposed to the following environments.

- air – indoor
- air – treated
- condensation
- fire protection foam
- fuel oil
- gas
- lube oil
- raw water
- steam
- treated borated water
- treated borated water > 140°F
- treated water
- treated water > 140°F

Aging Effects Requiring Management

The following aging effects associated with nonsafety-related components affecting safety-related systems require management.

- change of material properties
- cracking
- cracking – fatigue
- loss of material

Aging Management Programs

The following aging management programs manage the effects of aging on nonsafety-related components affecting safety-related systems.

- [Bolting Integrity](#)
- [Boric Acid Corrosion Prevention](#)
- [Diesel Fuel Monitoring](#)
- [External Surfaces Monitoring](#)
- [Fire Water System](#)
- [Flow-Accelerated Corrosion](#)
- [Oil Analysis](#)
- [One-Time Inspection](#)
- [Periodic Surveillance and Preventive Maintenance](#)
- [Selective Leaching](#)
- [Service Water Integrity](#)
- [Water Chemistry Control – Auxiliary Systems](#)

- [Water Chemistry Control – Closed Cooling Water](#)
- [Water Chemistry Control – Primary and Secondary](#)

3.3.2.2 Further Evaluation of Aging Management as Recommended by NUREG-1801

NUREG-1801 indicates that further evaluation is necessary for certain aging effects and other issues discussed in Section 3.3.2.2 of NUREG-1800. The following sections are numbered in accordance with the discussions in NUREG-1800 and explain the IPEC approach to those areas requiring further evaluation. Programs are described in [Appendix B](#).

3.3.2.2.1 Cumulative Fatigue Damage

Where identified as an aging effect requiring management for components designed to ASME Code requirements, the analysis of fatigue is a TLAA as defined in 10 CFR 54.3. TLAA's are evaluated in accordance with 10 CFR 54.21(c). Evaluation of this TLAA is addressed in [Section 4.3](#).

Where fatigue damage is identified as an aging effect requiring management for components with no fatigue design requirements, the aging effect is managed by inspection. The [Periodic Surveillance and Preventive Maintenance](#) and [Fire Protection](#) Programs will manage cracking due to fatigue for these components by periodic visual inspection of a representative sample of component surfaces.

3.3.2.2.2 Reduction of Heat Transfer due to Fouling

Reduction of heat transfer due to fouling is an aging effect requiring management for stainless steel heat exchanger tubes exposed to treated water. At IPEC there are no stainless steel heat exchanger tubes exposed to treated water in the auxiliary systems with an intended function of heat transfer. This item is not applicable to IPEC.

3.3.2.2.3 Cracking due to Stress Corrosion Cracking (SCC)

1. Cracking due to SCC can occur in the stainless steel components of a BWR standby liquid control (SLC) system. IP2 and IP3 are PWRs and do not have SLC systems. This item is not applicable to IPEC.
2. Cracking due to SCC can occur in stainless steel heat exchanger components exposed to treated water greater than 140°F. For IPEC, the only stainless steel heat exchanger components exposed to treated water greater than 140°F in the auxiliary systems are in the steam generator secondary side sample coolers. This aging effect for these sample coolers is compared to results for the steam and power conversion systems in NUREG1801. This item is not applicable to IPEC.
3. Cracking due to SCC can occur in stainless steel diesel engine exhaust piping exposed to diesel exhaust if moisture can collect inside the component when the diesel is not in operation. At IPEC, the stainless steel exhaust components are not subject to significant moisture accumulation that would allow cracking to

occur. Therefore, cracking due to SCC is not an aging effect requiring management for the stainless steel diesel engine exhaust piping. This item is not applicable to IPEC.

3.3.2.2.4 Cracking due to Stress Corrosion Cracking and Cyclic Loading

1. Cracking due to SCC and cyclic loading in stainless steel PWR nonregenerative heat exchanger components exposed to treated borated water greater than 140°F in the chemical and volume control system is an aging effect requiring management. The [Water Chemistry Control – Primary and Secondary](#) Program manages cracking of stainless steel non-regenerative heat exchanger components exposed to treated borated water. The program is augmented by the [One-Time Inspection](#) Program which will verify the absence of cracking through the use of visual and volumetric NDE techniques. Absence of cracking of the tubes and tubesheet is also verified by monitoring RCS leakage and radiation levels in the component cooling water system. Temperature monitoring is a much less sensitive technique and is not used.
2. Cracking due to SCC and cyclic loading in stainless steel PWR regenerative heat exchanger components exposed to treated borated water greater than 140°F is an aging effect requiring management. The [Water Chemistry Control – Primary and Secondary](#) Program manages cracking of stainless steel regenerative heat exchanger components exposed to treated borated water. The regenerative heat exchanger is of all welded construction and inspections are not possible. The water chemistry control program is augmented by the [One-Time Inspection](#) Program which will verify the absence of cracking through the use of visual and volumetric NDE techniques of components in similar environments.
3. Cracking due to SCC and cyclic loading could occur in the stainless steel pump casing of PWR high-pressure pumps in the chemical and volume control system (CVCS). Loss of material for the pump casing is managed by the Water Chemistry Control – Primary and Secondary program. The stainless steel CVCS charging pump casings are exposed to treated borated water that is below the 140°F threshold for SCC. Consequently, the [Water Chemistry Control – Primary and Secondary](#) Program is not specifically credited to manage cracking of the CVCS charging pumps due to SCC. Cracking of the charging pumps due to cyclic loading is managed by the [Periodic Surveillance and Preventive Maintenance](#) Program, which will use visual inspections of external casing surfaces for signs of cracking or leakage during the regularly scheduled quarterly pump surveillances.

3.3.2.2.5 Hardening and Loss of Strength due to Elastomer Degradation

1. Cracking and change in material properties due to elastomer degradation in elastomer flexible connections of auxiliary systems and other systems exposed to

air – indoor are aging effects requiring management at IPEC. These aging effects are managed by the [Periodic Surveillance and Preventive Maintenance](#) Program. This program includes periodic visual inspections and physical manipulation of the flexible connections to confirm that the components are not experiencing any aging that would affect accomplishing their intended functions.

2. For the auxiliary systems at IPEC no credit is taken for any elastomer linings to prevent loss of material from the underlying material such that the linings would require aging management. With respect to elastomer linings, this item is not applicable to IPEC. However, the applicable NUREG-1801 line was used as a comparison for elastomer components exposed to treated water. Cracking and change in material properties due to elastomer degradation in these components are managed by the [Periodic Surveillance and Preventive Maintenance](#) Program. This program includes periodic visual inspections of a representative sample of interior and exterior elastomer surfaces to confirm that the components are not experiencing any aging that would affect accomplishing their intended functions.

3.3.2.2.6 Reduction of Neutron-Absorbing Capacity and Loss of Material due to General Corrosion

Reduction of neutron-absorbing capacity and loss of material due to general corrosion are aging effects requiring management for Boral spent fuel storage racks exposed to a treated borated water environment. These aging effects are managed by the Boral Surveillance Program. This program uses coupon samples to periodically monitor physical and chemical properties of the absorber material. The [Boral Surveillance](#) Program is supplemented by the [Water Chemistry Control – Primary and Secondary](#) Program.

3.3.2.2.7 Loss of Material due to General, Pitting, and Crevice Corrosion

1. Steel piping and components in auxiliary systems that are exposed to lubricating oil are managed by the [Oil Analysis](#) Program, which includes periodic sampling and analysis of lubricating oil to maintain contaminants within acceptable limits, thereby preserving an environment that is not conducive to corrosion. The [One-Time Inspection](#) Program will use visual inspections or non-destructive examinations of representative samples to confirm that the Oil Analysis Program has been effective at managing aging effects for components that credit this program.

Steel piping components and tanks of the reactor coolant pump oil collection system are not continuously exposed to a lubricating oil environment that is maintained by the [Oil Analysis](#) Program. Therefore this program is not credited for managing loss of material on these components. Instead these components are managed by the [One-Time Inspection](#) Program. This program will use visual

or volumetric NDE techniques to inspect a representative sample of the internal surfaces to assure there is no significant corrosion.

2. Loss of material due to general, pitting, and crevice corrosion could occur in steel components in the BWR reactor water cleanup and shutdown cooling systems exposed to treated water. IP2 and IP3 are PWRs and do not have these systems. This item is not applicable to IPEC.
3. Loss of material due to general (steel only) pitting and crevice corrosion for carbon steel and stainless steel diesel exhaust piping and components exposed to diesel exhaust in the emergency diesel generator, Appendix R diesel generator and security generator systems is managed by the [Periodic Surveillance and Preventive Maintenance \(PSPM\)](#) Program. This program uses periodic visual inspections to manage loss of material for these components. Additionally, the [One-Time Inspection](#) program will use visual or volumetric NDE techniques to inspect a representative sample of the internal surfaces of stainless steel components of the emergency diesel generator systems. The carbon steel diesel exhaust piping and components in the fire protection system are managed by the [Fire Protection](#) Program. The Fire Protection Program uses visual inspections of diesel exhaust piping and components to manage loss of material. These inspections in the PSPM, One-Time Inspection and Fire Protection Programs will manage the aging effect of loss of material such that the intended function of the components will not be affected.

3.3.2.2.8 Loss of Material due to General, Pitting, Crevice, and Microbiologically-Influenced Corrosion (MIC)

Loss of material due to general, pitting, crevice, and MIC for carbon steel (with or without coating or wrapping) piping and components buried in soil in the auxiliary systems at IPEC is managed by the [Buried Piping and Tanks Inspection](#) Program. This program will include (a) preventive measures to mitigate corrosion and (b) inspections to manage the effects of corrosion on the pressure-retaining capability of buried carbon steel components. Buried components will be inspected when excavated during maintenance. An inspection will be performed within ten years of entering the period of extended operation and within ten years after entering the period of extended operation, unless an opportunistic inspection occurred within these ten-year periods. This program will manage the aging effect of loss of material such that the intended function of the components will not be affected.

3.3.2.2.9 Loss of Material due to General, Pitting, Crevice, Microbiologically-Influenced Corrosion and Fouling

1. Loss of material due to general, pitting, crevice, and MIC for carbon steel piping and components exposed to fuel oil is an aging effect requiring management at

IPEC and these components are managed by the [Diesel Fuel Monitoring Program](#). This program includes sampling and monitoring of fuel oil quality to ensure they remain within the limits specified by the ASTM standards. Maintaining parameters within limits ensures that significant loss of material will not occur. The [One-Time Inspection Program](#) will use visual inspections or non-destructive examinations of representative samples to confirm that the Diesel Fuel Monitoring Program has been effective at managing aging effects for components that credit this program.

2. Loss of material due to general, pitting, crevice and MIC for carbon steel heat exchanger components exposed to lubricating oil is an aging effect requiring management in the auxiliary systems at IPEC and is managed by the [Oil Analysis Program](#). This program includes periodic sampling and analysis of lubricating oil to maintain contaminants within acceptable limits, thereby preserving an environment that is not conducive to corrosion. The [One-Time Inspection Program](#) will use visual inspections or non-destructive examinations of representative samples to confirm that the Oil Analysis Program has been effective at managing aging effects for components that credit this program.

3.3.2.2.10 Loss of Material due to Pitting and Crevice Corrosion

1. Loss of material due to pitting and crevice corrosion could occur in steel piping with elastomer lining that is exposed to treated borated water if the lining is degraded. For the auxiliary systems at IPEC, there are no elastomer-lined steel components within the scope of license renewal. The NUREG-1801 line for stainless steel clad steel components exposed to treated water applies to BWRs and was not used. This item does not apply to IPEC.
2. In the auxiliary systems at IPEC there are no aluminum components exposed to treated water. Aging management results for loss of material in stainless steel auxiliary system components exposed to treated water are compared to NUREG-1801 lines in the ESF and S&PC systems which consider the PWR water chemistry programs, since the corresponding line for auxiliary systems considers only BWR chemistry. Consistent with the NUREG-1801 lines in the ESF and S&PC systems, loss of material due to pitting and crevice corrosion for stainless steel components exposed to treated water is managed by the [Water Chemistry Control – Primary and Secondary Program](#). The effectiveness of the program will be confirmed by the [One-Time Inspection Program](#) through an inspection of a representative sample of components crediting this program including susceptible locations such as areas of stagnant flow.
3. Loss of material due to pitting and crevice corrosion for copper alloy components exposed to condensation (external) in the HVAC and other systems is managed by the [External Surfaces Monitoring](#) and [Periodic Surveillance and Preventive](#)

Maintenance (PSPM) Programs. The **External Surfaces Monitoring** Program includes a periodic visual inspection. The PSPM Program includes visual inspections and other NDE techniques to manage loss of material of the components. These inspections will manage the aging effect of loss of material such that the intended function of the components will not be affected.

4. Loss of material due to pitting and crevice corrosion for copper alloy components exposed to lubricating oil in auxiliary systems at IPEC is managed by the **Oil Analysis** Program, which includes periodic sampling and analysis of lubricating oil to maintain contaminants within acceptable limits, thereby preserving an environment that is not conducive to corrosion. The **One-Time Inspection** Program will use visual inspections or non-destructive examinations of representative samples to confirm that the Oil Analysis Program has been effective at managing aging effects for components that credit this program.
5. Loss of material due to pitting and crevice corrosion for aluminum piping and components and stainless steel components exposed to condensation is an aging effect requiring management for HVAC and other systems at IPEC. The **Bolting Integrity**, **External Surfaces Monitoring**, **Periodic Surveillance and Preventive Maintenance**, and **One-Time Inspection** Programs will manage loss of material in aluminum or stainless steel components exposed internally or externally to condensation. These programs include a periodic visual inspection and the PSPM program includes the use of other NDE techniques as appropriate to manage loss of material of the components.
6. Loss of material due to pitting and crevice corrosion could occur for copper alloy fire protection system piping, piping components, and piping elements exposed to internal condensation. At IPEC there are no copper alloy components exposed to condensation in the fire protection systems. However, this item can be applied to copper alloy components exposed to internal condensation in other systems. The **Periodic Surveillance and Preventive Maintenance** Program will manage loss of material in copper alloy components exposed internally to condensation, through the use of periodic visual inspections or other NDE techniques.
7. Loss of material due to pitting and crevice corrosion could occur for stainless steel piping, piping components, and piping elements exposed to soil. At IPEC there are no stainless steel piping components exposed to soil in the auxiliary systems. This item is not applicable to IPEC.
8. Loss of material due to pitting and crevice corrosion could occur for stainless steel piping, piping components, and piping elements of the BWR Standby Liquid Control System that are exposed to sodium pentaborate solution. IP2 and IP3 are PWRs and do not have SLC systems. This item is not applicable to IPEC.

3.3.2.2.11 Loss of Material due to Pitting, Crevice and Galvanic Corrosion

This item pertains to loss of material in copper alloy auxiliary system components exposed to a BWR treated water environment. This item is not applicable to IPEC.

3.3.2.2.12 Loss of Material due to Pitting, Crevice, and Microbiologically-Influenced Corrosion

1. Loss of material due to pitting, crevice, and MIC in stainless steel and copper alloy piping and components exposed to fuel oil is an aging effect requiring management at IPEC and most of these components are managed by the [Diesel Fuel Monitoring](#) Program. There are no aluminum components exposed to fuel oil in the auxiliary systems. The Diesel Fuel Monitoring Program includes sampling and monitoring of fuel oil quality to ensure it remains within the limits specified by the ASTM standards. Maintaining parameters within limits ensures that significant loss of material will not occur. The [One-Time Inspection](#) Program will use visual inspections or non-destructive examinations of representative samples to confirm that the Diesel Fuel Monitoring Program has been effective at managing aging effects for components that credit this program. The [Periodic Surveillance and Preventive Maintenance](#) Program will manage loss of material for the stainless steel components of the emergency fuel oil trailer transfer tank using periodic visual inspections.
2. Loss of material due to pitting, crevice, and MIC in most stainless steel piping and components exposed to lubricating oil is managed by the [Oil Analysis](#) Program which includes periodic sampling and analysis of lubricating oil to maintain contaminants within acceptable limits, thereby preserving an environment that is not conducive to corrosion. The [One-Time Inspection](#) Program will use visual inspections or non-destructive examinations of representative samples to confirm that the Oil Analysis Program has been effective at managing aging effects for components that credit this program.

Stainless steel piping components of the reactor coolant pump oil collection system are not continuously exposed to lubricating oil environment that is maintained by the [Oil Analysis](#) Program. Therefore this program is not credited for managing loss of material on these components. Instead these components are managed by the [One-Time Inspection](#) Program. This program will use visual or volumetric NDE techniques to inspect a representative sample of the internal surfaces to assure there is no significant corrosion.

3.3.2.2.13 Loss of Material due to Wear

Loss of material due to wear could occur in the elastomer seals and components exposed to air – indoor uncontrolled (internal or external). Wear is the removal of surface layers due to relative motion between two surfaces. At IPEC, in the auxiliary

systems, this specific aging effect for elastomers is not applicable since the expansion joints are fixed at both ends and do not contact any other components such that wear could occur. Where the aging effects of change in material properties and cracking are identified for elastomer components, they are managed by the [Periodic Surveillance and Preventive Maintenance](#) Program. This item is not applicable to IPEC auxiliary systems.

3.3.2.2.14 Cracking due to Underclad Cracking

Cracking due to underclad cracking could occur for PWR steel charging pump casings with stainless steel cladding exposed to treated borated water. The IPEC charging pump casings are not clad but are made of stainless steel. This item is not applicable to IPEC.

3.3.2.2.15 Quality Assurance for Aging Management of Nonsafety-Related Components

See Appendix B [Section B.0.3](#) for discussion of IPEC quality assurance procedures and administrative controls for aging management programs.

3.3.2.3 **Time-Limited Aging Analysis**

The only time-limited aging analysis identified for auxiliary systems components is metal fatigue. This is evaluated in [Section 4.3](#).

3.3.3 **Conclusion**

The auxiliary system components that are subject to aging management review have been identified in accordance with the requirements of 10 CFR 54.21. The aging management programs selected to manage the effects of aging on auxiliary system components are identified in [Section 3.3.2.1](#) and in the following tables. A description of these aging management programs is provided in [Appendix B](#), along with the demonstration that the identified aging effects will be managed for the period of extended operation.

Therefore, based on the demonstrations provided in Appendix B, the effects of aging associated with the auxiliary system components will be managed such that there is reasonable assurance that the intended functions will be maintained consistent with the current licensing basis during the period of extended operation.

**Table 3.3.1
Summary of Aging Management Programs for the Auxiliary System
Evaluated in Chapter VII of NUREG-1801**

Table 3.3.1: Auxiliary Systems, NUREG-1801 Vol. 1					
Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.3.1-1	Steel cranes - structural girders exposed to air – indoor uncontrolled (external)	Cumulative fatigue damage	TLAA to be evaluated for structural girders of cranes. See the Standard Review Plan, Section 4.7 for generic guidance for meeting the requirements of 10 CFR 54.21(c)(1).	Yes, TLAA	This line item was not used. Steel cranes are evaluated as structural components in Section 3.5 .
3.3.1-2	Steel and stainless steel piping, piping components, piping elements, and heat exchanger components exposed to air – indoor uncontrolled, treated borated water or treated water	Cumulative fatigue damage	TLAA, evaluated in accordance with 10 CFR 54.21(c)	Yes, TLAA	Fatigue is a TLAA. See Section 3.3.2.2.1 .

Table 3.3.1: Auxiliary Systems, NUREG-1801 Vol. 1					
Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.3.1-3	Stainless steel heat exchanger tubes exposed to treated water	Reduction of heat transfer due to fouling	Water Chemistry and One-Time Inspection	Yes, detection of aging effects is to be evaluated	Not applicable. There are no stainless steel heat exchanger tubes exposed to treated water in the auxiliary systems with an intended function of heat transfer. See Section 3.3.2.2.2 .
3.3.1-4	BWR only				
3.3.1-5	Stainless steel and stainless clad steel heat exchanger components exposed to treated water >60°C (> 140°F)	Cracking due to stress corrosion cracking	Plant specific	Yes, plant specific	Not applicable. The only stainless steel heat exchanger components exposed to treated water in the auxiliary systems are in the steam generator secondary side sample coolers, which are addressed in other lines. See Section 3.3.2.2.3 item 2.
3.3.1-6	Stainless steel diesel engine exhaust piping, piping components, and piping elements exposed to diesel exhaust	Cracking due to stress corrosion cracking	Plant specific	Yes, plant specific	Not applicable. The stainless steel diesel exhaust components are not subject to significant moisture accumulation, which precludes cracking due to stress corrosion cracking. See Section 3.3.2.2.3 item 3.

Table 3.3.1: Auxiliary Systems, NUREG-1801 Vol. 1					
Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.3.1-7	Stainless steel nonregenerative heat exchanger components exposed to treated borated water >60°C (> 140°F)	Cracking due to stress corrosion cracking and cyclic loading	Water Chemistry and a plant-specific verification program. An acceptable verification program is to include temperature and radioactivity monitoring of the shell side water, and eddy current testing of tubes.	Yes, plant specific	The Water Chemistry Control – Primary and Secondary Program manages cracking of stainless steel non-regenerative heat exchanger components exposed to treated borated water. The program is augmented by the One-Time Inspection Program which will verify the absence of cracking. Absence of cracking of the tubes and tubesheet is also verified by additional monitoring. See Section 3.3.2.2.4 item 1.

Table 3.3.1: Auxiliary Systems, NUREG-1801 Vol. 1					
Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.3.1-8	Stainless steel regenerative heat exchanger components exposed to treated borated water >60°C (>140°F)	Cracking due to stress corrosion cracking and cyclic loading	Water Chemistry and a plant-specific verification program. The AMP is to be augmented by verifying the absence of cracking due to stress corrosion cracking and cyclic loading. A plant specific aging management program is to be evaluated.	Yes, plant specific	Stainless steel components of some heat exchangers to which this NUREG-1801 line item applies, including the regenerative heat exchanger, are in the reactor coolant systems in series 3.1.2-x tables. The Water Chemistry Control – Primary and Secondary and Inservice Inspection Programs manage cracking of stainless steel heat exchanger bonnets and shells exposed to treated borated water. The Water Chemistry Control – Primary and Secondary Program manages cracking of stainless steel heat exchanger tubes. The program is augmented by the One-Time Inspection Program which will verify the absence of cracking in similar material environment combinations since the regenerative heat exchanger cannot be inspected internally. (continued)

Table 3.3.1: Auxiliary Systems, NUREG-1801 Vol. 1					
Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
					Within the auxiliary systems, this NUREG-1801 line is compared to the stainless steel components of the reactor coolant pump seal return heat exchanger. The Water Chemistry Control – Primary and Secondary Program manages cracking of these components. The program is augmented by the One-Time Inspection Program to verify the absence of cracking. See Section 3.3.2.2.4 item 2.
3.3.1-9	Stainless steel high-pressure pump casing in PWR chemical and volume control system	Cracking due to stress corrosion cracking and cyclic loading	Water Chemistry and a plant-specific verification program. The AMP is to be augmented by verifying the absence of cracking due to stress corrosion cracking and cyclic loading. A plant specific aging management program is to be evaluated.	Yes, plant specific	Treated borated water in the chemical volume control system pumps is less than the 140°F threshold for stress corrosion cracking. Consequently, the Water Chemistry Control – Primary and Secondary Program is not specifically credited to manage cracking due to stress corrosion cracking of the CVCS charging pumps. Cracking of the charging pumps due to cyclic loading is managed by the Periodic Surveillance and Preventive Maintenance Program. See Section 3.3.2.2.4 item 3.

Table 3.3.1: Auxiliary Systems, NUREG-1801 Vol. 1					
Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.3.1-10	High-strength steel closure bolting exposed to air with steam or water leakage.	Cracking due to stress corrosion cracking, cyclic loading	Bolting Integrity The AMP is to be augmented by appropriate inspection to detect cracking if the bolts are not otherwise replaced during maintenance.	Yes, if the bolts are not replaced during maintenance	Not applicable. High strength steel bolting is not used in the auxiliary systems.
3.3.1-11	Elastomer seals and components exposed to air – indoor uncontrolled (internal/external)	Hardening and loss of strength due to elastomer degradation	Plant specific	Yes, plant specific	For elastomer components susceptible to a change in material properties, the aging effect will be managed by the Periodic Surveillance and Preventive Maintenance Program . See Section 3.3.2.2.5 item 1.
3.3.1-12	Elastomer lining exposed to treated water or treated borated water	Hardening and loss of strength due to elastomer degradation	A plant-specific aging management program that determines and assesses the qualified life of the linings in the environment is to be evaluated.	Yes, plant specific	No credit is taken for elastomer linings at IPEC to prevent aging effects. The change in material properties of elastomer components exposed to treated water will be managed by the Periodic Surveillance and Preventive Maintenance Program . See Section 3.3.2.2.5 item 2.

Table 3.3.1: Auxiliary Systems, NUREG-1801 Vol. 1					
Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.3.1-13	Boral, boron steel spent fuel storage racks neutron-absorbing sheets exposed to treated water or treated borated water	Reduction of neutron-absorbing capacity and loss of material due to general corrosion	Plant specific	Yes, plant specific	The Boral Surveillance Program, supplemented by the Water Chemistry Control – Primary and Secondary Program, manages the degradation of Boral including the reduction of neutron-absorbing capacity. See Section 3.3.2.2.6 .
3.3.1-14	Steel piping, piping component, and piping elements exposed to lubricating oil	Loss of material due to general, pitting, and crevice corrosion	Lubricating Oil Analysis and One-Time Inspection	Yes, detection of aging effects is to be evaluated	The Oil Analysis Program manages loss of material in steel components. The One-Time Inspection Program will be used to confirm the effectiveness of the Oil Analysis Program. See Section 3.3.2.2.7 item 1.
3.3.1-15	Steel reactor coolant pump oil collection system piping, tubing, and valve bodies exposed to lubricating oil	Loss of material due to general, pitting, and crevice corrosion	Lubricating Oil Analysis and One-Time Inspection	Yes, detection of aging effects is to be evaluated	Loss of material for the reactor coolant pump oil collection components exposed to lubricating oil will be managed by the One-Time Inspection Program. See Section 3.3.2.2.7 item 1.
3.3.1-16	Steel reactor coolant pump oil collection system tank exposed to lubricating oil	Loss of material due to general, pitting, and crevice corrosion	Lubricating Oil Analysis and One-Time Inspection to evaluate the thickness of the lower portion of the tank	Yes, detection of aging effects is to be evaluated	Loss of material for the reactor coolant pump oil collection components exposed to lubricating oil will be managed by the One-Time Inspection Program. See Section 3.3.2.2.7 item 1.

Table 3.3.1: Auxiliary Systems, NUREG-1801 Vol. 1					
Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.3.1-17	BWR only				
3.3.1-18	Stainless steel and steel diesel engine exhaust piping, piping components, and piping elements exposed to diesel exhaust	Loss of material/ general (steel only), pitting and crevice corrosion	Plant specific	Yes, plant specific	The Periodic Surveillance and Preventive Maintenance , One-Time Inspection and Fire Protection Programs will manage loss of material in steel and stainless steel components exposed to diesel exhaust. See Section 3.3.2.2.7 item 3.
3.3.1-19	Steel (with or without coating or wrapping) piping, piping components, and piping elements exposed to soil	Loss of material due to general, pitting, crevice, and microbiologically influenced corrosion	Buried Piping and Tanks Surveillance or Buried Piping and Tanks Inspection	No Yes, detection of aging effects and operating experience are to be further evaluated	Consistent with NUREG-1801. The loss of material of buried steel components will be managed by the Buried Piping and Tanks Inspection Program. See Section 3.3.2.2.8 .

Table 3.3.1: Auxiliary Systems, NUREG-1801 Vol. 1					
Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.3.1-20	Steel piping, piping components, piping elements, and tanks exposed to fuel oil	Loss of material due to general, pitting, crevice, and microbiologically influenced corrosion, and fouling	Fuel Oil Chemistry and One-Time Inspection	Yes, detection of aging effects is to be evaluated	The Diesel Fuel Monitoring Program manages loss of material in steel components. The One-Time Inspection Program will be used to confirm the effectiveness of the Diesel Fuel Monitoring Program. See Section 3.3.2.2.9 item 1.
3.3.1-21	Steel heat exchanger components exposed to lubricating oil	Loss of material due to general, pitting, crevice, and microbiologically influenced corrosion, and fouling	Lubricating Oil Analysis and One-Time Inspection	Yes, detection of aging effects is to be evaluated	The Oil Analysis Program manages loss of material in steel heat exchanger components. The One-Time Inspection Program will be used to confirm the effectiveness of the Oil Analysis Program. See Section 3.3.2.2.9 item 2.
3.3.1-22	Steel with elastomer lining or stainless steel cladding piping, piping components, and piping elements exposed to treated water and treated borated water	Loss of material due to pitting and crevice corrosion (only for steel after lining/cladding degradation)	Water Chemistry and One-Time Inspection	Yes, detection of aging effects is to be evaluated	Not applicable. There are no elastomer lined steel components exposed to treated borated water with a license renewal intended function. The NUREG-1801 line for stainless steel clad steel components exposed to treated water applies to BWRs and was not used. See Section 3.3.2.2.10 item 1.
3.3.1-23	BWR only				

Table 3.3.1: Auxiliary Systems, NUREG-1801 Vol. 1					
Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.3.1-24	Stainless steel and aluminum piping, piping components, and piping elements exposed to treated water	Loss of material due to pitting and crevice corrosion	Water Chemistry and One-Time Inspection	Yes, detection of aging effects is to be evaluated	This line was not used. Results for loss of material in stainless steel auxiliary system components exposed to treated water are compared to NUREG-1801 lines in the ESF and S&PC systems which consider the PWR water chemistry programs. There are no aluminum piping components exposed to treated water in the auxiliary systems. See Section 3.3.2.2.10 item 2.
3.3.1-25	Copper alloy HVAC piping, piping components, piping elements exposed to condensation (external)	Loss of material due to pitting and crevice corrosion	A plant-specific aging management program is to be evaluated.	Yes, plant specific	The External Surfaces Monitoring , and Periodic Surveillance and Preventive Maintenance Programs will manage loss of material in copper alloy components. See Section 3.3.2.2.10 item 3.
3.3.1-26	Copper alloy piping, piping components, and piping elements exposed to lubricating oil	Loss of material due to pitting and crevice corrosion	Lubricating Oil Analysis and One-Time Inspection	Yes, detection of aging effects is to be evaluated	The Oil Analysis Program manages loss of material in copper alloy components. The One-Time Inspection Program will be used to confirm the effectiveness of the Oil Analysis Program. See Section 3.3.2.2.10 item 4.

Table 3.3.1: Auxiliary Systems, NUREG-1801 Vol. 1					
Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.3.1-27	Stainless steel HVAC ducting and aluminum HVAC piping, piping components and piping elements exposed to condensation	Loss of material due to pitting and crevice corrosion	A plant-specific aging management program is to be evaluated.	Yes, plant specific	The Bolting Integrity, External Surfaces Monitoring, Periodic Surveillance and Preventive Maintenance and One-Time Inspection Programs manage loss of material in aluminum and stainless steel components. See Section 3.3.2.2.10 item 5.
3.3.1-28	Copper alloy fire protection piping, piping components, and piping elements exposed to condensation (internal)	Loss of material due to pitting and crevice corrosion	A plant-specific aging management program is to be evaluated.	Yes, plant specific	The Periodic Surveillance and Preventive Maintenance Program will manage loss of material in copper alloy components exposed to condensation. See Section 3.3.2.2.10 item 6.
3.3.1-29	Stainless steel piping, piping components, and piping elements exposed to soil	Loss of material due to pitting and crevice corrosion	A plant-specific aging management program is to be evaluated.	Yes, plant specific	Not applicable. There are no buried stainless steel components in the auxiliary systems. See Section 3.3.2.2.10 item 7.
3.3.1-30	BWR only				
3.3.1-31	BWR only				

Table 3.3.1: Auxiliary Systems, NUREG-1801 Vol. 1					
Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.3.1-32	Stainless steel, aluminum and copper alloy piping, piping components, and piping elements exposed to fuel oil	Loss of material due to pitting, crevice, and microbiologically influenced corrosion	Fuel Oil Chemistry and One-Time Inspection	Yes, detection of aging effects is to be evaluated	Consistent with NUREG-1801 for most components. The Diesel Fuel Monitoring Program manages loss of material in stainless steel and copper alloy components. The One-Time Inspection Program will be used to confirm the effectiveness of the Diesel Fuel Monitoring Program. The Periodic Surveillance and Preventive Maintenance Program will manage loss of material for the stainless steel components of the emergency fuel oil trailer transfer tank using periodic visual inspections. There are no aluminum components exposed to fuel oil in the auxiliary systems. See Section 3.3.2.2.12 item 1.
3.3.1-33	Stainless steel piping, piping components, and piping elements exposed to lubricating oil	Loss of material due to pitting, crevice, and microbiologically influenced corrosion	Lubricating Oil Analysis and One-Time Inspection	Yes, detection of aging effects is to be evaluated	The Oil Analysis Program manages loss of material in stainless steel components. The One-Time Inspection Program will be used to confirm the effectiveness of the Oil Analysis Program. The One-Time Inspection Program will also confirm the absence of significant aging effects for stainless steel reactor coolant pump oil collection components exposed to lubricating oil. See Section 3.3.2.2.12 item 2.

Table 3.3.1: Auxiliary Systems, NUREG-1801 Vol. 1					
Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.3.1-34	Elastomer seals and components exposed to air – indoor uncontrolled (internal or external)	Loss of material due to Wear	Plant specific	Yes, plant specific	Not applicable. There are no elastomer components with loss of material due to wear as an applicable aging effect. See Section 3.3.2.2.13 .
3.3.1-35	Steel with stainless steel cladding pump casing exposed to treated borated water	Loss of material/ cladding breach	A plant-specific aging management program is to be evaluated. Reference NRC Information Notice 94-63, "Boric Acid Corrosion of Charging Pump Casings Caused by Cladding Cracks."	Yes, verify plant specific program addresses cladding breach	Not applicable. The charging pump casings are not clad but are made of stainless steel. See Section 3.3.2.2.14 .
3.3.1-36	BWR only				
3.3.1-37	BWR only				
3.3.1-38	BWR only				
3.3.1-39	BWR only				
3.3.1-40	Steel tanks in diesel fuel oil system exposed to air - outdoor (external)	Loss of material due to general, pitting, and crevice corrosion	Aboveground Steel Tanks	No	Consistent with NUREG-1801. The Aboveground Steel Tanks Program will manage loss of material in steel tanks exposed to outdoor air.

Table 3.3.1: Auxiliary Systems, NUREG-1801 Vol. 1

Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.3.1-41	High-strength steel closure bolting exposed to air with steam or water leakage	Cracking due to cyclic loading, stress corrosion cracking	Bolting Integrity	No	Not applicable. High-strength steel closure bolting is not used in the auxiliary systems.
3.3.1-42	Steel closure bolting exposed to air with steam or water leakage	Loss of material due to general corrosion	Bolting Integrity	No	This line item was not used. Loss of material of steel closure bolting was addressed by other items including 3.3.1-43 , 3.3.1-44 and 3.3.1-55 .
3.3.1-43	Steel bolting and closure bolting exposed to air – indoor uncontrolled (external) or air – outdoor (External)	Loss of material due to general, pitting, and crevice corrosion	Bolting Integrity	No	Consistent with NUREG-1801. The Bolting Integrity Program manages the loss of material for steel bolting exposed to indoor uncontrolled or outdoor air.
3.3.1-44	Steel compressed air system closure bolting exposed to condensation	Loss of material due to general, pitting, and crevice corrosion	Bolting Integrity	No	Consistent with NUREG-1801. The Bolting Integrity Program manages the loss of material for steel bolting exposed to condensation.

Table 3.3.1: Auxiliary Systems, NUREG-1801 Vol. 1					
Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.3.1-45	Steel closure bolting exposed to air – indoor uncontrolled (external)	Loss of preload due to thermal effects, gasket creep, and self-loosening	Bolting Integrity	No	<p>Loss of preload is a design-driven effect and not an aging effect requiring management. Bolting at IPEC is standard grade B7 low alloy steel, or similar material, except in rare specialized applications such as where stainless steel bolting is utilized. Loss of preload due to stress relaxation (creep) would only be a concern in very high temperature applications (> 700°F), as stated in the ASME Code, Section II, Part D, Table 4. No bolting operates at > 700°F. Therefore, loss of preload due to stress relaxation (creep) is not an applicable aging effect for auxiliary systems. Other issues such as gasket creep and loosening that may result in pressure boundary joint leakage are improper design or maintenance issues. Improper bolting application (design) and maintenance issues are current plant operational concerns and not related to aging effects or mechanisms that require management during the period of extended operation.</p> <p>(continued)</p>

Table 3.3.1: Auxiliary Systems, NUREG-1801 Vol. 1					
Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
					As described in the Bolting Integrity Program, IPEC has taken actions to address NUREG-1339, <i>Resolution to Generic Safety Issue 29: Bolting Degradation or Failure in Nuclear Power Plants</i> . These actions include implementation of good bolting practices in accordance with EPRI NP-5067, <i>Good Bolting Practices</i> . Proper joint preparation and make-up in accordance with industry standards is expected to preclude loss of preload. This has been confirmed by operating experience at IPEC.

Table 3.3.1: Auxiliary Systems, NUREG-1801 Vol. 1					
Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.3.1-46	Stainless steel and stainless clad steel piping, piping components, piping elements, and heat exchanger components exposed to closed cycle cooling water >60°C (>140°F)	Cracking due to stress corrosion cracking	Closed-Cycle Cooling Water System	No	Consistent with NUREG-1801 for components of closed cooling systems including the component cooling water and emergency diesel generator cooling systems. The Water Chemistry Control – Closed Cooling Water Program manages cracking for stainless steel components. For other systems with controlled water chemistry, including the house service boiler systems, the Water Chemistry Control – Auxiliary Systems Program manages cracking for stainless steel components. The One-Time Inspection Program for Water Chemistry will use inspections or non-destructive examinations of representative samples to verify that the Water Chemistry Control – Auxiliary Systems and Water Chemistry Control – Closed Cooling Water Programs have been effective at managing aging effects.

Table 3.3.1: Auxiliary Systems, NUREG-1801 Vol. 1					
Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.3.1-47	Steel piping, piping components, piping elements, tanks, and heat exchanger components exposed to closed cycle cooling water	Loss of material due to general, pitting, and crevice corrosion	Closed-Cycle Cooling Water System	No	Consistent with NUREG-1801 for components of closed cooling systems such as the component cooling water and emergency diesel generator cooling systems. The Water Chemistry Control – Closed Cooling Water Program manages loss of material for steel components. For other systems with controlled water chemistry, such as the security diesel, or the house service boiler and the components of interfacing systems, the Water Chemistry Control – Auxiliary Systems Program manages loss of material for steel components. The One-Time Inspection Program for Water Chemistry will use visual inspections or non-destructive examinations of representative samples to verify that the Water Chemistry Control – Auxiliary Systems and Water Chemistry Control – Closed Cooling Water Programs have been effective at managing aging effects.

Table 3.3.1: Auxiliary Systems, NUREG-1801 Vol. 1					
Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.3.1-48	Steel piping, piping components, piping elements, tanks, and heat exchanger components exposed to closed cycle cooling water	Loss of material due to general, pitting, crevice, and galvanic corrosion	Closed-Cycle Cooling Water System	No	Consistent with NUREG-1801. The Water Chemistry Control – Closed Cooling Water Program manages loss of material for steel heat exchanger components.
3.3.1-49	Stainless steel; steel with stainless steel cladding heat exchanger components exposed to closed cycle cooling water	Loss of material due to microbiologically influenced corrosion	Closed-Cycle Cooling Water System	No	Consistent with NUREG-1801. The Water Chemistry Control – Closed Cooling Water Program manages loss of material for stainless steel heat exchanger components.

Table 3.3.1: Auxiliary Systems, NUREG-1801 Vol. 1					
Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.3.1-50	Stainless steel piping, piping components, and piping elements exposed to closed cycle cooling water	Loss of material due to pitting and crevice corrosion	Closed-Cycle Cooling Water System	No	Consistent with NUREG-1801 for components of closed cooling systems such as the component cooling water and emergency diesel generator cooling systems. The Water Chemistry Control – Closed Cooling Water Program manages loss of material for stainless steel components. For other systems with controlled water chemistry, such as the house service boiler systems, the Water Chemistry Control – Auxiliary Systems Program manages loss of material for stainless steel components. The One-Time Inspection Program for Water Chemistry will use visual inspections or non-destructive examinations of representative samples to verify that the Water Chemistry Control – Auxiliary Systems and Water Chemistry Control – Closed Cooling Water Programs have been effective at managing aging effects.

Table 3.3.1: Auxiliary Systems, NUREG-1801 Vol. 1					
Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.3.1-51	Copper alloy piping, piping components, piping elements, and heat exchanger components exposed to closed cycle cooling water	Loss of material due to pitting, crevice, and galvanic corrosion	Closed-Cycle Cooling Water System	No	Consistent with NUREG-1801 for components of closed cooling systems such as the component cooling water and emergency diesel generator cooling systems. The Water Chemistry Control – Closed Cooling Water Program manages loss of material for copper alloy components. For other systems with controlled water chemistry, such as the security diesel, or the house service boiler and the components of interfacing systems, the Water Chemistry Control – Auxiliary Systems Program manages loss of material for copper alloy components. The One-Time Inspection Program for Water Chemistry will use visual inspections or non-destructive examinations of representative samples to verify that the Water Chemistry Control – Auxiliary Systems and Water Chemistry Control – Closed Cooling Water Programs have been effective at managing aging effects.

Table 3.3.1: Auxiliary Systems, NUREG-1801 Vol. 1					
Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.3.1-52	Steel, stainless steel, and copper alloy heat exchanger tubes exposed to closed cycle cooling water	Reduction of heat transfer due to fouling	Closed-Cycle Cooling Water System	No	Consistent with NUREG-1801 for heat exchangers cooled by closed cooling systems such as the component cooling water and emergency diesel generator cooling systems. The Water Chemistry Control – Closed Cooling Water Program manages reduction of heat transfer for stainless steel and copper alloy heat exchanger tubes exposed to closed cycle cooling water. For heat exchangers cooled by other systems with controlled water chemistry, such as the security diesel systems, the Water Chemistry Control – Auxiliary Systems Program manages the reduction of heat transfer for copper alloy heat exchanger tubes. The One-Time Inspection Program for Water Chemistry will use visual inspections or non-destructive examinations of representative samples to verify that the Water Chemistry Control – Auxiliary Systems and Water Chemistry Control – Closed Cooling Water Programs have been effective at managing aging effects. The auxiliary systems have no steel heat exchanger tubes exposed to closed cycle cooling water with a heat transfer intended function.

Table 3.3.1: Auxiliary Systems, NUREG-1801 Vol. 1					
Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.3.1-53	Steel compressed air system piping, piping components, and piping elements exposed to condensation (internal)	Loss of material due to general and pitting corrosion	Compressed Air Monitoring	No	The Periodic Surveillance and Preventive Maintenance Program manages loss of material in steel station air system components exposed internally to condensation. The program will periodically use visual or other NDE techniques to inspect a representative sample of components.
3.3.1-54	Stainless steel compressed air system piping, piping components, and piping elements exposed to internal condensation	Loss of material due to pitting and crevice corrosion	Compressed Air Monitoring	No	The One-Time Inspection Program will confirm the absence of significant loss of material for stainless steel components exposed to internal condensation. Visual or other NDE techniques will be used to inspect a representative sample of the internal surfaces to confirm the absence of significant loss of material.
3.3.1-55	Steel ducting closure bolting exposed to air – indoor uncontrolled (external)	Loss of material due to general corrosion	External Surfaces Monitoring	No	Consistent with NUREG-1801. The External Surfaces Monitoring Program manages loss of material for steel closure bolting in the HVAC systems.

Table 3.3.1: Auxiliary Systems, NUREG-1801 Vol. 1					
Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.3.1-56	Steel HVAC ducting and components external surfaces exposed to air – indoor uncontrolled (external)	Loss of material due to general corrosion	External Surfaces Monitoring	No	Consistent with NUREG-1801 for most steel HVAC components. The External Surfaces Monitoring Program manages loss of material for external surfaces of steel components. The Periodic Surveillance and Preventive Maintenance Program manages loss of material for external surfaces of portable steel ventilation equipment by periodic inspections.
3.3.1-57	Steel piping and components external surfaces exposed to air – indoor uncontrolled (External)	Loss of material due to general corrosion	External Surfaces Monitoring	No	Consistent with NUREG-1801. The External Surfaces Monitoring Program manages loss of material for external surfaces of steel components.

Table 3.3.1: Auxiliary Systems, NUREG-1801 Vol. 1					
Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.3.1-58	Steel external surfaces exposed to air – indoor uncontrolled (external), air - outdoor (external), and condensation (external)	Loss of material due to general corrosion	External Surfaces Monitoring	No	Consistent with NUREG-1801 for most steel components. The External Surfaces Monitoring Program manages loss of material for external surfaces. For some steel components of the fire protection – CO2, halon, and RCP oil collection systems, the Fire Protection Program manages loss of material using periodic visual inspections. The Periodic Surveillance and Preventive Maintenance Program periodically inspects external steel surfaces of components inside the fan cooler units of the containment cooling and filtration system to manage loss of material.
3.3.1-59	Steel heat exchanger components exposed to air – indoor uncontrolled (external) or air - outdoor (external)	Loss of material due to general, pitting, and crevice corrosion	External Surfaces Monitoring	No	Consistent with NUREG-1801 for most steel heat exchanger components. The External Surfaces Monitoring Program manages loss of material for external surfaces of steel heat exchanger components. The Periodic Surveillance and Preventive Maintenance Program periodically inspects external steel surfaces of heat exchanger components inside the fan cooler units of the containment cooling and filtration system to manage loss of material.

Table 3.3.1: Auxiliary Systems, NUREG-1801 Vol. 1					
Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.3.1-60	Steel piping, piping components, and piping elements exposed to air - outdoor (external)	Loss of material due to general, pitting, and crevice corrosion	External Surfaces Monitoring	No	Consistent with NUREG-1801. The External Surfaces Monitoring Program manages loss of material for external surfaces of steel components.
3.3.1-61	Elastomer fire barrier penetration seals exposed to air – outdoor or air - indoor uncontrolled	Increased hardness, shrinkage and loss of strength due to weathering	Fire Protection	No	This line item was not used in the auxiliary systems tables. Fire barrier seals are evaluated as structural components in Section 3.5. Cracking and the change in material properties of elastomer seals are managed by the Fire Protection Program.
3.3.1-62	Aluminum piping, piping components, and piping elements exposed to raw water	Loss of material due to pitting and crevice corrosion	Fire Protection	No	The One-Time Inspection Program will use visual or other NDE techniques to confirm the absence of significant loss of material for aluminum components of the lube oil system exposed to raw water. The Service Water Integrity Program uses periodic inspections to manage loss of material for aluminum components of the service water system exposed to raw water. The components to which this NUREG-1801 line item applies are included in scope under criterion 10 CFR 54.4(a)(2) and are listed in series 3.3.2-19-xx tables.

Table 3.3.1: Auxiliary Systems, NUREG-1801 Vol. 1					
Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.3.1-63	Steel fire rated doors exposed to air – outdoor or air - indoor uncontrolled	Loss of material due to Wear	Fire Protection	No	This line item was not used in the auxiliary systems tables. Steel fire doors are evaluated as structural components in Section 3.5 . The loss of material for fire doors is managed by the Fire Protection Program .
3.3.1-64	Steel piping, piping components, and piping elements exposed to fuel oil	Loss of material due to general, pitting, and crevice corrosion	Fire Protection and Fuel Oil Chemistry	No	Consistent with NUREG-1801. The Fire Protection and Diesel Fuel Monitoring Programs manage loss of material of steel diesel fire pump fuel supply piping.
3.3.1-65	Reinforced concrete structural fire barriers – walls, ceilings and floors exposed to air – indoor uncontrolled	Concrete cracking and spalling due to aggressive chemical attack, and reaction with aggregates	Fire Protection and Structures Monitoring Program	No	This line item was not used. Reinforced concrete structural fire barriers are evaluated as structural components in Section 3.5 .
3.3.1-66	Reinforced concrete structural fire barriers – walls, ceilings and floors exposed to air – outdoor	Concrete cracking and spalling due to freeze thaw, aggressive chemical attack, and reaction with aggregates	Fire Protection and Structures Monitoring Program	No	This line item was not used. Reinforced concrete structural fire barriers are evaluated as structural components in Section 3.5 .

Table 3.3.1: Auxiliary Systems, NUREG-1801 Vol. 1					
Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.3.1-67	Reinforced concrete structural fire barriers – walls, ceilings and floors exposed to air – outdoor or air - indoor uncontrolled	Loss of material due to corrosion of embedded steel	Fire Protection and Structures Monitoring Program	No	This line item was not used. Reinforced concrete structural fire barriers are evaluated as structural components in Section 3.5 .
3.3.1-68	Steel piping, piping components, and piping elements exposed to raw water	Loss of material due to general, pitting, crevice, and microbiologically influenced corrosion, and fouling	Fire Water System	No	Consistent with NUREG-1801. The loss of material in steel components exposed to raw or untreated water is managed by the Fire Water System Program.
3.3.1-69	Stainless steel piping, piping components, and piping elements exposed to raw water	Loss of material due to pitting and crevice corrosion, and fouling	Fire Water System	No	Consistent with NUREG-1801. The loss of material in stainless steel components exposed to raw water is managed by the Fire Water System Program.
3.3.1-70	Copper alloy piping, piping components, and piping elements exposed to raw water	Loss of material due to pitting, crevice, and microbiologically influenced corrosion, and fouling	Fire Water System	No	Consistent with NUREG-1801. The loss of material in copper alloy components exposed to raw water is managed by the Fire Water System Program.

Table 3.3.1: Auxiliary Systems, NUREG-1801 Vol. 1					
Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.3.1-71	Steel piping, piping components, and piping elements exposed to moist air or condensation (Internal)	Loss of material due to general, pitting, and crevice corrosion	Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components	No	The Periodic Surveillance and Preventive Maintenance Program uses periodic visual inspections to manage loss of material for internal surfaces of steel diesel generator air start system components of the emergency and Appendix R diesel generators.
3.3.1-72	Steel HVAC ducting and components internal surfaces exposed to condensation (Internal)	Loss of material due to general, pitting, crevice, and (for drip pans and drain lines) microbiologically influenced corrosion	Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components	No	The Periodic Surveillance and Preventive Maintenance Program uses periodic visual inspections to manage loss of material for internal surfaces of steel ducting and components exposed to condensation. The External Surfaces Monitoring Program manages loss of material for external carbon steel components of the service water system exposed to condensation, by visual inspection of external surfaces. For systems where internal carbon steel surfaces are exposed to the same environment as external surfaces, external surface conditions will be representative of internal surfaces. Thus, loss of material on internal carbon steel surfaces of the service water system exposed to condensation, is also managed by the External Surfaces Monitoring Program.

Table 3.3.1: Auxiliary Systems, NUREG-1801 Vol. 1					
Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.3.1-73	Steel crane structural girders in load handling system exposed to air-indoor uncontrolled (external)	Loss of material due to general corrosion	Inspection of Overhead Heavy Load and Light Load (Related to Refueling) Handling Systems	No	This line item was not used in the auxiliary systems tables. Steel crane structural girders are evaluated as structural components in Section 3.5 . Loss of material for steel crane structural components is managed by the Periodic Surveillance and Preventive Maintenance and Structures Monitoring Programs using periodic visual or other NDE techniques.
3.3.1-74	Steel cranes - rails exposed to air – indoor uncontrolled (external)	Loss of material due to Wear	Inspection of Overhead Heavy Load and Light Load (Related to Refueling) Handling Systems	No	This line item was not used. Steel crane rails are evaluated as structural components in Section 3.5 .
3.3.1-75	Elastomer seals and components exposed to raw water	Hardening and loss of strength due to elastomer degradation; loss of material due to erosion	Open-Cycle Cooling Water System	No	The Periodic Surveillance and Preventive Maintenance Program uses periodic visual inspections of internal and external surfaces of components to manage cracking and change of material properties in elastomeric components exposed to raw water. The components to which this NUREG-1801 line item applies are included in scope under criterion 10 CFR 54.4(a)(2) and are listed in series 3.3.2-19-xx tables in systems other than service water.

Table 3.3.1: Auxiliary Systems, NUREG-1801 Vol. 1					
Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.3.1-76	Steel piping, piping components, and piping elements (without lining/coating or with degraded lining/coating) exposed to raw water	Loss of material due to general, pitting, crevice, and microbiologically influenced corrosion, fouling, and lining/coating degradation	Open-Cycle Cooling Water System	No	Consistent with NUREG-1801 for components exposed to raw water in the service water system. The Service Water Integrity Program manages loss of material in steel components. For other steel components exposed to raw water, the Periodic Surveillance and Preventive Maintenance Program uses periodic visual inspections of internal surfaces of components to manage loss of material.
3.3.1-77	Steel heat exchanger components exposed to raw water	Loss of material due to general, pitting, crevice, galvanic, and microbiologically influenced corrosion, and fouling	Open-Cycle Cooling Water System	No	Consistent with NUREG-1801. The Service Water Integrity Program manages loss of material for steel heat exchanger components.
3.3.1-78	Stainless steel, nickel alloy, and copper alloy piping, piping components, and piping elements exposed to raw water	Loss of material due to pitting and crevice corrosion	Open-Cycle Cooling Water System	No	Consistent with NUREG-1801 for nickel alloy components exposed to raw water from the service water system. The Service Water Integrity Program manages loss of material in nickel alloy components. Stainless steel and copper alloy components exposed to raw water are addressed in other items including 3.3.1-79 and 3.3.1-81 .

Table 3.3.1: Auxiliary Systems, NUREG-1801 Vol. 1					
Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.3.1-79	Stainless steel piping, piping components, and piping elements exposed to raw water	Loss of material due to pitting and crevice corrosion, and fouling	Open-Cycle Cooling Water System	No	Consistent with NUREG-1801 for most components exposed to raw water from the service water system. The Service Water Integrity Program manages loss of material in stainless steel components. For other stainless steel components exposed to raw water, the One-Time Inspection Program will use visual or other NDE techniques to confirm the absence of significant loss of material.
3.3.1-80	Stainless steel and copper alloy piping, piping components, and piping elements exposed to raw water	Loss of material due to pitting, crevice, and microbiologically influenced corrosion	Open-Cycle Cooling Water System	No	Consistent with NUREG-1801 for copper alloy components of the EDG system. The Service Water Integrity Program manages loss of material in copper alloy components exposed to raw water. There are no stainless steel components exposed to raw water in the EDG system.

Table 3.3.1: Auxiliary Systems, NUREG-1801 Vol. 1					
Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.3.1-81	Copper alloy piping, piping components, and piping elements, exposed to raw water	Loss of material due to pitting, crevice, and microbiologically influenced corrosion, and fouling	Open-Cycle Cooling Water System	No	Consistent with NUREG-1801 for components exposed to raw water in the service water system. The Service Water Integrity Program manages loss of material in copper alloy components. For copper alloy components exposed to raw water in other systems, the Periodic Surveillance and Preventive Maintenance Program uses periodic visual inspections of internal surfaces of components to manage loss of material.
3.3.1-82	Copper alloy heat exchanger components exposed to raw water	Loss of material due to pitting, crevice, galvanic, and microbiologically influenced corrosion, and fouling	Open-Cycle Cooling Water System	No	Consistent with NUREG-1801. The Service Water Integrity Program manages loss of material in copper alloy heat exchanger components.
3.3.1-83	Stainless steel and copper alloy heat exchanger tubes exposed to raw water	Reduction of heat transfer due to fouling	Open-Cycle Cooling Water System	No	Consistent with NUREG-1801. The Service Water Integrity Program manages reduction of heat transfer in stainless steel and copper alloy heat exchanger tubes exposed to raw water.

Table 3.3.1: Auxiliary Systems, NUREG-1801 Vol. 1					
Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.3.1-84	Copper alloy >15% Zn piping, piping components, piping elements, and heat exchanger components exposed to raw water, treated water, or closed cycle cooling water	Loss of material due to selective leaching	Selective Leaching of Materials	No	Consistent with NUREG-1801. The Selective Leaching Program will manage loss of material in copper alloy > 15% zinc components exposed to all types of water.
3.3.1-85	Gray cast iron piping, piping components, and piping elements exposed to soil, raw water, treated water, or closed-cycle cooling water	Loss of material due to selective leaching	Selective Leaching of Materials	No	Consistent with NUREG-1801. The Selective Leaching Program will manage loss of material in gray cast iron components exposed to soil and all types of water.
3.3.1-86	Structural steel (new fuel storage rack assembly) exposed to air – indoor uncontrolled (external)	Loss of material due to general, pitting, and crevice corrosion	Structures Monitoring Program	No	This line item was not used. Structural steel of the new fuel storage rack assembly is evaluated as a structural component in Section 3.5 .

Table 3.3.1: Auxiliary Systems, NUREG-1801 Vol. 1					
Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.3.1-87	Boraflex spent fuel storage racks neutron-absorbing sheets exposed to treated borated water	Reduction of neutron absorbing capacity due to boraflex degradation	Boraflex Monitoring	No	The Boraflex Monitoring Program, supplemented by the Water Chemistry Control – Primary and Secondary Program, manages the degradation of Boraflex.
3.3.1-88	Aluminum and copper alloy >15% Zn piping, piping components, and piping elements exposed to air with borated water leakage	Loss of material due to Boric acid corrosion	Boric Acid Corrosion	No	Consistent with NUREG-1801. The Boric Acid Corrosion Prevention Program manages loss of material in copper alloy > 15% Zn components exposed to air with borated water leakage. There are no aluminum components exposed to air with borated water leakage in the auxiliary systems.
3.3.1-89	Steel bolting and external surfaces exposed to air with borated water leakage	Loss of material due to Boric acid corrosion	Boric Acid Corrosion	No	Consistent with NUREG-1801. The Boric Acid Corrosion Prevention Program manages loss of material in steel components exposed to air with borated water leakage.

Table 3.3.1: Auxiliary Systems, NUREG-1801 Vol. 1					
Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.3.1-90	Stainless steel and steel with stainless steel cladding piping, piping components, piping elements, tanks, and fuel storage racks exposed to treated borated water >60°C (>140°F)	Cracking due to stress corrosion cracking	Water Chemistry	No	Consistent with NUREG-1801. The Water Chemistry Control – Primary and Secondary Program manages cracking in stainless steel components exposed to treated borated water > 140°F.
3.3.1-91	Stainless steel and steel with stainless steel cladding piping, piping components, and piping elements exposed to treated borated water	Loss of material due to pitting and crevice corrosion	Water Chemistry	No	Consistent with NUREG-1801. The Water Chemistry Control – Primary and Secondary Program manages loss of material in stainless steel components exposed to treated borated water.
3.3.1-92	Galvanized steel piping, piping components, and piping elements exposed to air – indoor uncontrolled	None	None	NA - No AEM or AMP	Not applicable. Galvanized steel surfaces are evaluated as steel for the auxiliary systems.

Table 3.3.1: Auxiliary Systems, NUREG-1801 Vol. 1					
Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.3.1-93	Glass piping elements exposed to air, air – indoor uncontrolled (external), fuel oil, lubricating oil, raw water, treated water, and treated borated water	None	None	NA - No AEM or AMP	Consistent with NUREG-1801.
3.3.1-94	Stainless steel and nickel alloy piping, piping components, and piping elements exposed to air – indoor uncontrolled (external)	None	None	NA - No AEM or AMP	Consistent with NUREG-1801 for stainless steel components. There are no nickel alloy components exposed to air – indoor uncontrolled in the auxiliary systems.
3.3.1-95	Steel and aluminum piping, piping components, and piping elements exposed to air – indoor controlled (external)	None	None	NA - No AEM or AMP	Not applicable. There are no steel or aluminum components exposed to indoor air controlled in the auxiliary systems. All indoor air environments are conservatively considered to be uncontrolled.

Table 3.3.1: Auxiliary Systems, NUREG-1801 Vol. 1					
Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.3.1-96	Steel and stainless steel piping, piping components, and piping elements in concrete	None	None	NA - No AEM or AMP	Consistent with NUREG-1801
3.3.1-97	Steel, stainless steel, aluminum, and copper alloy piping, piping components, and piping elements exposed to gas	None	None	NA - No AEM or AMP	Consistent with NUREG-1801.
3.3.1-98	Steel, stainless steel, and copper alloy piping, piping components, and piping elements exposed to dried air	None	None	NA - No AEM or AMP	Consistent with NUREG-1801
3.3.1-99	Stainless steel and copper alloy <15% Zn piping, piping components, and piping elements exposed to air with borated water leakage	None	None	NA - No AEM or AMP	Consistent with NUREG-1801 for stainless steel components. There are no copper alloy components exposed to air with borated water leakage in the auxiliary systems.

Notes for Tables 3.3.2-1-IP2 through 3.3.2-19-62-IP3

Generic Notes

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

Plant-Specific Notes

- 301. The air – treated environment is the equivalent of dried air and for the purposes of evaluating aluminum components, the air – treated environment is drier than the NUREG-1801 defined air – indoor uncontrolled.
- 302. This treated water environment is similar or equivalent to closed cycle cooling water or secondary coolant. For the purposes of evaluating the aging effect of cracking due to fatigue, this environment may be compared to treated borated water.
- 303. This treated water environment includes water that has been treated but is not maintained by a chemistry control program, such as water from the city water system. It is conservatively considered raw water for this comparison.

304. This treated water environment is controlled by the [Water Chemistry Control – Auxiliary Systems](#) Program. Although this environment does not directly compare with any NUREG-1801 defined environment, it approximates the NUREG-1801 defined closed cycle cooling water environment.
305. This treated water environment includes water that has been treated but is not maintained by a chemistry control program, such as water from the city water system. There is no environment in NUREG-1801 that will support a useful comparison for this line.
306. Changes of material properties and cracking in elastomers are results of exposure to ultra-violet light or elevated temperatures (> 95°F). The interior surfaces of these components are not exposed to ultra-violet light and are part of the air intake that is not exposed to elevated temperatures.
307. This treated water environment is the jacket cooling water for the ARDG or the EDG.
308. This treated water environment is closed cycle cooling water.
309. This steam or treated water environment is controlled by the [Water Chemistry Control – Auxiliary Systems](#) Program. Although this environment does not directly compare with any NUREG-1801 defined environment, it is considered the equivalent of steam or treated water for the evaluation of cracking due to fatigue.
310. These components remain at high temperature during normal operation which precludes moisture condensation and the resulting corrosion.
311. This treated water environment is controlled by the [Water Chemistry Control – Auxiliary Systems](#) Program. Although this environment does not directly compare with any NUREG-1801 defined environment, it is considered the equivalent of treated water for the evaluation of loss of material due to flow accelerated corrosion.
312. This environment is steam produced from treated water that is controlled by the [Water Chemistry Control – Auxiliary Systems](#) Program. Although this environment does not directly compare with any NUREG-1801 defined environment, the steam is considered equivalent to the NUREG-1801 steam environment for this comparison.
313. The tank is steel with a corrosion-resistant coating on the wetted surfaces (AMERCOAT 55 System).
314. The [One-Time Inspection](#) Program will verify effectiveness of the [Water Chemistry Control – Primary and Secondary](#) Program.
315. This line includes the nonregenerative heat exchanger.
316. The [One-Time Inspection](#) Program will verify effectiveness of the [Oil Analysis](#) and [Diesel Fuel Monitoring](#) Programs.

- 317. This component is part of the emergency fuel oil trailer transfer tank.
- 318. This treated water environment includes chemical solutions used to control primary and secondary system water chemistry or as an additive for containment spray.

**Table 3.3.2-1-IP2
Spent Fuel Pit Cooling System
Summary of Aging Management Review**

Table 3.3.2-1-IP2: Spent Fuel Pit Cooling System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Neutron absorber (boraflex)	Neutron absorption	Boron carbide_/ elastomer	Treated borated water	Loss of material	Water Chemistry Control – Primary and Secondary	VII.A2-4 (A-86)	3.3.1-87	E
Neutron absorber (boraflex)	Neutron absorption	Boron carbide_/ elastomer	Treated borated water	Change in material properties	Boraflex Monitoring	VII.A2-4 (A-86)	3.3.1-87	B
Neutron absorber (boraflex)	Neutron absorption	Boron carbide_/ elastomer	Treated borated water	Cracking	Water Chemistry Control – Primary and Secondary	VII.A2-4 (A-86)	3.3.1-87	E

**Table 3.3.2-1-IP3
 Spent Fuel Pit Cooling System
 Summary of Aging Management Review**

Table 3.3.2-1-IP3: Spent Fuel Pit Cooling System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Neutron absorber (boral)	Neutron absorption	Boron carbide / aluminum	Treated borated water	Loss of material	Boral Surveillance Water Chemistry Control – Primary and Secondary	VII.A2-5 (A-88)	3.3.1-13	E

**Table 3.3.2-2-IP2
Service Water System
Summary of Aging Management Review**

Table 3.3.2-2-IP2: Service Water System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Condensation (ext)	Loss of material	Bolting Integrity	VII.D-1 (A-103)	3.3.1-44	C
Bolting	Pressure boundary	Stainless steel	Condensation (ext)	Loss of material	Bolting Integrity	VII.F1-1 (A-09)	3.3.1-27	E
Bolting	Pressure boundary	Stainless steel	Raw water (ext)	Loss of material	Service Water Integrity	VII.C1-15 (A-54)	3.3.1-79	C
Expansion joint	Pressure boundary	Stainless steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.F1-1 (A-09)	3.3.1-27	E
Expansion joint	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-15 (A-54)	3.3.1-79	A
Flow element	Pressure boundary	Carbon steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.I-11 (A-81)	3.3.1-58	A
Flow element	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-19 (A-38)	3.3.1-76	A
Heat exchanger (bonnet)	Pressure boundary	Carbon steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.I-11 (A-81)	3.3.1-58	A

Table 3.3.2-2-IP2: Service Water System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Heat exchanger (bonnet)	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-5 (A-64)	3.3.1-77	A
Heat exchanger (shell)	Pressure boundary	Titanium	Condensation (ext)	None	None	--	--	F
Heat exchanger (shell)	Pressure boundary	Titanium	Raw water (int)	Cracking	Service Water Integrity	--	--	F
Heat exchanger (shell)	Pressure boundary	Titanium	Raw water (int)	Loss of material	Service Water Integrity	--	--	F
Heat exchanger (tubes)	Heat transfer	Titanium	Raw water (ext)	Fouling	Service Water Integrity	--	--	F
Heat exchanger (tubes)	Heat transfer	Titanium	Raw water (int)	Fouling	Service Water Integrity	--	--	F
Heat exchanger (tubes)	Pressure boundary	Copper alloy > 15% Zn (inhibited)	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-3 (A-65)	3.3.1-82	A
Heat exchanger (tubes)	Pressure boundary	Copper alloy > 15% Zn (inhibited)	Treated water (ext)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.E1-2 (AP-34)	3.3.1-51	D

Table 3.3.2-2-IP2: Service Water System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Heat exchanger (tubes)	Pressure boundary	Copper alloy > 15% Zn (inhibited)	Treated water (ext)	Loss of material – wear	Service Water Integrity	--	--	H
Heat exchanger (tubes)	Pressure boundary	Titanium	Raw water (ext)	Loss of material	Service Water Integrity	--	--	F
Heat exchanger (tubes)	Pressure boundary	Titanium	Raw water (int)	Cracking	Service Water Integrity	--	--	F
Heat exchanger (tubes)	Pressure boundary	Titanium	Raw water (int)	Loss of material	Service Water Integrity	--	--	F
Heat exchanger (tubes)	Pressure boundary	Titanium	Treated water (ext)	Loss of material	Water Chemistry Control – Primary and Secondary	--	--	F
Indicator	Pressure boundary	Stainless steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.F1-1 (A-09)	3.3.1-27	E
Indicator	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-15 (A-54)	3.3.1-79	A
Mixer	Pressure boundary	Stainless steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.F1-1 (A-09)	3.3.1-27	E
Mixer	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-15 (A-54)	3.3.1-79	A

Table 3.3.2-2-IP2: Service Water System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Orifice	Pressure boundary Flow control	Stainless steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.F1-1 (A-09)	3.3.1-27	E
Orifice	Pressure boundary Flow control	Stainless steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-15 (A-54)	3.3.1-79	A
Piping	Pressure boundary	Carbon steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.I-11 (A-81)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Condensation (int)	Loss of material	External Surfaces Monitoring	VII.F1-3 (A-08)	3.3.1-72	E
Piping	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-19 (A-38)	3.3.1-76	A
Piping	Pressure boundary	Carbon steel	Soil (ext)	Loss of material	Buried Piping and Tanks Inspection	VII.C1-18 (A-01)	3.3.1-19	A
Piping	Pressure boundary	Copper alloy	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.F1-16 (A-46)	3.3.1-25	E
Piping	Pressure boundary	Copper alloy	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-9 (A-44)	3.3.1-81	A
Piping	Pressure boundary	Stainless steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.F1-1 (A-09)	3.3.1-27	E

Table 3.3.2-2-IP2: Service Water System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-15 (A-54)	3.3.1-79	A
Pump casing	Pressure boundary	Stainless steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.F1-1 (A-09)	3.3.1-27	E
Pump casing	Pressure boundary	Stainless steel	Raw water (ext)	Loss of material	Service Water Integrity	VII.C1-15 (A-54)	3.3.1-79	A
Pump casing	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-15 (A-54)	3.3.1-79	A
Strainer	Filtration	Stainless steel	Raw water (ext)	Loss of material	Service Water Integrity	VII.C1-15 (A-54)	3.3.1-79	A
Strainer	Filtration	Stainless steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-15 (A-54)	3.3.1-79	A
Strainer housing	Pressure boundary	Carbon steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.I-11 (A-81)	3.3.1-58	A
Strainer housing	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-19 (A-38)	3.3.1-76	A
Thermowell	Pressure boundary	Carbon steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.I-11 (A-81)	3.3.1-58	A
Thermowell	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-19 (A-38)	3.3.1-76	A

Table 3.3.2-2-IP2: Service Water System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Thermowell	Pressure boundary	Stainless steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.F1-1 (A-09)	3.3.1-27	E
Thermowell	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-15 (A-54)	3.3.1-79	A
Tubing	Pressure boundary	Carbon steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.I-11 (A-81)	3.3.1-58	A
Tubing	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-19 (A-38)	3.3.1-76	A
Tubing	Pressure boundary	Stainless steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.F1-1 (A-09)	3.3.1-27	E
Tubing	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-15 (A-54)	3.3.1-79	A
Valve body	Pressure boundary	Carbon steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.I-11 (A-81)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-19 (A-38)	3.3.1-76	A
Valve body	Pressure boundary	Copper alloy	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.F1-16 (A-46)	3.3.1-25	E
Valve body	Pressure boundary	Copper alloy	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-9 (A-44)	3.3.1-81	A

Table 3.3.2-2-IP2: Service Water System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Copper alloy > 15% Zn	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.F1-16 (A-46)	3.3.1-25	E
Valve body	Pressure boundary	Copper alloy > 15% Zn	Raw water (int)	Loss of material	Selective Leaching	VII.C1-10 (A-47)	3.3.1-84	A
Valve body	Pressure boundary	Copper alloy > 15% Zn	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-9 (A-44)	3.3.1-81	A
Valve body	Pressure boundary	Gray cast iron	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.I-11 (A-81)	3.3.1-58	A
Valve body	Pressure boundary	Gray cast iron	Raw water (int)	Loss of material	Selective Leaching	VII.C1-11 (A-51)	3.3.1-85	A
Valve body	Pressure boundary	Gray cast iron	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-19 (A-38)	3.3.1-76	A
Valve body	Pressure boundary	Nickel alloy	Condensation (ext)	Loss of material	External Surfaces Monitoring	--	--	G
Valve body	Pressure boundary	Nickel alloy	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-13 (AP-53)	3.3.1-78	A
Valve body	Pressure boundary	Stainless steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.F1-1 (A-09)	3.3.1-27	E
Valve body	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-15 (A-54)	3.3.1-79	A

Table 3.3.2-2-IP2: Service Water System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary Flow control	Carbon steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.I-11 (A-81)	3.3.1-58	A
Valve body	Pressure boundary Flow control	Carbon steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-19 (A-38)	3.3.1-76	A
Valve body	Pressure boundary Flow control	Nickel alloy	Condensation (ext)	Loss of material	External Surfaces Monitoring	--	--	G
Valve body	Pressure boundary Flow control	Nickel alloy	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-13 (AP-53)	3.3.1-78	A
Valve body	Pressure boundary Flow control	Stainless steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.F1-1 (A-09)	3.3.1-27	E
Valve body	Pressure boundary Flow control	Stainless steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-15 (A-54)	3.3.1-79	A

**Table 3.3.2-2-IP3
Service Water System
Summary of Aging Management Review**

Table 3.3.2-2-IP3: Service Water System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Condensation (ext)	Loss of material	Bolting Integrity	VII.D-1 (A-103)	3.3.1-44	C
Bolting	Pressure boundary	Stainless steel	Condensation (ext)	Loss of material	Bolting Integrity	VII.F1-1 (A-09)	3.3.1-27	E
Bolting	Pressure boundary	Stainless steel	Raw water (ext)	Loss of material	Service Water Integrity	VII.C1-15 (A-54)	3.3.1-79	C
Expansion joint	Pressure boundary	Stainless steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.F1-1 (A-09)	3.3.1-27	E
Expansion joint	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-15 (A-54)	3.3.1-79	A
Flow element	Pressure boundary	Carbon steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.I-11 (A-81)	3.3.1-58	A
Flow element	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-19 (A-38)	3.3.1-76	A
Heat exchanger (bonnet)	Pressure boundary	Carbon steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.I-11 (A-81)	3.3.1-58	A

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Heat exchanger (bonnet)	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-5 (A-64)	3.3.1-77	A
Heat exchanger (shell)	Pressure boundary	Stainless steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.F1-1 (A-09)	3.3.1-27	E
Heat exchanger (shell)	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-15 (A-54)	3.3.1-79	A
Heat exchanger (tubes)	Heat transfer	Stainless steel	Raw water (ext)	Fouling	Service Water Integrity	VII.C1-7 (AP-61)	3.3.1-83	A
Heat exchanger (tubes)	Heat transfer	Stainless steel	Raw water (int)	Fouling	Service Water Integrity	VII.C1-7 (AP-61)	3.3.1-83	A
Heat exchanger (tubes)	Pressure boundary	Copper alloy > 15% Zn (inhibited)	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-3 (A-65)	3.3.1-82	A
Heat exchanger (tubes)	Pressure boundary	Copper alloy > 15% Zn (inhibited)	Treated water (ext)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.E1-2 (AP-34)	3.3.1-51	D
Heat exchanger (tubes)	Pressure boundary	Copper alloy > 15% Zn (inhibited)	Treated water (ext)	Loss of material – wear	Heat Exchanger Monitoring	--	--	H

Table 3.3.2-2-IP3: Service Water System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Indicator	Pressure boundary	Glass	Condensation (ext)	None	None	--	--	G
Indicator	Pressure boundary	Glass	Raw water (int)	None	None	VII.J-11 (AP-50)	3.3.1-93	A
Indicator	Pressure boundary	Stainless steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.F1-1 (A-09)	3.3.1-27	E
Indicator	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-15 (A-54)	3.3.1-79	A
Mixer	Pressure boundary	Stainless steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.F1-1 (A-09)	3.3.1-27	E
Mixer	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-15 (A-54)	3.3.1-79	A
Orifice	Pressure boundary Flow control	Stainless steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.F1-1 (A-09)	3.3.1-27	E
Orifice	Pressure boundary Flow control	Stainless steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-15 (A-54)	3.3.1-79	A
Piping	Pressure boundary	Carbon steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.I-11 (A-81)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Condensation (int)	Loss of material	External Surfaces Monitoring	VII.F1-3 (A-08)	3.3.1-72	E

Table 3.3.2-2-IP3: Service Water System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-19 (A-38)	3.3.1-76	A
Piping	Pressure boundary	Carbon steel	Soil (ext)	Loss of material	Buried Piping and Tanks Inspection	VII.C1-18 (A-01)	3.3.1-19	A
Piping	Pressure boundary	Copper alloy	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.F1-16 (A-46)	3.3.1-25	E
Piping	Pressure boundary	Copper alloy	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-9 (A-44)	3.3.1-81	A
Piping	Pressure boundary	Stainless steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.F1-1 (A-09)	3.3.1-27	E
Piping	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-15 (A-54)	3.3.1-79	A
Pump casing	Pressure boundary	Carbon steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.I-11 (A-81)	3.3.1-58	A
Pump casing	Pressure boundary	Carbon steel	Raw water (ext)	Loss of material	Service Water Integrity	VII.C1-19 (A-38)	3.3.1-76	A
Pump casing	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-19 (A-38)	3.3.1-76	A
Pump casing	Pressure boundary	Stainless steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.F1-1 (A-09)	3.3.1-27	E

Table 3.3.2-2-IP3: Service Water System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Pump casing	Pressure boundary	Stainless steel	Raw water (ext)	Loss of material	Service Water Integrity	VII.C1-15 (A-54)	3.3.1-79	A
Pump casing	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-15 (A-54)	3.3.1-79	A
Strainer	Filtration	Stainless steel	Raw water (ext)	Loss of material	Service Water Integrity	VII.C1-15 (A-54)	3.3.1-79	A
Strainer	Filtration	Stainless steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-15 (A-54)	3.3.1-79	A
Strainer housing	Pressure boundary	Carbon steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.I-11 (A-81)	3.3.1-58	A
Strainer housing	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-19 (A-38)	3.3.1-76	A
Thermowell	Pressure boundary	Carbon steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.I-11 (A-81)	3.3.1-58	A
Thermowell	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-19 (A-38)	3.3.1-76	A
Thermowell	Pressure boundary	Stainless steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.F1-1 (A-09)	3.3.1-27	E
Thermowell	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-15 (A-54)	3.3.1-79	A

Table 3.3.2-2-IP3: Service Water System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Tubing	Pressure boundary	Carbon steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.I-11 (A-81)	3.3.1-58	A
Tubing	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-19 (A-38)	3.3.1-76	A
Tubing	Pressure boundary	Stainless steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.F1-1 (A-09)	3.3.1-27	E
Tubing	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-15 (A-54)	3.3.1-79	A
Valve body	Pressure boundary	Carbon steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.I-11 (A-81)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-19 (A-38)	3.3.1-76	A
Valve body	Pressure boundary	Copper alloy	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.F1-16 (A-46)	3.3.1-25	E
Valve body	Pressure boundary	Copper alloy	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-9 (A-44)	3.3.1-81	A
Valve body	Pressure boundary	Copper alloy > 15% Zn	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.F1-16 (A-46)	3.3.1-25	E
Valve body	Pressure boundary	Copper alloy > 15% Zn	Raw water (int)	Loss of material	Selective Leaching	VII.C1-10 (A-47)	3.3.1-84	A

Table 3.3.2-2-IP3: Service Water System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Copper alloy > 15% Zn	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-9 (A-44)	3.3.1-81	A
Valve body	Pressure boundary	Nickel alloy	Condensation (ext)	Loss of material	External Surfaces Monitoring	--	--	G
Valve body	Pressure boundary	Nickel alloy	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-13 (AP-53)	3.3.1-78	A
Valve body	Pressure boundary	Stainless steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.F1-1 (A-09)	3.3.1-27	E
Valve body	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-15 (A-54)	3.3.1-79	A
Valve body	Pressure boundary Flow control	Carbon steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.I-11 (A-81)	3.3.1-58	A
Valve body	Pressure boundary Flow control	Carbon steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-19 (A-38)	3.3.1-76	A
Valve body	Pressure boundary Flow control	Copper alloy > 15% Zn	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.F1-16 (A-46)	3.3.1-25	E
Valve body	Pressure boundary Flow control	Copper alloy > 15% Zn	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-9 (A-44)	3.3.1-81	A

Table 3.3.2-2-IP3: Service Water System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary Flow control	Nickel alloy	Condensation (ext)	Loss of material	External Surfaces Monitoring	--	--	G
Valve body	Pressure boundary Flow control	Nickel alloy	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-13 (AP-53)	3.3.1-78	A
Valve body	Pressure boundary Flow control	Stainless steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.F1-1 (A-09)	3.3.1-27	E
Valve body	Pressure boundary Flow control	Stainless steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-15 (A-54)	3.3.1-79	A

**Table 3.3.2-3-IP2
Component Cooling Water
Summary of Aging Management Review**

Table 3.3.2-3-IP2: Component Cooling Water								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Boric Acid Corrosion Prevention	VII.I-2 (A-102)	3.3.1-89	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Flex hose	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Flex hose	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-10 (A-52)	3.3.1-50	B
Heat exchanger (bonnet)	Pressure boundary	Carbon steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.I-11 (A-81)	3.3.1-58	A
Heat exchanger (bonnet)	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-5 (A-64)	3.3.1-77	C

Table 3.3.2-3-IP2: Component Cooling Water								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Heat exchanger (bonnet)	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-1 (A-63)	3.3.1-48	B
Heat exchanger (shell)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Boric Acid Corrosion Prevention	VII.I-10 (A-79)	3.3.1-89	A
Heat exchanger (shell)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F1-10 (AP-41)	3.3.1-59	C
Heat exchanger (shell)	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-1 (A-63)	3.3.1-48	B
Heat exchanger (shell)	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Heat exchanger (shell)	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.E3-1 (A-67)	3.3.1-49	D
Heat exchanger (tubes)	Heat transfer	Copper alloy > 15% Zn (inhibited)	Raw water (int)	Fouling	Service Water Integrity	VII.C1-6 (A-72)	3.3.1-83	C
Heat exchanger (tubes)	Heat transfer	Copper alloy > 15% Zn (inhibited)	Treated water (ext)	Fouling	Water Chemistry Control – Closed Cooling Water	VII.C2-2 (AP-80)	3.3.1-52	B

Table 3.3.2-3-IP2: Component Cooling Water								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Heat exchanger (tubes)	Pressure boundary	Copper alloy > 15% Zn (inhibited)	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-3 (A-65)	3.3.1-82	C
Heat exchanger (tubes)	Pressure boundary	Copper alloy > 15% Zn (inhibited)	Treated water (ext)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.E1-2 (AP-34)	3.3.1-51	D
Heat exchanger (tubes)	Pressure boundary	Copper alloy > 15% Zn (inhibited)	Treated water (ext)	Loss of material – wear	Heat Exchanger Monitoring	--	--	H
Heat exchanger (tubes)	Pressure boundary	Copper alloy > 15% Zn (inhibited)	Treated water (ext)	Loss of material – wear	Service Water Integrity	--	--	H
Heat exchanger (tubes)	Pressure boundary	Copper alloy > 15% Zn (inhibited)	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.E1-2 (AP-34)	3.3.1-51	D
Heat exchanger (tubes)	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	C
Heat exchanger (tubes)	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VII.E1-20 (AP-82)	3.3.1-90	C
Heat exchanger (tubes)	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	C

Table 3.3.2-3-IP2: Component Cooling Water								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Heat exchanger (tubes)	Pressure boundary	Stainless steel	Treated water (ext)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.E3-1 (A-67)	3.3.1-49	D
Heat exchanger (tubes)	Pressure boundary	Stainless steel	Treated water (ext)	Loss of material – wear	Heat Exchanger Monitoring	--	--	H
Heat exchanger (tubes)	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.F-3 (S-39)	3.4.1-14	C, 314
Heat exchanger (tubes)	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.E-36 (S-22)	3.4.1-16	C, 314
Heat exchanger (tubesheet)	Pressure boundary	Aluminum bronze	Raw water (int)	Loss of material	Selective Leaching	--	--	F
Heat exchanger (tubesheet)	Pressure boundary	Aluminum bronze	Raw water (int)	Loss of material	Service Water Integrity	--	--	F
Heat exchanger (tubesheet)	Pressure boundary	Aluminum bronze	Treated water (ext)	Loss of material	Selective Leaching	--	--	F
Heat exchanger (tubesheet)	Pressure boundary	Aluminum bronze	Treated water (ext)	Loss of material	Water Chemistry Control – Closed Cooling Water	--	--	F

Table 3.3.2-3-IP2: Component Cooling Water								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Orifice	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Orifice	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-10 (A-52)	3.3.1-50	B
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-14 (A-25)	3.3.1-47	B
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Piping	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-10 (A-52)	3.3.1-50	B
Pump casing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Pump casing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-14 (A-25)	3.3.1-47	B
Pump casing	Pressure boundary	Gray cast iron	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A

Table 3.3.2-3-IP2: Component Cooling Water								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Pump casing	Pressure boundary	Gray cast iron	Treated water (int)	Loss of material	Selective Leaching	VII.C2-8 (A-50)	3.3.1-85	A
Pump casing	Pressure boundary	Gray cast iron	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-14 (A-25)	3.3.1-47	B
Strainer housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Strainer housing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-14 (A-25)	3.3.1-47	B
Tank	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Tank	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-14 (A-25)	3.3.1-47	B
Thermowell	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Thermowell	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-10 (A-52)	3.3.1-50	B
Tubing	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C

Table 3.3.2-3-IP2: Component Cooling Water								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Tubing	Pressure boundary	Copper alloy	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-4 (AP-12)	3.3.1-51	B
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Tubing	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-10 (A-52)	3.3.1-50	B
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Closed Cooling Water	VII.C2-11 (AP-60)	3.3.1-46	B
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-10 (A-52)	3.3.1-50	B
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-14 (A-25)	3.3.1-47	B
Valve body	Pressure boundary	CASS	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A

Table 3.3.2-3-IP2: Component Cooling Water								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	CASS	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-10 (A-52)	3.3.1-50	B
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-10 (A-52)	3.3.1-50	B

**Table 3.3.2-3-IP3
Component Cooling Water
Summary of Aging Management Review**

Table 3.3.2-3-IP3: Component Cooling Water								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Boric Acid Corrosion Prevention	VII.I-2 (A-102)	3.3.1-89	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Flex hose	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Flex hose	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-10 (A-52)	3.3.1-50	B
Heat exchanger (bonnet)	Pressure boundary	Carbon steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.I-11 (A-81)	3.3.1-58	A
Heat exchanger (bonnet)	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-5 (A-64)	3.3.1-77	C

Table 3.3.2-3-IP3: Component Cooling Water								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Heat exchanger (bonnet)	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-1 (A-63)	3.3.1-48	B
Heat exchanger (shell)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Boric Acid Corrosion Prevention	VII.I-10 (A-79)	3.3.1-89	A
Heat exchanger (shell)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F1-10 (AP-41)	3.3.1-59	C
Heat exchanger (shell)	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-1 (A-63)	3.3.1-48	B
Heat exchanger (shell)	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Heat exchanger (shell)	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.E3-1 (A-67)	3.3.1-49	D
Heat exchanger (tubes)	Heat transfer	Copper alloy > 15% Zn (inhibited)	Raw water (int)	Fouling	Service Water Integrity	VII.C1-6 (A-72)	3.3.1-83	C
Heat exchanger (tubes)	Heat transfer	Copper alloy > 15% Zn (inhibited)	Treated water (ext)	Fouling	Water Chemistry Control – Closed Cooling Water	VII.C2-2 (AP-80)	3.3.1-52	B

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Heat exchanger (tubes)	Pressure boundary	Copper alloy > 15% Zn (inhibited)	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-3 (A-65)	3.3.1-82	C
Heat exchanger (tubes)	Pressure boundary	Copper alloy > 15% Zn (inhibited)	Treated water (ext)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.E1-2 (AP-34)	3.3.1-51	D
Heat exchanger (tubes)	Pressure boundary	Copper alloy > 15% Zn (inhibited)	Treated water (ext)	Loss of material – wear	Heat Exchanger Monitoring	--	--	H
Heat exchanger (tubes)	Pressure boundary	Copper alloy > 15% Zn (inhibited)	Treated water (ext)	Loss of material – wear	Service Water Integrity	--	--	H
Heat exchanger (tubes)	Pressure boundary	Copper alloy > 15% Zn (inhibited)	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.E1-2 (AP-34)	3.3.1-51	D
Heat exchanger (tubes)	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	C
Heat exchanger (tubes)	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VII.E1-20 (AP-82)	3.3.1-90	C
Heat exchanger (tubes)	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	C

Table 3.3.2-3-IP3: Component Cooling Water								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Heat exchanger (tubes)	Pressure boundary	Stainless steel	Treated water (ext)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.E3-1 (A-67)	3.3.1-49	D
Heat exchanger (tubes)	Pressure boundary	Stainless steel	Treated water (ext)	Loss of material – wear	Heat Exchanger Monitoring	--	--	H
Heat exchanger (tubes)	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.F-3 (S-39)	3.4.1-14	C, 314
Heat exchanger (tubes)	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.E-36 (S-22)	3.4.1-16	C, 314
Orifice	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Orifice	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-10 (A-52)	3.3.1-50	B
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-14 (A-25)	3.3.1-47	B

Table 3.3.2-3-IP3: Component Cooling Water								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Piping	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-10 (A-52)	3.3.1-50	B
Pump casing	Pressure boundary	Gray cast iron	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Pump casing	Pressure boundary	Gray cast iron	Treated water (int)	Loss of material	Selective Leaching	VII.C2-8 (A-50)	3.3.1-85	A
Pump casing	Pressure boundary	Gray cast iron	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-14 (A-25)	3.3.1-47	B
Strainer housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Strainer housing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-14 (A-25)	3.3.1-47	B
Tank	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Tank	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-14 (A-25)	3.3.1-47	B

Table 3.3.2-3-IP3: Component Cooling Water								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Thermowell	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Thermowell	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-10 (A-52)	3.3.1-50	B
Tubing	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Tubing	Pressure boundary	Copper alloy	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-4 (AP-12)	3.3.1-51	B
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Tubing	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-10 (A-52)	3.3.1-50	B
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Closed Cooling Water	VII.C2-11 (AP-60)	3.3.1-46	B
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-10 (A-52)	3.3.1-50	B

Table 3.3.2-3-IP3: Component Cooling Water								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-14 (A-25)	3.3.1-47	B
Valve body	Pressure boundary	CASS	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	CASS	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-10 (A-52)	3.3.1-50	B
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-10 (A-52)	3.3.1-50	B

**Table 3.3.2-4-IP2
Compressed Air
Summary of Aging Management Review**

Table 3.3.2-4-IP2: Compressed Air								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Flex hose	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Flex hose	Pressure boundary	Stainless steel	Air – treated (int)	None	None	VII.J-18 (AP-20)	3.3.1-98	A, 301
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.D-3 (A-80)	3.3.1-57	A
Piping	Pressure boundary	Carbon steel	Air – treated (int)	None	None	VII.J-22 (AP-4)	3.3.1-98	A, 301
Piping	Pressure boundary	Carbon steel	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.D-2 (A-26)	3.3.1-53	E
Piping	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C

Table 3.3.2-4-IP2: Compressed Air								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Copper alloy	Air – treated (int)	None	None	VII.J-3 (AP-8)	3.3.1-98	A, 301
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Piping	Pressure boundary	Stainless steel	Air – treated (int)	None	None	VII.J-18 (AP-20)	3.3.1-98	A, 301
Tank	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Tank	Pressure boundary	Carbon steel	Air – treated (int)	None	None	VII.J-22 (AP-4)	3.3.1-98	A, 301
Tubing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.D-3 (A-80)	3.3.1-57	A
Tubing	Pressure boundary	Carbon steel	Air – treated (int)	None	None	VII.J-22 (AP-4)	3.3.1-98	A, 301
Tubing	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Tubing	Pressure boundary	Copper alloy	Air – treated (int)	None	None	VII.J-3 (AP-8)	3.3.1-98	A, 301
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A

Table 3.3.2-4-IP2: Compressed Air								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Tubing	Pressure boundary	Stainless steel	Air – treated (int)	None	None	VII.J-18 (AP-20)	3.3.1-98	A, 301
Valve body	Pressure boundary	Aluminum	Air – indoor (ext)	None	None	V.F-2 (EP-3)	3.2.1-50	C
Valve body	Pressure boundary	Aluminum	Air – treated (int)	None	None	V.F-2 (EP-3)	3.2.1-50	C, 301
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.D-3 (A-80)	3.3.1-57	A
Valve body	Pressure boundary	Carbon steel	Air – treated (int)	None	None	VII.J-22 (AP-4)	3.3.1-98	A, 301
Valve body	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Valve body	Pressure boundary	Copper alloy	Air – treated (int)	None	None	VII.J-3 (AP-8)	3.3.1-98	A, 301
Valve body	Pressure boundary	Copper alloy > 15% Zn	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Valve body	Pressure boundary	Copper alloy > 15% Zn	Air – treated (int)	None	None	VII.J-3 (AP-8)	3.3.1-98	A, 301
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A

Table 3.3.2-4-IP2: Compressed Air								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Stainless steel	Air – treated (int)	None	None	VII.J-18 (AP-20)	3.3.1-98	A, 301
Valve body	Pressure boundary	Stainless steel	Condensation (int)	Loss of material	One-Time Inspection	VII.D-4 (AP-81)	3.3.1-54	E

**Table 3.3.2-4-IP3
Compressed Air
Summary of Aging Management Review**

Table 3.3.2-4-IP3: Compressed Air								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Flex hose	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Flex hose	Pressure boundary	Stainless steel	Air – treated (int)	None	None	VII.J-18 (AP-20)	3.3.1-98	A, 301
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.D-3 (A-80)	3.3.1-57	A
Piping	Pressure boundary	Carbon steel	Air – treated (int)	None	None	VII.J-22 (AP-4)	3.3.1-98	A, 301
Piping	Pressure boundary	Carbon steel	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.D-2 (A-26)	3.3.1-53	E
Piping	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C

Table 3.3.2-4-IP3: Compressed Air								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Copper alloy	Air – treated (int)	None	None	VII.J-3 (AP-8)	3.3.1-98	A, 301
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Piping	Pressure boundary	Stainless steel	Air – treated (int)	None	None	VII.J-18 (AP-20)	3.3.1-98	A, 301
Tank	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Tank	Pressure boundary	Carbon steel	Air – treated (int)	None	None	VII.J-22 (AP-4)	3.3.1-98	A, 301
Tubing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.D-3 (A-80)	3.3.1-57	A
Tubing	Pressure boundary	Carbon steel	Air – treated (int)	None	None	VII.J-22 (AP-4)	3.3.1-98	A, 301
Tubing	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Tubing	Pressure boundary	Copper alloy	Air – treated (int)	None	None	VII.J-3 (AP-8)	3.3.1-98	A, 301
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A

Table 3.3.2-4-IP3: Compressed Air								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Tubing	Pressure boundary	Stainless steel	Air – treated (int)	None	None	VII.J-18 (AP-20)	3.3.1-98	A, 301
Valve body	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Valve body	Pressure boundary	Copper alloy	Air – treated (int)	None	None	VII.J-3 (AP-8)	3.3.1-98	A, 301
Valve body	Pressure boundary	Copper alloy > 15% Zn	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Valve body	Pressure boundary	Copper alloy > 15% Zn	Air – treated (int)	None	None	VII.J-3 (AP-8)	3.3.1-98	A, 301
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Air – treated (int)	None	None	VII.J-18 (AP-20)	3.3.1-98	A, 301
Valve body	Pressure boundary	Stainless steel	Condensation (int)	Loss of material	One-Time Inspection	VII.D-4 (AP-81)	3.3.1-54	E

**Table 3.3.2-5-IP2
Nitrogen System
Summary of Aging Management Review**

Table 3.3.2-5-IP2: Nitrogen System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Flex hose	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Flex hose	Pressure boundary	Stainless steel	Gas (int)	None	None	VII.J-19 (AP-22)	3.3.1-97	A
Flow element	Pressure boundary Flow control	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Flow element	Pressure boundary Flow control	Stainless steel	Gas (int)	None	None	VII.J-19 (AP-22)	3.3.1-97	A
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Gas (int)	None	None	VII.J-23 (AP-6)	3.3.1-97	A

Table 3.3.2-5-IP2: Nitrogen System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Piping	Pressure boundary	Copper alloy	Gas (int)	None	None	VII.J-4 (AP-9)	3.3.1-97	A
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Piping	Pressure boundary	Stainless steel	Gas (int)	None	None	VII.J-19 (AP-22)	3.3.1-97	A
Regulator	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Regulator	Pressure boundary	Carbon steel	Gas (int)	None	None	VII.J-23 (AP-6)	3.3.1-97	A
Regulator	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Regulator	Pressure boundary	Copper alloy	Gas (int)	None	None	VII.J-4 (AP-9)	3.3.1-97	A
Strainer	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Strainer	Pressure boundary	Stainless steel	Gas (int)	None	None	VII.J-19 (AP-22)	3.3.1-97	A

Table 3.3.2-5-IP2: Nitrogen System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Tank	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Tank	Pressure boundary	Stainless steel	Gas (int)	None	None	VII.J-19 (AP-22)	3.3.1-97	A
Tubing	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Tubing	Pressure boundary	Copper alloy	Gas (int)	None	None	VII.J-4 (AP-9)	3.3.1-97	A
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Tubing	Pressure boundary	Stainless steel	Gas (int)	None	None	VII.J-19 (AP-22)	3.3.1-97	A
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Gas (int)	None	None	VII.J-23 (AP-6)	3.3.1-97	A
Valve body	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Valve body	Pressure boundary	Copper alloy	Gas (int)	None	None	VII.J-4 (AP-9)	3.3.1-97	A

Table 3.3.2-5-IP2: Nitrogen System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Copper alloy > 15% Zn	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Valve body	Pressure boundary	Copper alloy > 15% Zn	Gas (int)	None	None	VII.J-4 (AP-9)	3.3.1-97	A
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Gas (int)	None	None	VII.J-19 (AP-22)	3.3.1-97	A

**Table 3.3.2-5-IP3
Nitrogen System
Summary of Aging Management Review**

Table 3.3.2-5-IP3: Nitrogen Systems								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Flex hose	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Flex hose	Pressure boundary	Stainless steel	Gas (int)	None	None	VII.J-19 (AP-22)	3.3.1-97	A
Orifice	Flow control	Stainless steel	Gas (int)	None	None	VII.J-19 (AP-22)	3.3.1-97	A
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Gas (int)	None	None	VII.J-23 (AP-6)	3.3.1-97	A
Piping	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C

Table 3.3.2-5-IP3: Nitrogen Systems								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Copper alloy	Gas (int)	None	None	VII.J-4 (AP-9)	3.3.1-97	A
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Piping	Pressure boundary	Stainless steel	Gas (int)	None	None	VII.J-19 (AP-22)	3.3.1-97	A
Tank	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Tank	Pressure boundary	Carbon steel	Gas (int)	None	None	VII.J-23 (AP-6)	3.3.1-97	A
Tubing	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Tubing	Pressure boundary	Copper alloy	Gas (int)	None	None	VII.J-4 (AP-9)	3.3.1-97	A
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Tubing	Pressure boundary	Stainless steel	Gas (int)	None	None	VII.J-19 (AP-22)	3.3.1-97	A
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A

Table 3.3.2-5-IP3: Nitrogen Systems								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Carbon steel	Gas (int)	None	None	VII.J-23 (AP-6)	3.3.1-97	A
Valve body	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Valve body	Pressure boundary	Copper alloy	Gas (int)	None	None	VII.J-4 (AP-9)	3.3.1-97	A
Valve body	Pressure boundary	Copper alloy > 15% Zn	Gas (int)	None	None	VII.J-4 (AP-9)	3.3.1-97	A
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Gas (int)	None	None	VII.J-19 (AP-22)	3.3.1-97	A

**Table 3.3.2-6-IP2
Chemical and Volume Control
Summary of Aging Management Review**

Table 3.3.2-6-IP2: Chemical and Volume Control								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Boric Acid Corrosion Prevention	VII.I-2 (A-102)	3.3.1-89	A
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	C
Filter housing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Filter housing	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	A
Filter housing	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VII.E1-20 (AP-82)	3.3.1-90	A
Filter housing	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	A
Flow element	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A

Table 3.3.2-6-IP2: Chemical and Volume Control								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Flow element	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	A
Flow element	Pressure boundary Flow control	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Flow element	Pressure boundary Flow control	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VII.E1-20 (AP-82)	3.3.1-90	A
Flow element	Pressure boundary Flow control	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	A
Fluid drive housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Fluid drive housing	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.E1-19 (AP-30)	3.3.1-14	B, 316
Heat exchanger (bonnet)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Boric Acid Corrosion Prevention	VII.E1-1 (A-79)	3.3.1-89	A
Heat exchanger (bonnet)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F1-10 (AP-41)	3.3.1-59	C

Table 3.3.2-6-IP2: Chemical and Volume Control								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Heat exchanger (bonnet)	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.E1-6 (A-63)	3.3.1-48	B
Heat exchanger (bonnet)	Pressure boundary	Gray cast iron	Air – indoor (ext)	Loss of material	Boric Acid Corrosion Prevention	VII.E1-1 (A-79)	3.3.1-89	A
Heat exchanger (bonnet)	Pressure boundary	Gray cast iron	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Heat exchanger (bonnet)	Pressure boundary	Gray cast iron	Treated water (int)	Loss of material	Selective Leaching	VII.C2-8 (A-50)	3.3.1-85	C, 308
Heat exchanger (bonnet)	Pressure boundary	Gray cast iron	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.E1-6 (A-63)	3.3.1-48	B
Heat exchanger (shell)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Boric Acid Corrosion Prevention	VII.E1-1 (A-79)	3.3.1-89	A
Heat exchanger (shell)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F1-10 (AP-41)	3.3.1-59	C
Heat exchanger (shell)	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.H2-5 (AP-39)	3.3.1-21	D, 316

Table 3.3.2-6-IP2: Chemical and Volume Control								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Heat exchanger (shell)	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.E1-6 (A-63)	3.3.1-48	B
Heat exchanger (shell)	Pressure boundary	Copper alloy > 15% Zn	Air – indoor (ext)	Loss of material	Boric Acid Corrosion Prevention	VII.I-12 (AP-66)	3.3.1-88	C
Heat exchanger (shell)	Pressure boundary	Copper alloy > 15% Zn	Lube oil (int)	Loss of material	Oil Analysis	VII.E1-12 (AP-47)	3.3.1-26	D, 316
Heat exchanger (tubes)	Heat transfer	Copper alloy	Lube oil (ext)	Fouling	Oil Analysis	V.A-12 (EP-47)	3.2.1-9	D, 316
Heat exchanger (tubes)	Heat transfer	Copper alloy	Treated water (int)	Fouling	Water Chemistry Control – Closed Cooling Water	VII.C2-2 (AP-80)	3.3.1-52	D
Heat exchanger (tubes)	Pressure boundary	Copper alloy	Lube oil (ext)	Loss of material	Oil Analysis	VII.E1-12 (AP-47)	3.3.1-26	D, 316
Heat exchanger (tubes)	Pressure boundary	Copper alloy	Lube oil (ext)	Loss of material – wear	Heat Exchanger Monitoring	--	--	H
Heat exchanger (tubes)	Pressure boundary	Copper alloy	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.E1-2 (AP-34)	3.3.1-51	B

Table 3.3.2-6-IP2: Chemical and Volume Control								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Heat exchanger (tubes)	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VII.E1-9 (A-69)	3.3.1-7	E, 315
						VII.E1-5 (A-84)	3.3.1-8	E
Heat exchanger (tubes)	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	A
Heat exchanger (tubes)	Pressure boundary	Stainless steel	Treated water (ext)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.E3-1 (A-67)	3.3.1-49	D
Heat exchanger (tubes)	Pressure boundary	Stainless steel	Treated water (ext)	Loss of material – wear	Heat Exchanger Monitoring	--	--	H
Heat exchanger (tubesheet)	Pressure boundary	Copper alloy > 15% Zn	Lube oil (ext)	Loss of material	Oil Analysis	VII.E1-12 (AP-47)	3.3.1-26	D, 316
Heat exchanger (tubesheet)	Pressure boundary	Copper alloy > 15% Zn	Treated water (ext)	Loss of material	Selective Leaching	VII.E1-13 (AP-43)	3.3.1-84	A, 308
Heat exchanger (tubesheet)	Pressure boundary	Copper alloy > 15% Zn	Treated water (ext)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.E1-2 (AP-34)	3.3.1-51	B

Table 3.3.2-6-IP2: Chemical and Volume Control								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Copper alloy > 15% Zn	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Piping	Pressure boundary	Copper alloy > 15% Zn	Lube oil (ext)	Loss of material	Oil Analysis	VII.E1-12 (AP-47)	3.3.1-26	B, 316
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Piping	Pressure boundary	Stainless steel	Lube oil (ext)	Loss of material	Oil Analysis	VII.E1-15 (AP-59)	3.3.1-33	B, 316
Piping	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	A
Piping	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VII.E1-20 (AP-82)	3.3.1-90	A
Piping	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	A
Piping	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	A
Pulsation dampener housing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Pulsation dampener housing	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	A
Pump casing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Pump casing	Pressure boundary	Stainless steel	Treated borated water (int)	Cracking – fatigue	Periodic Surveillance and Preventive Maintenance	VII.E1-7 (A-76)	3.3.1-9	E
Pump casing	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	A
Pump casing	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VII.E1-20 (AP-82)	3.3.1-90	A
Pump casing	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	A
Strainer housing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Strainer housing	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	A

Table 3.3.2-6-IP2: Chemical and Volume Control								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Strainer housing	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VII.E1-20 (AP-82)	3.3.1-90	A
Strainer housing	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	A
Tank	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Tank	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	V.A-27 (EP-41)	3.2.1-49	C
Tank	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VII.E1-20 (AP-82)	3.3.1-90	A
Tank	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	V.A-27 (EP-41)	3.2.1-49	C
Thermowell	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Thermowell	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	A

Table 3.3.2-6-IP2: Chemical and Volume Control								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Tubing	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Tubing	Pressure boundary	Copper alloy	Lube oil (int)	Loss of material	Oil Analysis	VII.E1-12 (AP-47)	3.3.1-26	B, 316
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Tubing	Pressure boundary	Stainless steel	Lube oil (int)	Loss of material	Oil Analysis	VII.E1-15 (AP-59)	3.3.1-33	B, 316
Tubing	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	A
Tubing	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VII.E1-20 (AP-82)	3.3.1-90	A
Tubing	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	A
Tubing	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	A
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A

Table 3.3.2-6-IP2: Chemical and Volume Control								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.E1-19 (AP-30)	3.3.1-14	B, 316
Valve body	Pressure boundary	CASS	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Valve body	Pressure boundary	CASS	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	A
Valve body	Pressure boundary	CASS	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VII.E1-20 (AP-82)	3.3.1-90	A
Valve body	Pressure boundary	CASS	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	A
Valve body	Pressure boundary	Copper alloy > 15% Zn	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Valve body	Pressure boundary	Copper alloy > 15% Zn	Lube oil (int)	Loss of material	Oil Analysis	VII.E1-12 (AP-47)	3.3.1-26	B, 316
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Valve body	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	A

Table 3.3.2-6-IP2: Chemical and Volume Control								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VII.E1-20 (AP-82)	3.3.1-90	A
Valve body	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	A
Valve body	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	A
Valve body	Pressure boundary Flow control	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Valve body	Pressure boundary Flow control	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	A

**Table 3.3.2-6-IP3
Chemical and Volume Control
Summary of Aging Management Review**

Table 3.3.2-6-IP3: Chemical and Volume Control								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Boric Acid Corrosion Prevention	VII.I-2 (A-102)	3.3.1-89	A
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	C
Filter housing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Filter housing	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	A
Filter housing	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VII.E1-20 (AP-82)	3.3.1-90	A
Filter housing	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	A
Flow element	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A

Table 3.3.2-6-IP3: Chemical and Volume Control								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Flow element	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	A
Flow element	Pressure boundary Flow control	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Flow element	Pressure boundary Flow control	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VII.E1-20 (AP-82)	3.3.1-90	A
Flow element	Pressure boundary Flow control	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	A
Fluid drive housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Fluid drive housing	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.E1-19 (AP-30)	3.3.1-14	B, 316
Heat exchanger (bonnet)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Boric Acid Corrosion Prevention	VII.E1-1 (A-79)	3.3.1-89	A
Heat exchanger (bonnet)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F1-10 (AP-41)	3.3.1-59	C

Table 3.3.2-6-IP3: Chemical and Volume Control								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Heat exchanger (bonnet)	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.E1-6 (A-63)	3.3.1-48	B
Heat exchanger (bonnet)	Pressure boundary	Gray cast iron	Air – indoor (ext)	Loss of material	Boric Acid Corrosion Prevention	VII.E1-1 (A-79)	3.3.1-89	A
Heat exchanger (bonnet)	Pressure boundary	Gray cast iron	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Heat exchanger (bonnet)	Pressure boundary	Gray cast iron	Treated water (int)	Loss of material	Selective Leaching	VII.C2-8 (A-50)	3.3.1-85	C, 308
Heat exchanger (bonnet)	Pressure boundary	Gray cast iron	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.E1-6 (A-63)	3.3.1-48	B
Heat exchanger (shell)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Boric Acid Corrosion Prevention	VII.E1-1 (A-79)	3.3.1-89	A
Heat exchanger (shell)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F1-10 (AP-41)	3.3.1-59	C
Heat exchanger (shell)	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.H2-5 (AP-39)	3.3.1-21	D, 316

Table 3.3.2-6-IP3: Chemical and Volume Control								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Heat exchanger (shell)	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.E1-6 (A-63)	3.3.1-48	B
Heat exchanger (shell)	Pressure boundary	Copper alloy > 15% Zn	Air – indoor (ext)	Loss of material	Boric Acid Corrosion Prevention	VII.I-12 (AP-66)	3.3.1-88	C
Heat exchanger (shell)	Pressure boundary	Copper alloy > 15% Zn	Lube oil (int)	Loss of material	Oil Analysis	VII.E1-12 (AP-47)	3.3.1-26	D, 316
Heat exchanger (tubes)	Heat transfer	Copper alloy	Lube oil (ext)	Fouling	Oil Analysis	V.A-12 (EP-47)	3.2.1-9	D, 316
Heat exchanger (tubes)	Heat transfer	Copper alloy	Treated water (int)	Fouling	Water Chemistry Control – Closed Cooling Water	VII.C2-2 (AP-80)	3.3.1-52	D
Heat exchanger (tubes)	Pressure boundary	Copper alloy	Lube oil (ext)	Loss of material	Oil Analysis	VII.E1-12 (AP-47)	3.3.1-26	D, 316
Heat exchanger (tubes)	Pressure boundary	Copper alloy	Lube oil (ext)	Loss of material – wear	Heat Exchanger Monitoring	--	--	H
Heat exchanger (tubes)	Pressure boundary	Copper alloy	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.E1-2 (AP-34)	3.3.1-51	B

Table 3.3.2-6-IP3: Chemical and Volume Control								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Heat exchanger (tubes)	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VII.E1-9 (A-69)	3.3.1-7	E, 315
						VII.E1-5 (A-84)	3.3.1-8	E
Heat exchanger (tubes)	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	A
Heat exchanger (tubes)	Pressure boundary	Stainless steel	Treated water (ext)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.E3-1 (A-67)	3.3.1-49	D
Heat exchanger (tubes)	Pressure boundary	Stainless steel	Treated water (ext)	Loss of material – wear	Heat Exchanger Monitoring	--	--	H
Heat exchanger (tubesheet)	Pressure boundary	Copper alloy > 15% Zn	Lube oil (ext)	Loss of material	Oil Analysis	VII.E1-12 (AP-47)	3.3.1-26	D, 316
Heat exchanger (tubesheet)	Pressure boundary	Copper alloy > 15% Zn	Treated water (ext)	Loss of material	Selective Leaching	VII.E1-13 (AP-43)	3.3.1-84	A, 308
Heat exchanger (tubesheet)	Pressure boundary	Copper alloy > 15% Zn	Treated water (ext)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.E1-2 (AP-34)	3.3.1-51	B

Table 3.3.2-6-IP3: Chemical and Volume Control								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Copper alloy > 15% Zn	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Piping	Pressure boundary	Copper alloy > 15% Zn	Lube oil (int)	Loss of material	Oil Analysis	VII.E1-12 (AP-47)	3.3.1-26	B, 316
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Piping	Pressure boundary	Stainless steel	Lube oil (int)	Loss of material	Oil Analysis	VII.E1-15 (AP-59)	3.3.1-33	B, 316
Piping	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	A
Piping	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VII.E1-20 (AP-82)	3.3.1-90	A
Piping	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking – fatigue	TCAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	A
Piping	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	A
Pump casing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A

Table 3.3.2-6-IP3: Chemical and Volume Control								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Pump casing	Pressure boundary	Stainless steel	Treated borated water (int)	Cracking – fatigue	Periodic Surveillance and Preventive Maintenance	VII.E1-7 (A-76)	3.3.1-9	E
Pump casing	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	A
Pump casing	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VII.E1-20 (AP-82)	3.3.1-90	A
Pump casing	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	A
Tank	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Tank	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	V.A-27 (EP-41)	3.2.1-49	C
Tank	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VII.E1-20 (AP-82)	3.3.1-90	A
Tank	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	V.A-27 (EP-41)	3.2.1-49	C

Table 3.3.2-6-IP3: Chemical and Volume Control								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Tubing	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Tubing	Pressure boundary	Copper alloy	Lube oil (int)	Loss of material	Oil Analysis	VII.E1-12 (AP-47)	3.3.1-26	B, 316
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Tubing	Pressure boundary	Stainless steel	Lube oil (int)	Loss of material	Oil Analysis	VII.E1-15 (AP-59)	3.3.1-33	B, 316
Tubing	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	A
Tubing	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VII.E1-20 (AP-82)	3.3.1-90	A
Tubing	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	A
Tubing	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	A
Valve body	Pressure boundary	CASS	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A

Table 3.3.2-6-IP3: Chemical and Volume Control								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	CASS	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	A
Valve body	Pressure boundary	CASS	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VII.E1-20 (AP-82)	3.3.1-90	A
Valve body	Pressure boundary	CASS	Treated borated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	A
Valve body	Pressure boundary	CASS	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	A
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Valve body	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	A
Valve body	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VII.E1-20 (AP-82)	3.3.1-90	A
Valve body	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	A

Table 3.3.2-6-IP3: Chemical and Volume Control								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	A
Valve body	Pressure boundary Flow control	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Valve body	Pressure boundary Flow control	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	A

**Table 3.3.2-7-IP2
Primary Water Makeup System
Summary of Aging Management Review**

Table 3.3.2-7-IP2: Primary Water Makeup System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	Bolting Integrity	VII.I-1 (AP-28)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Bolting	Pressure boundary	Stainless steel	Air – outdoor (ext)	Loss of material	Bolting Integrity	--	--	G
Flow element	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Flow element	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314
Flow element	Pressure boundary Flow control	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314
Heat exchanger (tubes)	Pressure boundary	Stainless steel	Steam (int)	Cracking	Water Chemistry Control – Primary and Secondary	--	--	G

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Heat exchanger (tubes)	Pressure boundary	Stainless steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	--	--	G
Heat exchanger (tubes)	Pressure boundary	Stainless steel	Treated water (ext)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.E-36 (S-22)	3.4.1-16	C, 314
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Piping	Pressure boundary	Stainless steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	--	--	G
Piping	Pressure boundary	Stainless steel	Treated water (ext)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314
Piping	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314
Pump casing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Pump casing	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314
Sight glass	Pressure boundary	Glass	Air – indoor (ext)	None	None	VII.J-8 (AP-14)	3.3.1-93	A

Table 3.3.2-7-IP2: Primary Water Makeup System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Sight glass	Pressure boundary	Glass	Treated water (int)	None	None	VII.J-13 (AP-51)	3.3.1-93	A
Strainer housing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Strainer housing	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314
Tank	Pressure boundary	Stainless steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	--	--	G
Tank	Pressure boundary	Stainless steel	Concrete (ext)	None	None	VII.J-17 (AP-19)	3.3.1-96	A
Tank	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.E-40 (S-13)	3.4.1-6	C, 314
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Tubing	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A

Table 3.3.2-7-IP2: Primary Water Makeup System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Stainless steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	--	--	G
Valve body	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314

**Table 3.3.2-7-IP3
Primary Water Makeup System
Summary of Aging Management Review**

Table 3.3.2-7-IP3: Primary Water Makeup System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	Bolting Integrity	VII.I-1 (AP-28)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Bolting	Pressure boundary	Stainless steel	Air – outdoor (ext)	Loss of material	Bolting Integrity	--	--	G
Flow element	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Flow element	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314
Flow element	Pressure boundary Flow control	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314
Heat exchanger (tubes)	Pressure boundary	Stainless steel	Steam (int)	Cracking	Water Chemistry Control – Primary and Secondary	--	--	G

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Heat exchanger (tubes)	Pressure boundary	Stainless steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	--	--	G
Heat exchanger (tubes)	Pressure boundary	Stainless steel	Treated water (ext)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.E-36 (S-22)	3.4.1-16	C, 314
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Piping	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314
Pump casing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Pump casing	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314
Sight glass	Pressure boundary	Glass	Air – indoor (ext)	None	None	VII.J-8 (AP-14)	3.3.1-93	A
Sight glass	Pressure boundary	Glass	Treated water (int)	None	None	VII.J-13 (AP-51)	3.3.1-93	A
Strainer housing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A

Table 3.3.2-7-IP3: Primary Water Makeup System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Strainer housing	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314
Tank	Pressure boundary	Stainless steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	--	--	G
Tank	Pressure boundary	Stainless steel	Concrete (ext)	None	None	VII.J-17 (AP-19)	3.3.1-96	A
Tank	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.E-40 (S-13)	3.4.1-6	C, 314
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314
Valve body	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Valve body	Pressure boundary	Copper alloy	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-5 (SP-61)	3.4.1-15	C, 314
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A

Table 3.3.2-7-IP3: Primary Water Makeup System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Stainless steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	--	--	G
Valve body	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314

**Table 3.3.2-8-IP2
Heating, Ventilation and Cooling
Summary of Aging Management Review**

Table 3.3.2-8-IP2: Heating, Ventilation and Cooling								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F2-4 (A-105)	3.3.1-55	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Damper housing	Pressure boundary	Aluminum	Air – indoor (ext)	None	None	V.F-2 (EP-3)	3.2.1-50	C
Damper housing	Pressure boundary	Aluminum	Air – indoor (int)	None	None	V.F-2 (EP-3)	3.2.1-50	C
Damper housing	Pressure boundary	Aluminum	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	--	--	G
Damper housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F2-2 (A-10)	3.3.1-56	A
Damper housing	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.B-1 (E-25)	3.2.1-32	E
Damper housing	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-9 (A-78)	3.3.1-58	A

Table 3.3.2-8-IP2: Heating, Ventilation and Cooling								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Duct	Pressure boundary	Aluminum	Air – indoor (ext)	None	None	V.F-2 (EP-3)	3.2.1-50	C
Duct	Pressure boundary	Aluminum	Air – indoor (int)	None	None	V.F-2 (EP-3)	3.2.1-50	C
Duct	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F2-2 (A-10)	3.3.1-56	A
Duct	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.B-1 (E-25)	3.2.1-32	E
Duct	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-9 (A-78)	3.3.1-58	A
Duct	Pressure boundary	Elastomer	Air – indoor (ext)	Change in material properties	Periodic Surveillance and Preventive Maintenance	VII.F2-7 (A-17)	3.3.1-11	E
Duct	Pressure boundary	Elastomer	Air – indoor (ext)	Cracking	Periodic Surveillance and Preventive Maintenance	VII.F2-7 (A-17)	3.3.1-11	E
Duct	Pressure boundary	Elastomer	Air – indoor (int)	Change in material properties	Periodic Surveillance and Preventive Maintenance	VII.F2-7 (A-17)	3.3.1-11	E
Duct	Pressure boundary	Elastomer	Air – indoor (int)	Cracking	Periodic Surveillance and Preventive Maintenance	VII.F2-7 (A-17)	3.3.1-11	E

Table 3.3.2-8-IP2: Heating, Ventilation and Cooling								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Duct	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Duct	Pressure boundary	Stainless steel	Air – indoor (int)	None	None	--	--	G
Duct flexible connection	Pressure boundary	Elastomer	Air – indoor (ext)	Change in material properties	Periodic Surveillance and Preventive Maintenance	VII.F2-7 (A-17)	3.3.1-11	E
Duct flexible connection	Pressure boundary	Elastomer	Air – indoor (ext)	Cracking	Periodic Surveillance and Preventive Maintenance	VII.F2-7 (A-17)	3.3.1-11	E
Duct flexible connection	Pressure boundary	Elastomer	Air – indoor (int)	Change in material properties	Periodic Surveillance and Preventive Maintenance	VII.F2-7 (A-17)	3.3.1-11	E
Duct flexible connection	Pressure boundary	Elastomer	Air – indoor (int)	Cracking	Periodic Surveillance and Preventive Maintenance	VII.F2-7 (A-17)	3.3.1-11	E
Fan housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F2-2 (A-10)	3.3.1-56	A
Fan housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.F2-2 (A-10)	3.3.1-56	E
Fan housing	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.B-1 (E-25)	3.2.1-32	E

Table 3.3.2-8-IP2: Heating, Ventilation and Cooling								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Fan housing	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	V.B-1 (E-25)	3.2.1-32	E
Fan housing	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-9 (A-78)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F2-2 (A-10)	3.3.1-56	A
Piping	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.A-19 (E-29)	3.2.1-32	E
Tubing	Pressure boundary	Aluminum	Air – indoor (ext)	None	None	V.F-2 (EP-3)	3.2.1-50	C
Tubing	Pressure boundary	Aluminum	Air – indoor (int)	None	None	V.F-2 (EP-3)	3.2.1-50	C
Tubing	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Tubing	Pressure boundary	Copper alloy	Air – indoor (int)	None	None	--	--	G
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Tubing	Pressure boundary	Stainless steel	Air – indoor (int)	None	None	--	--	G

Table 3.3.2-8-IP2: Heating, Ventilation and Cooling								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F2-2 (A-10)	3.3.1-56	A
Valve body	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.A-19 (E-29)	3.2.1-32	E
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Air – indoor (int)	None	None	--	--	G

**Table 3.3.2-8-IP3
Heating, Ventilation and Cooling
Summary of Aging Management Review**

Table 3.3.2-8-IP3: Heating, Ventilation and Cooling								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F2-4 (A-105)	3.3.1-55	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Damper housing	Pressure boundary	Aluminum	Air – indoor (ext)	None	None	V.F-2 (EP-3)	3.2.1-50	C
Damper housing	Pressure boundary	Aluminum	Air – indoor (int)	None	None	V.F-2 (EP-3)	3.2.1-50	C
Damper housing	Pressure boundary	Aluminum	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	--	--	G
Damper housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F2-2 (A-10)	3.3.1-56	A
Damper housing	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.B-1 (E-25)	3.2.1-32	E
Damper housing	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-9 (A-78)	3.3.1-58	A

Table 3.3.2-8-IP3: Heating, Ventilation and Cooling								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Duct	Pressure boundary	Aluminum	Air – indoor (ext)	None	None	V.F-2 (EP-3)	3.2.1-50	C
Duct	Pressure boundary	Aluminum	Air – indoor (int)	None	None	V.F-2 (EP-3)	3.2.1-50	C
Duct	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F2-2 (A-10)	3.3.1-56	A
Duct	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.B-1 (E-25)	3.2.1-32	E
Duct	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-9 (A-78)	3.3.1-58	A
Duct	Pressure boundary	Elastomer	Air – indoor (ext)	Change in material properties	Periodic Surveillance and Preventive Maintenance	VII.F2-7 (A-17)	3.3.1-11	E
Duct	Pressure boundary	Elastomer	Air – indoor (ext)	Cracking	Periodic Surveillance and Preventive Maintenance	VII.F2-7 (A-17)	3.3.1-11	E
Duct	Pressure boundary	Elastomer	Air – indoor (int)	Change in material properties	Periodic Surveillance and Preventive Maintenance	VII.F2-7 (A-17)	3.3.1-11	E
Duct	Pressure boundary	Elastomer	Air – indoor (int)	Cracking	Periodic Surveillance and Preventive Maintenance	VII.F2-7 (A-17)	3.3.1-11	E

Table 3.3.2-8-IP3: Heating, Ventilation and Cooling								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Duct	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Duct	Pressure boundary	Stainless steel	Air – indoor (int)	None	None	--	--	G
Duct flexible connection	Pressure boundary	Elastomer	Air – indoor (ext)	Change in material properties	Periodic Surveillance and Preventive Maintenance	VII.F2-7 (A-17)	3.3.1-11	E
Duct flexible connection	Pressure boundary	Elastomer	Air – indoor (ext)	Cracking	Periodic Surveillance and Preventive Maintenance	VII.F2-7 (A-17)	3.3.1-11	E
Duct flexible connection	Pressure boundary	Elastomer	Air – indoor (int)	Change in material properties	Periodic Surveillance and Preventive Maintenance	VII.F2-7 (A-17)	3.3.1-11	E
Duct flexible connection	Pressure boundary	Elastomer	Air – indoor (int)	Cracking	Periodic Surveillance and Preventive Maintenance	VII.F2-7 (A-17)	3.3.1-11	E
Fan housing	Pressure boundary	Aluminum	Air – indoor (int)	None	None	V.F-2 (EP-3)	3.2.1-50	C
Fan housing	Pressure boundary	Aluminum	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	--	--	G
Fan housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.F2-2 (A-10)	3.3.1-56	E

Table 3.3.2-8-IP3: Heating, Ventilation and Cooling								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Fan housing	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.B-1 (E-25)	3.2.1-32	E
Fan housing	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	V.B-1 (E-25)	3.2.1-32	E
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F2-2 (A-10)	3.3.1-56	A
Piping	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.A-19 (E-29)	3.2.1-32	E
Tubing	Pressure boundary	Aluminum	Air – indoor (ext)	None	None	V.F-2 (EP-3)	3.2.1-50	C
Tubing	Pressure boundary	Aluminum	Air – indoor (int)	None	None	V.F-2 (EP-3)	3.2.1-50	C
Tubing	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Tubing	Pressure boundary	Copper alloy	Air – indoor (int)	None	None	--	--	G
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Tubing	Pressure boundary	Stainless steel	Air – indoor (int)	None	None	--	--	G

Table 3.3.2-8-IP3: Heating, Ventilation and Cooling								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F2-2 (A-10)	3.3.1-56	A
Valve body	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.A-19 (E-29)	3.2.1-32	E
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Air – indoor (int)	None	None	--	--	G

**Table 3.3.2-9-IP2
Containment Cooling and Filtration
Summary of Aging Management Review**

Table 3.3.2-9-IP2: Containment Cooling and Filtration								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F3-4 (A-105)	3.3.1-55	A
Bolting	Pressure boundary	Carbon steel	Condensation (ext)	Loss of material	Bolting Integrity	VII.D-1 (A-103)	3.3.1-44	C
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Bolting	Pressure boundary	Stainless steel	Condensation (ext)	Loss of material	Bolting Integrity	VII.F3-1 (A-09)	3.3.1-27	E
Damper housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F3-2 (A-10)	3.3.1-56	A
Damper housing	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.B-1 (E-25)	3.2.1-32	E
Duct	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F3-2 (A-10)	3.3.1-56	A

Table 3.3.2-9-IP2: Containment Cooling and Filtration								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Duct	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.B-1 (E-25)	3.2.1-32	E
Duct flexible connection	Pressure boundary	Elastomer	Air – indoor (ext)	Change in material properties	Periodic Surveillance and Preventive Maintenance	VII.F3-7 (A-17)	3.3.1-11	E
Duct flexible connection	Pressure boundary	Elastomer	Air – indoor (ext)	Cracking	Periodic Surveillance and Preventive Maintenance	VII.F3-7 (A-17)	3.3.1-11	E
Duct flexible connection	Pressure boundary	Elastomer	Air – indoor (int)	Change in material properties	Periodic Surveillance and Preventive Maintenance	VII.F3-7 (A-17)	3.3.1-11	E
Duct flexible connection	Pressure boundary	Elastomer	Air – indoor (int)	Cracking	Periodic Surveillance and Preventive Maintenance	VII.F3-7 (A-17)	3.3.1-11	E
Fan housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F3-2 (A-10)	3.3.1-56	A
Fan housing	Pressure boundary	Carbon steel	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.F3-3 (A-08)	3.3.1-72	E
Filter housing	Pressure boundary	Carbon steel	Condensation (ext)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.I-11 (A-81)	3.3.1-58	A

Table 3.3.2-9-IP2: Containment Cooling and Filtration								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Filter housing	Pressure boundary	Carbon steel	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.F3-3 (A-08)	3.3.1-72	E
Heat exchanger (fins)	Heat transfer	Copper alloy	Condensation (ext)	Fouling	Service Water Integrity	--	--	H
Heat exchanger (header)	Pressure boundary	Titanium	Condensation (ext)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	F
Heat exchanger (header)	Pressure boundary	Titanium	Raw water (int)	Loss of material	Service Water Integrity	--	--	F
Heat exchanger (housing)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.F3-10 (AP-41)	3.3.1-59	E
Heat exchanger (housing)	Pressure boundary	Carbon steel	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.F3-3 (A-08)	3.3.1-72	E
Heat exchanger (tubes)	Heat transfer	Stainless steel	Condensation (ext)	Fouling	Service Water Integrity	--	--	G
Heat exchanger (tubes)	Heat transfer	Stainless steel	Raw water (int)	Fouling	Service Water Integrity	VII.C1-7 (AP-61)	3.3.1-83	C

Table 3.3.2-9-IP2: Containment Cooling and Filtration								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Heat exchanger (tubes)	Pressure boundary	Stainless steel	Condensation (ext)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.F3-1 (A-09)	3.3.1-27	E
Heat exchanger (tubes)	Pressure boundary	Stainless steel	Condensation (ext)	Loss of material – wear	Periodic Surveillance and Preventive Maintenance	--	--	H
Heat exchanger (tubes)	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-15 (A-54)	3.3.1-79	C
Moisture separator	Filtration	Stainless steel	Condensation (ext)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.F3-1 (A-09)	3.3.1-27	E
Moisture separator	Filtration	Stainless steel	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.F3-1 (A-09)	3.3.1-27	E
Nozzle	Flow control	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F3-2 (A-10)	3.3.1-56	A
Nozzle	Flow control	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.A-19 (E-29)	3.2.1-32	E
Tubing	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Tubing	Pressure boundary	Copper alloy	Air – indoor (int)	None	None	--	--	G

Table 3.3.2-9-IP2: Containment Cooling and Filtration								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F3-2 (A-10)	3.3.1-56	A
Valve body	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.A-19 (E-29)	3.2.1-32	E
Valve body	Pressure boundary	Copper alloy > 15% Zn	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Valve body	Pressure boundary	Copper alloy > 15% Zn	Air – indoor (int)	None	None	--	--	G

**Table 3.3.2-9-IP3
Containment Cooling and Filtration
Summary of Aging Management Review**

Table 3.3.2-9-IP3: Containment Cooling and Filtration								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F3-4 (A-105)	3.3.1-55	A
Bolting	Pressure boundary	Carbon steel	Condensation (ext)	Loss of material	Bolting Integrity	VII.D-1 (A-103)	3.3.1-44	C
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Bolting	Pressure boundary	Stainless steel	Condensation (ext)	Loss of material	Bolting Integrity	VII.F3-1 (A-09)	3.3.1-27	E
Damper housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F3-2 (A-10)	3.3.1-56	A
Damper housing	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.B-1 (E-25)	3.2.1-32	E
Damper housing	Pressure boundary	Carbon steel	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.F3-3 (A-08)	3.3.1-72	E

Table 3.3.2-9-IP3: Containment Cooling and Filtration								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Duct	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F3-2 (A-10)	3.3.1-56	A
Duct	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.B-1 (E-25)	3.2.1-32	E
Duct flexible connection	Pressure boundary	Elastomer	Air – indoor (ext)	Change in material properties	Periodic Surveillance and Preventive Maintenance	VII.F3-7 (A-17)	3.3.1-11	E
Duct flexible connection	Pressure boundary	Elastomer	Air – indoor (ext)	Cracking	Periodic Surveillance and Preventive Maintenance	VII.F3-7 (A-17)	3.3.1-11	E
Duct flexible connection	Pressure boundary	Elastomer	Air – indoor (int)	Change in material properties	Periodic Surveillance and Preventive Maintenance	VII.F3-7 (A-17)	3.3.1-11	E
Duct flexible connection	Pressure boundary	Elastomer	Air – indoor (int)	Cracking	Periodic Surveillance and Preventive Maintenance	VII.F3-7 (A-17)	3.3.1-11	E
Fan housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F3-2 (A-10)	3.3.1-56	A
Fan housing	Pressure boundary	Carbon steel	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.F3-3 (A-08)	3.3.1-72	E

Table 3.3.2-9-IP3: Containment Cooling and Filtration								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Filter housing	Pressure boundary	Stainless steel	Condensation (ext)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.F3-1 (A-09)	3.3.1-27	E
Filter housing	Pressure boundary	Stainless steel	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.F3-1 (A-09)	3.3.1-27	E
Heat exchanger (fins)	Heat transfer	Copper alloy	Condensation (ext)	Fouling	Service Water Integrity	--	--	H
Heat exchanger (header)	Pressure boundary	Stainless steel	Condensation (ext)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.F3-1 (A-09)	3.3.1-27	E
Heat exchanger (header)	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-15 (A-54)	3.3.1-79	C
Heat exchanger (housing)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.F3-10 (AP-41)	3.3.1-59	E
Heat exchanger (housing)	Pressure boundary	Carbon steel	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.F3-3 (A-08)	3.3.1-72	E
Heat exchanger (tubes)	Heat transfer	Stainless steel	Condensation (ext)	Fouling	Service Water Integrity	--	--	G

Table 3.3.2-9-IP3: Containment Cooling and Filtration								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Heat exchanger (tubes)	Heat transfer	Stainless steel	Raw water (int)	Fouling	Service Water Integrity	VII.C1-7 (AP-61)	3.3.1-83	C
Heat exchanger (tubes)	Pressure boundary	Stainless steel	Condensation (ext)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.F3-1 (A-09)	3.3.1-27	E
Heat exchanger (tubes)	Pressure boundary	Stainless steel	Condensation (ext)	Loss of material – wear	Periodic Surveillance and Preventive Maintenance	--	--	H
Heat exchanger (tubes)	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-15 (A-54)	3.3.1-79	C
Moisture separator	Filtration	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Moisture separator	Filtration	Stainless steel	Air – indoor (int)	None	None	--	--	G
Nozzle	Flow control	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F3-2 (A-10)	3.3.1-56	A
Nozzle	Flow control	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.A-19 (E-29)	3.2.1-32	E
Tubing	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C

Table 3.3.2-9-IP3: Containment Cooling and Filtration								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Tubing	Pressure boundary	Copper alloy	Air – indoor (int)	None	None	--	--	G
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F3-2 (A-10)	3.3.1-56	A
Valve body	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.A-19 (E-29)	3.2.1-32	E

**Table 3.3.2-10-IP2
Control Room Heating, Ventilation and Cooling
Summary of Aging Management Review**

Table 3.3.2-10-IP2: Control Room Heating, Ventilation and Cooling								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F1-4 (A-105)	3.3.1-55	A
Bolting	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	Bolting Integrity	VII.I-1 (AP-28)	3.3.1-43	A
Bolting	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	VII.F1-4 (A-105)	3.3.1-55	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Bolting	Pressure boundary	Stainless steel	Air – outdoor (ext)	Loss of material	Bolting Integrity	--	--	G
Bolting	Pressure boundary	Stainless steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	--	--	G
Compressor housing	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-9 (A-78)	3.3.1-58	A
Compressor housing	Pressure boundary	Carbon steel	Gas (int)	None	None	VII.J-23 (AP-6)	3.3.1-97	A

Table 3.3.2-10-IP2: Control Room Heating, Ventilation and Cooling								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Damper housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F1-2 (A-10)	3.3.1-56	A
Damper housing	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.B-1 (E-25)	3.2.1-32	E
Damper housing	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-9 (A-78)	3.3.1-58	A
Drip pan	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F1-2 (A-10)	3.3.1-56	A
Drip pan	Pressure boundary	Carbon steel	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.F1-3 (A-08)	3.3.1-72	E
Duct	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F1-2 (A-10)	3.3.1-56	A
Duct	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.B-1 (E-25)	3.2.1-32	E
Duct	Pressure boundary	Carbon steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.I-11 (A-81)	3.3.1-58	A
Duct	Pressure boundary	Carbon steel	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.F1-3 (A-08)	3.3.1-72	E

Table 3.3.2-10-IP2: Control Room Heating, Ventilation and Cooling								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Duct flexible connection	Pressure boundary	Elastomer	Air – indoor (ext)	Change in material properties	Periodic Surveillance and Preventive Maintenance	VII.F1-7 (A-17)	3.3.1-11	E
Duct flexible connection	Pressure boundary	Elastomer	Air – indoor (ext)	Cracking	Periodic Surveillance and Preventive Maintenance	VII.F1-7 (A-17)	3.3.1-11	E
Duct flexible connection	Pressure boundary	Elastomer	Air – indoor (int)	None	None	--	--	I, 306
Duct flexible connection	Pressure boundary	Elastomer	Air – outdoor (ext)	Change in material properties	Periodic Surveillance and Preventive Maintenance	--	--	G
Duct flexible connection	Pressure boundary	Elastomer	Air – outdoor (ext)	Cracking	Periodic Surveillance and Preventive Maintenance	--	--	G
Fan housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F1-2 (A-10)	3.3.1-56	A
Fan housing	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.B-1 (E-25)	3.2.1-32	E
Fan housing	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-9 (A-78)	3.3.1-58	A
Filter housing	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.B-1 (E-25)	3.2.1-32	E

Table 3.3.2-10-IP2: Control Room Heating, Ventilation and Cooling								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Filter housing	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-9 (A-78)	3.3.1-58	A
Flow element	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.A-19 (E-29)	3.2.1-32	E
Flow element	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-9 (A-78)	3.3.1-58	A
Heat exchanger (fins)	Heat transfer	Aluminum	Air – outdoor (ext)	Fouling	Periodic Surveillance and Preventive Maintenance	--	--	G
Heat exchanger (fins)	Heat transfer	Aluminum	Condensation (ext)	Fouling	Periodic Surveillance and Preventive Maintenance	--	--	H
Heat exchanger (housing)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F1-10 (AP-41)	3.3.1-59	A
Heat exchanger (housing)	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.B-1 (E-25)	3.2.1-32	E
Heat exchanger (housing)	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-9 (A-78)	3.3.1-58	A

Table 3.3.2-10-IP2: Control Room Heating, Ventilation and Cooling								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Heat exchanger (tubes)	Heat transfer	Copper alloy	Air – outdoor (ext)	Fouling	Periodic Surveillance and Preventive Maintenance	--	--	G
Heat exchanger (tubes)	Heat transfer	Copper alloy	Condensation (ext)	Fouling	Periodic Surveillance and Preventive Maintenance	--	--	G
Heat exchanger (tubes)	Heat transfer	Copper alloy	Gas (int)	None	None	VII.J-4 (AP-9)	3.3.1-97	C
Heat exchanger (tubes)	Pressure boundary	Copper alloy	Air – outdoor (ext)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G
Heat exchanger (tubes)	Pressure boundary	Copper alloy	Condensation (ext)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.F1-16 (A-46)	3.3.1-25	E
Heat exchanger (tubes)	Pressure boundary	Copper alloy	Gas (int)	None	None	VII.J-4 (AP-9)	3.3.1-97	C
Louver housing	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.B-1 (E-25)	3.2.1-32	E
Louver housing	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-9 (A-78)	3.3.1-58	A

Table 3.3.2-10-IP2: Control Room Heating, Ventilation and Cooling								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Piping	Pressure boundary	Copper alloy	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	--	--	G
Piping	Pressure boundary	Copper alloy	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.F1-16 (A-46)	3.3.1-25	E
Piping	Pressure boundary	Copper alloy	Gas (int)	None	None	VII.J-4 (AP-9)	3.3.1-97	A
Tubing	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Tubing	Pressure boundary	Copper alloy	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	--	--	G
Tubing	Pressure boundary	Copper alloy	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.F1-16 (A-46)	3.3.1-25	E
Tubing	Pressure boundary	Copper alloy	Gas (int)	None	None	VII.J-4 (AP-9)	3.3.1-97	A
Valve body	Pressure boundary	Aluminum	Air – indoor (ext)	None	None	V.F-2 (EP-3)	3.2.1-50	C
Valve body	Pressure boundary	Aluminum	Air – treated (int)	None	None	--	--	G

Table 3.3.2-10-IP2: Control Room Heating, Ventilation and Cooling								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Valve body	Pressure boundary	Copper alloy	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	--	--	G
Valve body	Pressure boundary	Copper alloy	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.F1-16 (A-46)	3.3.1-25	E
Valve body	Pressure boundary	Copper alloy	Gas (int)	None	None	VII.J-4 (AP-9)	3.3.1-97	A

**Table 3.3.2-10-IP3
Control Room Heating, Ventilation and Cooling
Summary of Aging Management Review**

Table 3.3.2-10-IP3: Control Room Heating, Ventilation and Cooling								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F1-4 (A-105)	3.3.1-55	A
Bolting	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	Bolting Integrity	VII.I-1 (AP-28)	3.3.1-43	A
Bolting	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	VII.F1-4 (A-105)	3.3.1-55	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Bolting	Pressure boundary	Stainless steel	Air – outdoor (ext)	Loss of material	Bolting Integrity	--	--	G
Bolting	Pressure boundary	Stainless steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	--	--	G
Compressor housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F1-2 (A-10)	3.3.1-56	A
Compressor housing	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-9 (A-78)	3.3.1-58	A

Table 3.3.2-10-IP3: Control Room Heating, Ventilation and Cooling								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Compressor housing	Pressure boundary	Carbon steel	Gas (int)	None	None	VII.J-23 (AP-6)	3.3.1-97	A
Damper housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F1-2 (A-10)	3.3.1-56	A
Damper housing	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.B-1 (E-25)	3.2.1-32	E
Damper housing	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-9 (A-78)	3.3.1-58	A
Drip pan	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F1-2 (A-10)	3.3.1-56	A
Drip pan	Pressure boundary	Carbon steel	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.F1-3 (A-08)	3.3.1-72	E
Duct	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F1-2 (A-10)	3.3.1-56	A
Duct	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.B-1 (E-25)	3.2.1-32	E
Duct	Pressure boundary	Carbon steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.I-11 (A-81)	3.3.1-58	A

Table 3.3.2-10-IP3: Control Room Heating, Ventilation and Cooling								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Duct	Pressure boundary	Carbon steel	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.F1-3 (A-08)	3.3.1-72	E
Duct flexible connection	Pressure boundary	Elastomer	Air – indoor (ext)	Change in material properties	Periodic Surveillance and Preventive Maintenance	VII.F1-7 (A-17)	3.3.1-11	E
Duct flexible connection	Pressure boundary	Elastomer	Air – indoor (ext)	Cracking	Periodic Surveillance and Preventive Maintenance	VII.F1-7 (A-17)	3.3.1-11	E
Duct flexible connection	Pressure boundary	Elastomer	Air – indoor (int)	None	None	--	--	I, 306
Fan housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F1-2 (A-10)	3.3.1-56	A
Fan housing	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.B-1 (E-25)	3.2.1-32	E
Fan housing	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-9 (A-78)	3.3.1-58	A
Filter housing	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.B-1 (E-25)	3.2.1-32	E
Filter housing	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-9 (A-78)	3.3.1-58	A

Table 3.3.2-10-IP3: Control Room Heating, Ventilation and Cooling								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Filter housing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Filter housing	Pressure boundary	Stainless steel	Air – indoor (int)	None	None	--	--	G
Heat exchanger (fins)	Heat transfer	Aluminum	Air – outdoor (ext)	Fouling	Periodic Surveillance and Preventive Maintenance	--	--	G
Heat exchanger (fins)	Heat transfer	Aluminum	Condensation (ext)	Fouling	Periodic Surveillance and Preventive Maintenance	--	--	H
Heat exchanger (shell)	Pressure boundary	Carbon steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.I-11 (A-81)	3.3.1-58	A
Heat exchanger (shell)	Pressure boundary	Carbon steel	Gas (int)	None	None	VII.J-23 (AP-6)	3.3.1-97	C
Heat exchanger (tubes)	Heat transfer	Copper alloy	Air – outdoor (ext)	Fouling	Periodic Surveillance and Preventive Maintenance	--	--	G
Heat exchanger (tubes)	Heat transfer	Copper alloy	Condensation (ext)	Fouling	Periodic Surveillance and Preventive Maintenance	--	--	G

Table 3.3.2-10-IP3: Control Room Heating, Ventilation and Cooling								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Heat exchanger (tubes)	Heat transfer	Copper alloy	Gas (ext)	None	None	VII.J-4 (AP-9)	3.3.1-97	C
Heat exchanger (tubes)	Heat transfer	Copper alloy	Gas (int)	None	None	VII.J-4 (AP-9)	3.3.1-97	C
Heat exchanger (tubes)	Heat transfer	Copper alloy	Raw water (int)	Fouling	Service Water Integrity	VII.C1-6 (A-72)	3.3.1-83	C
Heat exchanger (tubes)	Pressure boundary	Copper alloy	Air – outdoor (ext)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G
Heat exchanger (tubes)	Pressure boundary	Copper alloy	Condensation (ext)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.F1-16 (A-46)	3.3.1-25	E
Heat exchanger (tubes)	Pressure boundary	Copper alloy	Gas (ext)	None	None	VII.J-4 (AP-9)	3.3.1-97	C
Heat exchanger (tubes)	Pressure boundary	Copper alloy	Gas (int)	None	None	VII.J-4 (AP-9)	3.3.1-97	C
Heat exchanger (tubes)	Pressure boundary	Copper alloy	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-3 (A-65)	3.3.1-82	C

Table 3.3.2-10-IP3: Control Room Heating, Ventilation and Cooling								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Louver housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F1-2 (A-10)	3.3.1-56	A
Louver housing	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-9 (A-78)	3.3.1-58	A
Piping	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Piping	Pressure boundary	Copper alloy	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	--	--	G
Piping	Pressure boundary	Copper alloy	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.F1-16 (A-46)	3.3.1-25	E
Piping	Pressure boundary	Copper alloy	Gas (int)	None	None	VII.J-4 (AP-9)	3.3.1-97	A
Pump casing	Pressure boundary	Aluminum	Air – indoor (ext)	None	None	V.F-2 (EP-3)	3.2.1-50	C
Pump casing	Pressure boundary	Aluminum	Air – indoor (int)	None	None	V.F-2 (EP-3)	3.2.1-50	C
Tubing	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Tubing	Pressure boundary	Copper alloy	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	--	--	G

Table 3.3.2-10-IP3: Control Room Heating, Ventilation and Cooling								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Tubing	Pressure boundary	Copper alloy	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.F1-16 (A-46)	3.3.1-25	E
Tubing	Pressure boundary	Copper alloy	Gas (int)	None	None	VII.J-4 (AP-9)	3.3.1-97	A
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Tubing	Pressure boundary	Stainless steel	Air – indoor (int)	None	None	--	--	G
Valve body	Pressure boundary	Aluminum	Air – indoor (ext)	None	None	V.F-2 (EP-3)	3.2.1-50	C
Valve body	Pressure boundary	Aluminum	Air – treated (int)	None	None	--	--	G
Valve body	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Valve body	Pressure boundary	Copper alloy	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	--	--	G
Valve body	Pressure boundary	Copper alloy	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.F1-16 (A-46)	3.3.1-25	E
Valve body	Pressure boundary	Copper alloy	Gas (int)	None	None	VII.J-4 (AP-9)	3.3.1-97	A

Table 3.3.2-10-IP3: Control Room Heating, Ventilation and Cooling								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Air – indoor (int)	None	None	--	--	G

**Table 3.3.2-11-IP2
Fire Protection – Water
Summary of Aging Management Review**

Table 3.3.2-11-IP2: Fire Protection – Water								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	Bolting Integrity	VII.I-1 (AP-28)	3.3.1-43	A
Bolting	Pressure boundary	Carbon steel	Soil (ext)	Loss of material	Buried Piping and Tanks Inspection	VII.G-25 (A-01)	3.3.1-19	C
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Bolting	Pressure boundary	Stainless steel	Air – outdoor (ext)	Loss of material	Bolting Integrity	--	--	G
Expansion joint	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Expansion joint	Pressure boundary	Carbon steel	Exhaust gas (int)	Cracking – fatigue	Fire Protection	--	--	H
Expansion joint	Pressure boundary	Carbon steel	Exhaust gas (int)	Loss of material	Fire Protection	VII.H2-2 (A-27)	3.3.1-18	E

Table 3.3.2-11-IP2: Fire Protection – Water								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Flow element	Pressure boundary Flow control	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Flow element	Pressure boundary Flow control	Carbon steel	Treated water (int)	Loss of material	Fire Water System	VII.G-24 (A-33)	3.3.1-68	B, 303
Heater housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Heater housing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Fire Water System	VII.G-24 (A-33)	3.3.1-68	B, 303
Hydrant	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-9 (A-78)	3.3.1-58	A
Hydrant	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Fire Water System	VII.G-24 (A-33)	3.3.1-68	B, 303
Nozzle	Pressure boundary Flow control	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Nozzle	Pressure boundary Flow control	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.A-19 (E-29)	3.2.1-32	E
Nozzle	Pressure boundary Flow control	Carbon steel	Treated water (int)	Loss of material	Fire Water System	VII.G-24 (A-33)	3.3.1-68	B, 303

Table 3.3.2-11-IP2: Fire Protection – Water								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Nozzle	Pressure boundary Flow control	Copper alloy > 15% Zn	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Nozzle	Pressure boundary Flow control	Copper alloy > 15% Zn	Air – indoor (int)	None	None	--	--	G
Nozzle	Pressure boundary Flow control	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Fire Water System	VII.G-12 (A-45)	3.3.1-70	B, 303
Nozzle	Pressure boundary Flow control	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Selective Leaching	VII.G-13 (A-47)	3.3.1-84	A, 303
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.A-19 (E-29)	3.2.1-32	E
Piping	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-9 (A-78)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Exhaust gas (int)	Cracking – fatigue	Fire Protection	--	--	H
Piping	Pressure boundary	Carbon steel	Exhaust gas (int)	Loss of material	Fire Protection	VII.H2-2 (A-27)	3.3.1-18	E

Table 3.3.2-11-IP2: Fire Protection – Water								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Carbon steel	Soil (ext)	Loss of material	Buried Piping and Tanks Inspection	VII.G-25 (A-01)	3.3.1-19	A
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Fire Water System	VII.G-24 (A-33)	3.3.1-68	B, 303
Piping	Pressure boundary	Gray cast iron	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Gray cast iron	Soil (ext)	Loss of material	Buried Piping and Tanks Inspection	VII.G-25 (A-01)	3.3.1-19	A
Piping	Pressure boundary	Gray cast iron	Soil (ext)	Loss of material	Selective Leaching	VII.G-15 (A-02)	3.3.1-85	A
Piping	Pressure boundary	Gray cast iron	Treated water (int)	Loss of material	Fire Water System	VII.G-24 (A-33)	3.3.1-68	B, 303
Piping	Pressure boundary	Gray cast iron	Treated water (int)	Loss of material	Selective Leaching	VII.G-14 (A-51)	3.3.1-85	A, 303
Pump casing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Pump casing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Fire Water System	VII.G-24 (A-33)	3.3.1-68	B, 303
Pump casing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A

Table 3.3.2-11-IP2: Fire Protection – Water								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Pump casing	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Fire Water System	VII.G-19 (A-55)	3.3.1-69	B, 303
Silencer	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Silencer	Pressure boundary	Carbon steel	Exhaust gas (int)	Cracking – fatigue	Fire Protection	--	--	H
Silencer	Pressure boundary	Carbon steel	Exhaust gas (int)	Loss of material	Fire Protection	VII.H2-2 (A-27)	3.3.1-18	E
Strainer	Filtration	Carbon steel	Treated water (int)	Loss of material	Fire Water System	VII.G-24 (A-33)	3.3.1-68	B, 303
Strainer	Filtration	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Fire Water System	VII.G-12 (A-45)	3.3.1-70	B, 303
Strainer	Filtration	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Selective Leaching	VII.G-13 (A-47)	3.3.1-84	A, 303
Strainer housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Strainer housing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Fire Water System	VII.G-24 (A-33)	3.3.1-68	B, 303
Tank	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A

Table 3.3.2-11-IP2: Fire Protection – Water								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Tank	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	Aboveground Steel Tanks	VII.H1-11 (A-95)	3.3.1-40	C
Tank	Pressure boundary	Carbon steel	Concrete (ext)	Loss of material	Aboveground Steel Tanks	--	--	G
Tank	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Fire Water System	VII.G-24 (A-33)	3.3.1-68	B, 303
Thermowell	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Thermowell	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Fire Water System	VII.G-24 (A-33)	3.3.1-68	B, 303
Thermowell	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Thermowell	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Fire Water System	VII.G-19 (A-55)	3.3.1-69	B, 303
Tubing	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Tubing	Pressure boundary	Copper alloy	Treated water (int)	Loss of material	Fire Water System	VII.G-12 (A-45)	3.3.1-70	B, 303
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A

Table 3.3.2-11-IP2: Fire Protection – Water								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Carbon steel	Soil (ext)	Loss of material	Buried Piping and Tanks Inspection	VII.G-25 (A-01)	3.3.1-19	A
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Fire Water System	VII.G-24 (A-33)	3.3.1-68	B, 303
Valve body	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Valve body	Pressure boundary	Copper alloy	Treated water (int)	Loss of material	Fire Water System	VII.G-12 (A-45)	3.3.1-70	B, 303
Valve body	Pressure boundary	Copper alloy > 15% Zn	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Valve body	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Fire Water System	VII.G-12 (A-45)	3.3.1-70	B, 303
Valve body	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Selective Leaching	VII.G-13 (A-47)	3.3.1-84	A, 303
Valve body	Pressure boundary	Gray cast iron	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Gray cast iron	Soil (ext)	Loss of material	Buried Piping and Tanks Inspection	VII.G-25 (A-01)	3.3.1-19	A
Valve body	Pressure boundary	Gray cast iron	Soil (ext)	Loss of material	Selective Leaching	VII.G-15 (A-02)	3.3.1-85	A

Table 3.3.2-11-IP2: Fire Protection – Water								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Gray cast iron	Treated water (int)	Loss of material	Fire Water System	VII.G-24 (A-33)	3.3.1-68	B, 303
Valve body	Pressure boundary	Gray cast iron	Treated water (int)	Loss of material	Selective Leaching	VII.G-14 (A-51)	3.3.1-85	A, 303
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Fire Water System	VII.G-19 (A-55)	3.3.1-69	B, 303

**Table 3.3.2-11-IP3
Fire Protection – Water
Summary of Aging Management Review**

Table 3.3.2-11-IP3: Fire Protection – Water								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	Bolting Integrity	VII.I-1 (AP-28)	3.3.1-43	A
Bolting	Pressure boundary	Carbon steel	Soil (ext)	Loss of material	Buried Piping and Tanks Inspection	VII.G-25 (A-01)	3.3.1-19	C
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Bolting	Pressure boundary	Stainless steel	Air – outdoor (ext)	Loss of material	Bolting Integrity	--	--	G
Expansion joint	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Expansion joint	Pressure boundary	Carbon steel	Exhaust gas (int)	Cracking – fatigue	Fire Protection	--	--	H
Expansion joint	Pressure boundary	Carbon steel	Exhaust gas (int)	Loss of material	Fire Protection	VII.H2-2 (A-27)	3.3.1-18	E
Filter housing	Filtration	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.A-19 (E-29)	3.2.1-32	E

Table 3.3.2-11-IP3: Fire Protection – Water								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Filter housing	Filtration	Carbon steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-9 (A-78)	3.3.1-58	A
Filter housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Filter housing	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.A-19 (E-29)	3.2.1-32	E
Flow element	Pressure boundary Flow control	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Flow element	Pressure boundary Flow control	Carbon steel	Treated water (int)	Loss of material	Fire Water System	VII.G-24 (A-33)	3.3.1-68	B, 303
Heater housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Heater housing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Fire Water System	VII.G-24 (A-33)	3.3.1-68	B, 303
Hydrant	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-9 (A-78)	3.3.1-58	A
Hydrant	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Fire Water System	VII.G-24 (A-33)	3.3.1-68	B, 303

Table 3.3.2-11-IP3: Fire Protection – Water								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Nozzle	Pressure boundary Flow control	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Nozzle	Pressure boundary Flow control	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.A-19 (E-29)	3.2.1-32	E
Nozzle	Pressure boundary Flow control	Carbon steel	Treated water (int)	Loss of material	Fire Water System	VII.G-24 (A-33)	3.3.1-68	B, 303
Nozzle	Pressure boundary Flow control	Copper alloy > 15% Zn	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Nozzle	Pressure boundary Flow control	Copper alloy > 15% Zn	Air – indoor (int)	None	None	--	--	G
Nozzle	Pressure boundary Flow control	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Fire Water System	VII.G-12 (A-45)	3.3.1-70	B, 303
Nozzle	Pressure boundary Flow control	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Selective Leaching	VII.G-13 (A-47)	3.3.1-84	A, 303
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A

Table 3.3.2-11-IP3: Fire Protection – Water								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.A-19 (E-29)	3.2.1-32	E
Piping	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-9 (A-78)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Exhaust gas (int)	Cracking – fatigue	Fire Protection	--	--	H
Piping	Pressure boundary	Carbon steel	Exhaust gas (int)	Loss of material	Fire Protection	VII.H2-2 (A-27)	3.3.1-18	E
Piping	Pressure boundary	Carbon steel	Soil (ext)	Loss of material	Buried Piping and Tanks Inspection	VII.G-25 (A-01)	3.3.1-19	A
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Fire Water System	VII.G-24 (A-33)	3.3.1-68	B, 303
Piping	Pressure boundary	Gray cast iron	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Gray cast iron	Soil (ext)	Loss of material	Buried Piping and Tanks Inspection	VII.G-25 (A-01)	3.3.1-19	A
Piping	Pressure boundary	Gray cast iron	Soil (ext)	Loss of material	Selective Leaching	VII.G-15 (A-02)	3.3.1-85	A
Piping	Pressure boundary	Gray cast iron	Treated water (int)	Loss of material	Fire Water System	VII.G-24 (A-33)	3.3.1-68	B, 303

Table 3.3.2-11-IP3: Fire Protection – Water								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Gray cast iron	Treated water (int)	Loss of material	Selective Leaching	VII.G-14 (A-51)	3.3.1-85	A, 303
Pump casing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Pump casing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Fire Water System	VII.G-24 (A-33)	3.3.1-68	B, 303
Silencer	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Silencer	Pressure boundary	Carbon steel	Exhaust gas (int)	Cracking – fatigue	Fire Protection	--	--	H
Silencer	Pressure boundary	Carbon steel	Exhaust gas (int)	Loss of material	Fire Protection	VII.H2-2 (A-27)	3.3.1-18	E
Strainer	Filtration	Carbon steel	Treated water (int)	Loss of material	Fire Water System	VII.G-24 (A-33)	3.3.1-68	B, 303
Strainer housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Strainer housing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Fire Water System	VII.G-24 (A-33)	3.3.1-68	B, 303
Tank	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A

Table 3.3.2-11-IP3: Fire Protection – Water								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Tank	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	Aboveground Steel Tanks	VII.H1-11 (A-95)	3.3.1-40	C
Tank	Pressure boundary	Carbon steel	Concrete (ext)	Loss of material	Aboveground Steel Tanks	--	--	G
Tank	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Fire Water System	VII.G-24 (A-33)	3.3.1-68	B, 303
Thermowell	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Thermowell	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Fire Water System	VII.G-24 (A-33)	3.3.1-68	B, 303
Tubing	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Tubing	Pressure boundary	Copper alloy	Treated water (int)	Loss of material	Fire Water System	VII.G-12 (A-45)	3.3.1-70	B, 303
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Soil (ext)	Loss of material	Buried Piping and Tanks Inspection	VII.G-25 (A-01)	3.3.1-19	A
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Fire Water System	VII.G-24 (A-33)	3.3.1-68	B, 303

Table 3.3.2-11-IP3: Fire Protection – Water								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Valve body	Pressure boundary	Copper alloy	Treated water (int)	Loss of material	Fire Water System	VII.G-12 (A-45)	3.3.1-70	B, 303
Valve body	Pressure boundary	Copper alloy > 15% Zn	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Valve body	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Fire Water System	VII.G-12 (A-45)	3.3.1-70	B, 303
Valve body	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Selective Leaching	VII.G-13 (A-47)	3.3.1-84	A, 303
Valve body	Pressure boundary	Gray cast iron	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Gray cast iron	Soil (ext)	Loss of material	Buried Piping and Tanks Inspection	VII.G-25 (A-01)	3.3.1-19	A
Valve body	Pressure boundary	Gray cast iron	Soil (ext)	Loss of material	Selective Leaching	VII.G-15 (A-02)	3.3.1-85	A
Valve body	Pressure boundary	Gray cast iron	Treated water (int)	Loss of material	Fire Water System	VII.G-24 (A-33)	3.3.1-68	B, 303
Valve body	Pressure boundary	Gray cast iron	Treated water (int)	Loss of material	Selective Leaching	VII.G-14 (A-51)	3.3.1-85	A, 303

**Table 3.3.2-12-IP2
Fire Protection – CO2, Halon, and RCP Oil Collection Systems
Summary of Aging Management Review**

Table 3.3.2-12-IP2: Fire Protection – CO2, Halon, and RCP Oil Collection Systems								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Boric Acid Corrosion Prevention	VII.I-2 (A-102)	3.3.1-89	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Drain pan	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Drain pan	Pressure boundary	Stainless steel	Lube oil (int)	Loss of material	One-Time Inspection	VII.G-18 (AP-59)	3.3.1-33	E
Flame arrestor	Flow control	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Flame arrestor	Flow control	Copper alloy	Air – indoor (int)	None	None	--	--	G
Flex hose	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Flex hose	Pressure boundary	Stainless steel	Lube oil (int)	Loss of material	One-Time Inspection	VII.G-18 (AP-59)	3.3.1-33	E

Table 3.3.2-12-IP2: Fire Protection – CO2, Halon, and RCP Oil Collection Systems								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Nozzle	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Nozzle	Pressure boundary	Copper alloy	Air – indoor (int)	None	None	--	--	G
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Boric Acid Corrosion Prevention	VII.I-10 (A-79)	3.3.1-89	A
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Fire Protection	VII.I-8 (A-77)	3.3.1-58	E
Piping	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	Fire Protection	V.A-19 (E-29)	3.2.1-32	E
Piping	Pressure boundary	Carbon steel	Gas (int)	None	None	VII.J-23 (AP-6)	3.3.1-97	A
Piping	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	One-Time Inspection	VII.G-26 (A-83)	3.3.1-15	E
Tank	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Fire Protection	VII.I-8 (A-77)	3.3.1-58	E
Tank	Pressure boundary	Carbon steel	Gas (int)	None	None	VII.J-23 (AP-6)	3.3.1-97	A
Tank	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	One-Time Inspection	VII.G-27 (A-82)	3.3.1-16	E

Table 3.3.2-12-IP2: Fire Protection – CO2, Halon, and RCP Oil Collection Systems								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Tubing	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Tubing	Pressure boundary	Copper alloy	Gas (int)	None	None	VII.J-4 (AP-9)	3.3.1-97	A
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Fire Protection	VII.I-8 (A-77)	3.3.1-58	E
Valve body	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	Fire Protection	V.A-19 (E-29)	3.2.1-32	E
Valve body	Pressure boundary	Carbon steel	Gas (int)	None	None	VII.J-23 (AP-6)	3.3.1-97	A
Valve body	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	One-Time Inspection	VII.G-26 (A-83)	3.3.1-15	E

**Table 3.3.2-12-IP3
Fire Protection – CO2, Halon, and RCP Oil Collection Systems
Summary of Aging Management Review**

Table 3.3.2-12-IP3: Fire Protection – CO2, Halon, and RCP Oil Collection Systems								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Boric Acid Corrosion Prevention	VII.I-2 (A-102)	3.3.1-89	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Drain pan	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Drain pan	Pressure boundary	Stainless steel	Lube oil (int)	Loss of material	One-Time Inspection	VII.G-18 (AP-59)	3.3.1-33	E
Filter	Filtration	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Filter	Filtration	Copper alloy	Air – indoor (int)	None	None	--	--	G
Filter housing	Pressure boundary	Aluminum	Air – indoor (ext)	None	None	V.F-2 (EP-3)	3.2.1-50	C
Filter housing	Pressure boundary	Aluminum	Air – indoor (int)	None	None	V.F-2 (EP-3)	3.2.1-50	C

Table 3.3.2-12-IP3: Fire Protection – CO2, Halon, and RCP Oil Collection Systems								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Flame arrestor	Flow control	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Flame arrestor	Flow control	Copper alloy	Air – indoor (int)	None	None	--	--	G
Flex hose	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Flex hose	Pressure boundary	Stainless steel	Lube oil (int)	Loss of material	One-Time Inspection	VII.G-18 (AP-59)	3.3.1-33	E
Heat exchanger (tubes)	Pressure boundary	Copper alloy	Gas (ext)	None	None	VII.J-4 (AP-9)	3.3.1-97	C
Heat exchanger (tubes)	Pressure boundary	Copper alloy	Gas (int)	None	None	VII.J-4 (AP-9)	3.3.1-97	C
Nozzle	Pressure boundary	Aluminum	Air – indoor (ext)	None	None	V.F-2 (EP-3)	3.2.1-50	C
Nozzle	Pressure boundary	Aluminum	Air – indoor (int)	None	None	V.F-2 (EP-3)	3.2.1-50	C
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Boric Acid Corrosion Prevention	VII.I-10 (A-79)	3.3.1-89	A
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Fire Protection	VII.I-8 (A-77)	3.3.1-58	E

Table 3.3.2-12-IP3: Fire Protection – CO2, Halon, and RCP Oil Collection Systems								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	Fire Protection	V.A-19 (E-29)	3.2.1-32	E
Piping	Pressure boundary	Carbon steel	Gas (int)	None	None	VII.J-23 (AP-6)	3.3.1-97	A
Piping	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	One-Time Inspection	VII.G-26 (A-83)	3.3.1-15	E
Tank	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Fire Protection	VII.I-8 (A-77)	3.3.1-58	E
Tank	Pressure boundary	Carbon steel	Gas (int)	None	None	VII.J-23 (AP-6)	3.3.1-97	A
Tank	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	One-Time Inspection	VII.G-27 (A-82)	3.3.1-16	E
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Fire Protection	VII.I-8 (A-77)	3.3.1-58	E
Valve body	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	Fire Protection	V.A-19 (E-29)	3.2.1-32	E
Valve body	Pressure boundary	Carbon steel	Gas (int)	None	None	VII.J-23 (AP-6)	3.3.1-97	A
Valve body	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	One-Time Inspection	VII.G-26 (A-83)	3.3.1-15	E

**Table 3.3.2-13-IP2
Fuel Oil Systems
Summary of Aging Management Review**

Table 3.3.2-13-IP2: Fuel Oil Systems								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Carbon steel	Soil (ext)	Loss of material	Buried Piping and Tanks Inspection	VII.H1-9 (A-01)	3.3.1-19	C
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Filter housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Filter housing	Pressure boundary	Carbon steel	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-10 (A-30)	3.3.1-20	B, 316
Flow element	Pressure boundary Flow control	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Flow element	Pressure boundary Flow control	Carbon steel	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-10 (A-30)	3.3.1-20	B, 316
Heat exchanger (tubes)	Heat transfer	Carbon steel	Air – indoor (ext)	Fouling	Periodic Surveillance and Preventive Maintenance	--	--	G

Table 3.3.2-13-IP2: Fuel Oil Systems								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Heat exchanger (tubes)	Heat transfer	Carbon steel	Fuel oil (int)	Fouling	Diesel Fuel Monitoring	--	--	G
Heat exchanger (tubes)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F1-10 (AP-41)	3.3.1-59	C
Heat exchanger (tubes)	Pressure boundary	Carbon steel	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-10 (A-30)	3.3.1-20	B, 316
Heater housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Heater housing	Pressure boundary	Carbon steel	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-10 (A-30)	3.3.1-20	B, 316
Orifice	Pressure boundary Flow control	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Orifice	Pressure boundary Flow control	Carbon steel	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-10 (A-30)	3.3.1-20	B, 316
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	VII.H1-8 (A-24)	3.3.1-60	A

Table 3.3.2-13-IP2: Fuel Oil Systems								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Carbon steel	Concrete (ext)	None	None	VII.J-21 (AP-3)	3.3.1-96	A
Piping	Pressure boundary	Carbon steel	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-10 (A-30)	3.3.1-20	B, 316
Piping	Pressure boundary	Carbon steel	Fuel oil (int)	Loss of material	Fire Protection Diesel Fuel Monitoring	VII.G-21 (A-28)	3.3.1-64	A
Piping	Pressure boundary	Carbon steel	Soil (ext)	Loss of material	Buried Piping and Tanks Inspection	VII.H1-9 (A-01)	3.3.1-19	A
Pump casing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Pump casing	Pressure boundary	Carbon steel	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-10 (A-30)	3.3.1-20	B, 316
Pump casing	Pressure boundary	Copper alloy	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-3 (AP-44)	3.3.1-32	B, 316
Strainer	Filtration	Carbon steel	Fuel oil (ext)	Loss of material	Diesel Fuel Monitoring	VII.HI-10 (A-30)	3.3.1-20	B, 316
Strainer	Filtration	Carbon steel	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-10 (A-30)	3.3.1-20	B, 316
Strainer	Filtration	Stainless steel	Fuel oil (ext)	Loss of material	Diesel Fuel Monitoring	VII.H1-6 (AP-54)	3.3.1-32	B, 316

Table 3.3.2-13-IP2: Fuel Oil Systems								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Strainer	Filtration	Stainless steel	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-6 (AP-54)	3.3.1-32	B, 316
Strainer housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Strainer housing	Pressure boundary	Carbon steel	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-10 (A-30)	3.3.1-20	B, 316
Tank	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Tank	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	Aboveground Steel Tanks	VII.H1-11 (A-95)	3.3.1-40	A
Tank	Pressure boundary	Carbon steel	Concrete (ext)	Loss of material	Aboveground Steel Tanks	--	--	G
Tank	Pressure boundary	Carbon steel	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-10 (A-30)	3.3.1-20	B, 316
Tank	Pressure boundary	Carbon steel	Soil (ext)	Loss of material	Buried Piping and Tanks Inspection	VIII.E-1 (S-01)	3.4.1-11	C
Tank	Pressure boundary	Stainless steel	Air – outdoor (ext)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 317
Tank	Pressure boundary	Stainless steel	Fuel oil (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.H1-6 (AP-54)	3.3.1-32	E, 317

Table 3.3.2-13-IP2: Fuel Oil Systems								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Tubing	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Tubing	Pressure boundary	Copper alloy	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-3 (AP-44)	3.3.1-32	B, 316
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Tubing	Pressure boundary	Stainless steel	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-6 (AP-54)	3.3.1-32	B, 316
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	VII.H1-8 (A-24)	3.3.1-60	A
Valve body	Pressure boundary	Carbon steel	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-10 (A-30)	3.3.1-20	B, 316
Valve body	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Valve body	Pressure boundary	Copper alloy	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-3 (AP-44)	3.3.1-32	B, 316
Valve body	Pressure boundary	Copper alloy > 15% Zn	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C

Table 3.3.2-13-IP2: Fuel Oil Systems								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Copper alloy > 15% Zn	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-3 (AP-44)	3.3.1-32	B, 316
Valve body	Pressure boundary	Gray cast iron	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Gray cast iron	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-10 (A-30)	3.3.1-20	B, 316
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	--	--	G, 317
Valve body	Pressure boundary	Stainless steel	Air – outdoor (ext)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 317
Valve body	Pressure boundary	Stainless steel	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-6 (AP-54)	3.3.1-32	B, 316
Valve body	Pressure boundary	Stainless steel	Fuel oil (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.H1-6 (AP-54)	3.3.1-32	E, 317

**Table 3.3.2-13-IP3
Fuel Oil Systems
Summary of Aging Management Review**

Table 3.3.2-13-IP3: Fuel Oil Systems								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Carbon steel	Soil (ext)	Loss of material	Buried Piping and Tanks Inspection	VII.H1-9 (A-01)	3.3.1-19	C
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Filter housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Filter housing	Pressure boundary	Carbon steel	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-10 (A-30)	3.3.1-20	B, 316
Flame arrestor	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Flame arrestor	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.A-19 (E-29)	3.2.1-32	E
Level gauge	Pressure boundary	Glass	Air – indoor (ext)	None	None	VII.J-8 (AP-14)	3.3.1-93	A

Table 3.3.2-13-IP3: Fuel Oil Systems								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Level gauge	Pressure boundary	Glass	Fuel oil (int)	None	None	VII.J-9 (AP-49)	3.3.1-93	A
Level gauge	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Level gauge	Pressure boundary	Carbon steel	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-10 (A-30)	3.3.1-20	B, 316
Level gauge	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Level gauge	Pressure boundary	Stainless steel	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-6 (AP-54)	3.3.1-32	B, 316
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	VII.H1-8 (A-24)	3.3.1-60	A
Piping	Pressure boundary	Carbon steel	Concrete (ext)	None	None	VII.J-21 (AP-3)	3.3.1-96	A
Piping	Pressure boundary	Carbon steel	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-10 (A-30)	3.3.1-20	B, 316
Piping	Pressure boundary	Carbon steel	Fuel oil (int)	Loss of material	Fire Protection Diesel Fuel Monitoring	VII.G-21 (A-28)	3.3.1-64	A

Table 3.3.2-13-IP3: Fuel Oil Systems								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Carbon steel	Soil (ext)	Loss of material	Buried Piping and Tanks Inspection	VII.H1-9 (A-01)	3.3.1-19	A
Pump casing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Pump casing	Pressure boundary	Carbon steel	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-10 (A-30)	3.3.1-20	B, 316
Strainer	Filtration	Stainless steel	Fuel oil (ext)	Loss of material	Diesel Fuel Monitoring	VII.H1-6 (AP-54)	3.3.1-32	B, 316
Strainer	Filtration	Stainless steel	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-6 (AP-54)	3.3.1-32	B, 316
Strainer housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Strainer housing	Pressure boundary	Carbon steel	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-10 (A-30)	3.3.1-20	B, 316
Tank	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Tank	Pressure boundary	Carbon steel	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-10 (A-30)	3.3.1-20	B, 316
Tank	Pressure boundary	Carbon steel	Soil (ext)	Loss of material	Buried Piping and Tanks Inspection	VIII.E-1 (S-01)	3.4.1-11	C

Table 3.3.2-13-IP3: Fuel Oil Systems								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Tubing	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Tubing	Pressure boundary	Copper alloy	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-3 (AP-44)	3.3.1-32	B, 316
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Tubing	Pressure boundary	Stainless steel	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-6 (AP-54)	3.3.1-32	B, 316
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	VII.H1-8 (A-24)	3.3.1-60	A
Valve body	Pressure boundary	Carbon steel	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-10 (A-30)	3.3.1-20	B, 316
Valve body	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Valve body	Pressure boundary	Copper alloy	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-3 (AP-44)	3.3.1-32	B, 316
Valve body	Pressure boundary	Copper alloy > 15% Zn	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C

Table 3.3.2-13-IP3: Fuel Oil Systems								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Copper alloy > 15% Zn	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-3 (AP-44)	3.3.1-32	B, 316
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-6 (AP-54)	3.3.1-32	B, 316

**Table 3.3.2-14-IP2
Emergency Diesel Generators
Summary of Aging Management Review**

Table 3.3.2-14-IP2: Emergency Diesel Generators								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Blower housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Blower housing	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.B-1 (E-25)	3.2.1-32	E
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	Bolting Integrity	VII.I-1 (AP-28)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Duct	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Duct	Pressure boundary	Stainless steel	Air – indoor (int)	None	None	--	--	G
Duct flexible connection	Pressure boundary	Elastomer	Air – indoor (ext)	Change in material properties	Periodic Surveillance and Preventive Maintenance	VII.F1-7 (A-17)	3.3.1-11	E

Table 3.3.2-14-IP2: Emergency Diesel Generators								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Duct flexible connection	Pressure boundary	Elastomer	Air – indoor (ext)	Cracking	Periodic Surveillance and Preventive Maintenance	VII.F1-7 (A-17)	3.3.1-11	E
Duct flexible connection	Pressure boundary	Elastomer	Air – indoor (int)	Change in material properties	Periodic Surveillance and Preventive Maintenance	VII.F1-7 (A-17)	3.3.1-11	E
Duct flexible connection	Pressure boundary	Elastomer	Air – indoor (int)	Cracking	Periodic Surveillance and Preventive Maintenance	VII.F1-7 (A-17)	3.3.1-11	E
Expansion joint	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Expansion joint	Pressure boundary	Stainless steel	Exhaust gas (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	H
Expansion joint	Pressure boundary	Stainless steel	Exhaust gas (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.H2-2 (A-27)	3.3.1-18	E
Filter housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Filter housing	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.B-1 (E-25)	3.2.1-32	E
Filter housing	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.H2-20 (AP-30)	3.3.1-14	B, 316

Table 3.3.2-14-IP2: Emergency Diesel Generators								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Heat exchanger (bonnet)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.H2-3 (AP-41)	3.3.1-59	A
Heat exchanger (bonnet)	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-5 (A-64)	3.3.1-77	C
Heat exchanger (fins)	Heat transfer	Aluminum	Air – indoor (ext)	Fouling	Periodic Surveillance and Preventive Maintenance	--	--	H
Heat exchanger (housing)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.H2-3 (AP-41)	3.3.1-59	A
Heat exchanger (housing)	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.B-1 (E-25)	3.2.1-32	E
Heat exchanger (shell)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.H2-3 (AP-41)	3.3.1-59	A
Heat exchanger (shell)	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.H2-5 (AP-39)	3.3.1-21	B, 316
Heat exchanger (shell)	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-1 (A-63)	3.3.1-48	D

Table 3.3.2-14-IP2: Emergency Diesel Generators								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Heat exchanger (tubes)	Heat transfer	Copper alloy > 15% Zn	Air – indoor (ext)	Fouling	Periodic Surveillance and Preventive Maintenance	--	--	G
Heat exchanger (tubes)	Heat transfer	Copper alloy > 15% Zn	Treated water (int)	Fouling	Water Chemistry Control – Closed Cooling Water	VII.C2-2 (AP-80)	3.3.1-52	D
Heat exchanger (tubes)	Heat transfer	Titanium	Lube oil (ext)	Fouling	Oil Analysis	--	--	F, 316
Heat exchanger (tubes)	Heat transfer	Titanium	Raw water (int)	Fouling	Service Water Integrity	--	--	F
Heat exchanger (tubes)	Heat transfer	Titanium	Treated water (ext)	Fouling	Water Chemistry Control – Closed Cooling Water	--	--	F
Heat exchanger (tubes)	Pressure boundary	Copper alloy > 15% Zn	Air – indoor (ext)	Loss of material – wear	Periodic Surveillance and Preventive Maintenance	--	--	H
Heat exchanger (tubes)	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Selective Leaching	VII.H2-12 (AP-43)	3.3.1-84	A, 307
Heat exchanger (tubes)	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.E1-2 (AP-34)	3.3.1-51	D

Table 3.3.2-14-IP2: Emergency Diesel Generators								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Heat exchanger (tubes)	Pressure boundary	Titanium	Lube oil (ext)	Loss of material	Oil Analysis	--	--	F
Heat exchanger (tubes)	Pressure boundary	Titanium	Lube oil (ext)	Loss of material – wear	Service Water Integrity	--	--	F
Heat exchanger (tubes)	Pressure boundary	Titanium	Raw water (int)	Loss of material	Service Water Integrity	--	--	F
Heat exchanger (tubes)	Pressure boundary	Titanium	Treated water (ext)	Loss of material	Water Chemistry Control – Closed Cooling Water	--	--	F
Heat exchanger (tubes)	Pressure boundary	Titanium	Treated water (ext)	Loss of material – wear	Service Water Integrity	--	--	F
Heater housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Heater housing	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.H2-20 (AP-30)	3.3.1-14	B, 316
Heater housing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.H2-23 (A-25)	3.3.1-47	B

Table 3.3.2-14-IP2: Emergency Diesel Generators								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Lubricator housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Lubricator housing	Pressure boundary	Carbon steel	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.H2-21 (A-23)	3.3.1-71	E
Orifice	Pressure boundary Flow control	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Orifice	Pressure boundary Flow control	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.H2-23 (A-25)	3.3.1-47	B
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-9 (A-78)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.H2-21 (A-23)	3.3.1-71	E
Piping	Pressure boundary	Carbon steel	Exhaust gas (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	H
Piping	Pressure boundary	Carbon steel	Exhaust gas (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.H2-2 (A-27)	3.3.1-18	E

Table 3.3.2-14-IP2: Emergency Diesel Generators								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.H2-20 (AP-30)	3.3.1-14	B, 316
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.H2-23 (A-25)	3.3.1-47	B
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Piping	Pressure boundary	Stainless steel	Condensation (int)	Loss of material	One-Time Inspection	VII.F1-1 (A-09)	3.3.1-27	E
Piping	Pressure boundary	Stainless steel	Lube oil (int)	Cracking	Oil Analysis	--	--	H
Piping	Pressure boundary	Stainless steel	Lube oil (int)	Loss of material	Oil Analysis	VII.H2-17 (AP-59)	3.3.1-33	B, 316
Piping	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Closed Cooling Water	VII.C2-11 (AP-60)	3.3.1-46	D
Piping	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-10 (A-52)	3.3.1-50	D
Pump casing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A

Table 3.3.2-14-IP2: Emergency Diesel Generators								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Pump casing	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.H2-20 (AP-30)	3.3.1-14	B, 316
Sight glass	Pressure boundary	Glass	Air – indoor (ext)	None	None	VII.J-8 (AP-14)	3.3.1-93	A
Sight glass	Pressure boundary	Glass	Treated water (int)	None	None	VII.J-11 (AP-50)	3.3.1-93	A, 303
Silencer	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-9 (A-78)	3.3.1-58	A
Silencer	Pressure boundary	Carbon steel	Exhaust gas (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	H
Silencer	Pressure boundary	Carbon steel	Exhaust gas (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.H2-2 (A-27)	3.3.1-18	E
Strainer	Filtration	Stainless steel	Condensation (ext)	Loss of material	One-Time Inspection	VII.F1-1 (A-09)	3.3.1-27	E
Strainer	Filtration	Stainless steel	Condensation (int)	Loss of material	One-Time Inspection	VII.F1-1 (A-09)	3.3.1-27	E
Strainer	Filtration	Stainless steel	Lube oil (ext)	Cracking	Oil Analysis	--	--	H
Strainer	Filtration	Stainless steel	Lube oil (ext)	Loss of material	Oil Analysis	VII.H2-17 (AP-59)	3.3.1-33	B, 316

Table 3.3.2-14-IP2: Emergency Diesel Generators								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Strainer	Filtration	Stainless steel	Lube oil (int)	Cracking	Oil Analysis	--	--	H
Strainer	Filtration	Stainless steel	Lube oil (int)	Loss of material	Oil Analysis	VII.H2-17 (AP-59)	3.3.1-33	B, 316
Strainer housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Strainer housing	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.H2-20 (AP-30)	3.3.1-14	B, 316
Strainer housing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Strainer housing	Pressure boundary	Stainless steel	Condensation (int)	Loss of material	One-Time Inspection	VII.F1-1 (A-09)	3.3.1-27	E
Tank	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Tank	Pressure boundary	Carbon steel	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.H2-21 (A-23)	3.3.1-71	E
Tank	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.H2-23 (A-25)	3.3.1-47	B
Tank	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A

Table 3.3.2-14-IP2: Emergency Diesel Generators								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Tank	Pressure boundary	Stainless steel	Condensation (int)	Loss of material	One-Time Inspection	V.A-26 (EP-53)	3.2.1-8	E
Thermowell	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Thermowell	Pressure boundary	Stainless steel	Lube oil (int)	Cracking	Oil Analysis	--	--	H
Thermowell	Pressure boundary	Stainless steel	Lube oil (int)	Loss of material	Oil Analysis	VII.H2-17 (AP-59)	3.3.1-33	B, 316
Thermowell	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Closed Cooling Water	VII.C2-11 (AP-60)	3.3.1-46	D
Thermowell	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-10 (A-52)	3.3.1-50	D
Trap	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Trap	Pressure boundary	Carbon steel	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.H2-21 (A-23)	3.3.1-71	E
Tubing	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C

Table 3.3.2-14-IP2: Emergency Diesel Generators								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Tubing	Pressure boundary	Copper alloy	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.G-9 (AP-78)	3.3.1-28	E
Tubing	Pressure boundary	Copper alloy	Lube oil (int)	Loss of material	Oil Analysis	VII.H2-10 (AP-47)	3.3.1-26	B, 316
Tubing	Pressure boundary	Copper alloy	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.H2-8 (AP-12)	3.3.1-51	B
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Tubing	Pressure boundary	Stainless steel	Condensation (int)	Loss of material	One-Time Inspection	VII.F1-1 (A-09)	3.3.1-27	E
Tubing	Pressure boundary	Stainless steel	Lube oil (int)	Cracking	Oil Analysis	--	--	H
Tubing	Pressure boundary	Stainless steel	Lube oil (int)	Loss of material	Oil Analysis	VII.H2-17 (AP-59)	3.3.1-33	B, 316
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Closed Cooling Water	VII.C2-11 (AP-60)	3.3.1-46	D
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-10 (A-52)	3.3.1-50	D

Table 3.3.2-14-IP2: Emergency Diesel Generators								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.H2-21 (A-23)	3.3.1-71	E
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.H2-23 (A-25)	3.3.1-47	B
Valve body	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Valve body	Pressure boundary	Copper alloy	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.G-9 (AP-78)	3.3.1-28	E
Valve body	Pressure boundary	Copper alloy	Lube oil (int)	Loss of material	Oil Analysis	VII.H2-10 (AP-47)	3.3.1-26	B, 316
Valve body	Pressure boundary	Copper alloy	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.H2-8 (AP-12)	3.3.1-51	B
Valve body	Pressure boundary	Copper alloy > 15% Zn	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Valve body	Pressure boundary	Copper alloy > 15% Zn	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.G-9 (AP-78)	3.3.1-28	E

Table 3.3.2-14-IP2: Emergency Diesel Generators								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Copper alloy > 15% Zn	Lube oil (int)	Loss of material	Oil Analysis	VII.H2-10 (AP-47)	3.3.1-26	B, 316
Valve body	Pressure boundary	Copper alloy > 15% Zn	Treated water (ext)	Loss of material	Selective Leaching	VII.H2-12 (AP-43)	3.3.1-84	A, 307
Valve body	Pressure boundary	Copper alloy > 15% Zn	Treated water (ext)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.H2-8 (AP-12)	3.3.1-51	B
Valve body	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Selective Leaching	VII.H2-13 (A-47)	3.3.1-84	A, 303
Valve body	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305
Valve body	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Selective Leaching	VII.H2-12 (AP-43)	3.3.1-84	A, 307
Valve body	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.H2-8 (AP-12)	3.3.1-51	B
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Condensation (int)	Loss of material	One-Time Inspection	VII.F1-1 (A-09)	3.3.1-27	E

Table 3.3.2-14-IP2: Emergency Diesel Generators								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Stainless steel	Exhaust gas (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	H
Valve body	Pressure boundary	Stainless steel	Exhaust gas (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.H2-2 (A-27)	3.3.1-18	E
Valve body	Pressure boundary	Stainless steel	Lube oil (int)	Cracking	Oil Analysis	--	--	H
Valve body	Pressure boundary	Stainless steel	Lube oil (int)	Loss of material	Oil Analysis	VII.H2-17 (AP-59)	3.3.1-33	B, 316
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Closed Cooling Water	VII.C2-11 (AP-60)	3.3.1-46	D
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-10 (A-52)	3.3.1-50	D

**Table 3.3.2-14-IP3
Emergency Diesel Generators
Summary of Aging Management Review**

Table 3.3.2-14-IP3: Emergency Diesel Generators								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Blower housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Blower housing	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.B-1 (E-25)	3.2.1-32	E
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	Bolting Integrity	VII.I-1 (AP-28)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Dryer	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Dryer	Pressure boundary	Carbon steel	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.H2-21 (A-23)	3.3.1-71	E
Duct	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A

Table 3.3.2-14-IP3: Emergency Diesel Generators								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Duct	Pressure boundary	Stainless steel	Air – indoor (int)	None	None	--	--	G
Duct flexible connection	Pressure boundary	Elastomer	Air – indoor (ext)	Change in material properties	Periodic Surveillance and Preventive Maintenance	VII.F1-7 (A-17)	3.3.1-11	E
Duct flexible connection	Pressure boundary	Elastomer	Air – indoor (ext)	Cracking	Periodic Surveillance and Preventive Maintenance	VII.F1-7 (A-17)	3.3.1-11	E
Duct flexible connection	Pressure boundary	Elastomer	Air – indoor (int)	Change in material properties	Periodic Surveillance and Preventive Maintenance	VII.F1-7 (A-17)	3.3.1-11	E
Duct flexible connection	Pressure boundary	Elastomer	Air – indoor (int)	Cracking	Periodic Surveillance and Preventive Maintenance	VII.F1-7 (A-17)	3.3.1-11	E
Expansion joint	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Expansion joint	Pressure boundary	Stainless steel	Exhaust gas (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	H
Expansion joint	Pressure boundary	Stainless steel	Exhaust gas (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.H2-2 (A-27)	3.3.1-18	E
Filter housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A

Table 3.3.2-14-IP3: Emergency Diesel Generators								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Filter housing	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.A-19 (E-29)	3.2.1-32	E
Filter housing	Pressure boundary	Carbon steel	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.H2-21 (A-23)	3.3.1-71	E
Filter housing	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.H2-20 (AP-30)	3.3.1-14	B, 316
Heat exchanger (bonnet)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.H2-3 (AP-41)	3.3.1-59	A
Heat exchanger (bonnet)	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-5 (A-64)	3.3.1-77	C
Heat exchanger (fins)	Heat transfer	Aluminum	Air – indoor (ext)	Fouling	Periodic Surveillance and Preventive Maintenance	--	--	H
Heat exchanger (housing)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.H2-3 (AP-41)	3.3.1-59	A
Heat exchanger (housing)	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.B-1 (E-25)	3.2.1-32	E

Table 3.3.2-14-IP3: Emergency Diesel Generators								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Heat exchanger (shell)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.H2-3 (AP-41)	3.3.1-59	A
Heat exchanger (shell)	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.H2-5 (AP-39)	3.3.1-21	B, 316
Heat exchanger (shell)	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-1 (A-63)	3.3.1-48	D
Heat exchanger (tubes)	Heat transfer	Copper alloy > 15% Zn	Air – indoor (ext)	Fouling	Periodic Surveillance and Preventive Maintenance	--	--	G
Heat exchanger (tubes)	Heat transfer	Copper alloy > 15% Zn	Lube oil (ext)	Fouling	Oil Analysis	V.A-12 (EP-47)	3.2.1-9	B, 316
Heat exchanger (tubes)	Heat transfer	Copper alloy > 15% Zn	Raw water (int)	Fouling	Service Water Integrity	VII.C1-6 (A-72)	3.3.1-83	C
Heat exchanger (tubes)	Heat transfer	Copper alloy > 15% Zn	Treated water (ext)	Fouling	Water Chemistry Control – Closed Cooling Water	VII.C2-2 (AP-80)	3.3.1-52	D
Heat exchanger (tubes)	Heat transfer	Copper alloy > 15% Zn	Treated water (int)	Fouling	Water Chemistry Control – Closed Cooling Water	VII.C2-2 (AP-80)	3.3.1-52	D

Table 3.3.2-14-IP3: Emergency Diesel Generators								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Heat exchanger (tubes)	Pressure boundary	Copper alloy > 15% Zn	Air – indoor (ext)	Loss of material – wear	Periodic Surveillance and Preventive Maintenance	--	--	H
Heat exchanger (tubes)	Pressure boundary	Copper alloy > 15% Zn	Lube oil (ext)	Loss of material	Oil Analysis	VII.H2-10 (AP-47)	3.3.1-26	D, 316
Heat exchanger (tubes)	Pressure boundary	Copper alloy > 15% Zn	Lube oil (ext)	Loss of material – wear	Service Water Integrity	--	--	H
Heat exchanger (tubes)	Pressure boundary	Copper alloy > 15% Zn	Raw water (int)	Loss of material	Selective Leaching	VII.H2-12 (AP-43)	3.3.1-84	A, 307
Heat exchanger (tubes)	Pressure boundary	Copper alloy > 15% Zn	Raw water (int)	Loss of material	Service Water Integrity	VII.H2-11 (AP-45)	3.3.1-80	C
Heat exchanger (tubes)	Pressure boundary	Copper alloy > 15% Zn	Treated water (ext)	Loss of material	Selective Leaching	VII.H2-12 (AP-43)	3.3.1-84	A, 307
Heat exchanger (tubes)	Pressure boundary	Copper alloy > 15% Zn	Treated water (ext)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.E1-2 (AP-34)	3.3.1-51	D
Heat exchanger (tubes)	Pressure boundary	Copper alloy > 15% Zn	Treated water (ext)	Loss of material – wear	Service Water Integrity	--	--	H

Table 3.3.2-14-IP3: Emergency Diesel Generators								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Heat exchanger (tubes)	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Selective Leaching	VII.H2-12 (AP-43)	3.3.1-84	A, 307
Heat exchanger (tubes)	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.E1-2 (AP-34)	3.3.1-51	D
Heater housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Heater housing	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.H2-20 (AP-30)	3.3.1-14	B, 316
Heater housing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.H2-23 (A-25)	3.3.1-47	B
Lubricator housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Lubricator housing	Pressure boundary	Carbon steel	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.H2-21 (A-23)	3.3.1-71	E
Orifice	Pressure boundary Flow control	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A

Table 3.3.2-14-IP3: Emergency Diesel Generators								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Orifice	Pressure boundary Flow control	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.H2-23 (A-25)	3.3.1-47	B
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-9 (A-78)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.H2-21 (A-23)	3.3.1-71	E
Piping	Pressure boundary	Carbon steel	Exhaust gas (int)	Cracking – fatigue	TCAA – metal fatigue	--	--	H
Piping	Pressure boundary	Carbon steel	Exhaust gas (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.H2-2 (A-27)	3.3.1-18	E
Piping	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.H2-20 (AP-30)	3.3.1-14	B, 316
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.H2-23 (A-25)	3.3.1-47	B
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A

Table 3.3.2-14-IP3: Emergency Diesel Generators								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Stainless steel	Condensation (int)	Loss of material	One-Time Inspection	VII.F1-1 (A-09)	3.3.1-27	E
Piping	Pressure boundary	Stainless steel	Lube oil (int)	Cracking	Oil Analysis	--	--	H
Piping	Pressure boundary	Stainless steel	Lube oil (int)	Loss of material	Oil Analysis	VII.H2-17 (AP-59)	3.3.1-33	B, 316
Piping	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Closed Cooling Water	VII.C2-11 (AP-60)	3.3.1-46	D
Piping	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-10 (A-52)	3.3.1-50	D
Pump casing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Pump casing	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.H2-20 (AP-30)	3.3.1-14	B, 316
Sight glass	Pressure boundary	Glass	Air – indoor (ext)	None	None	VII.J-8 (AP-14)	3.3.1-93	A
Sight glass	Pressure boundary	Glass	Treated water (int)	None	None	VII.J-11 (AP-50)	3.3.1-93	A, 303
Silencer	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A

Table 3.3.2-14-IP3: Emergency Diesel Generators								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Silencer	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.A-19 (E-29)	3.2.1-32	E
Silencer	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-9 (A-78)	3.3.1-58	A
Silencer	Pressure boundary	Carbon steel	Exhaust gas (int)	Cracking – fatigue	TLLA – metal fatigue	--	--	H
Silencer	Pressure boundary	Carbon steel	Exhaust gas (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.H2-2 (A-27)	3.3.1-18	E
Strainer	Filtration	Stainless steel	Condensation (ext)	Loss of material	One-Time Inspection	VII.F1-1 (A-09)	3.3.1-27	E
Strainer	Filtration	Stainless steel	Condensation (int)	Loss of material	One-Time Inspection	VII.F1-1 (A-09)	3.3.1-27	E
Strainer	Filtration	Stainless steel	Lube oil (ext)	Cracking	Oil Analysis	--	--	H
Strainer	Filtration	Stainless steel	Lube oil (ext)	Loss of material	Oil Analysis	VII.H2-17 (AP-59)	3.3.1-33	B, 316
Strainer	Filtration	Stainless steel	Lube oil (int)	Cracking	Oil Analysis	--	--	H
Strainer	Filtration	Stainless steel	Lube oil (int)	Loss of material	Oil Analysis	VII.H2-17 (AP-59)	3.3.1-33	B, 316

Table 3.3.2-14-IP3: Emergency Diesel Generators								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Strainer housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Strainer housing	Pressure boundary	Carbon steel	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.H2-21 (A-23)	3.3.1-71	E
Strainer housing	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.H2-20 (AP-30)	3.3.1-14	B, 316
Tank	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Tank	Pressure boundary	Carbon steel	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.H2-21 (A-23)	3.3.1-71	E
Tank	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.H2-23 (A-25)	3.3.1-47	B
Tank	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Tank	Pressure boundary	Stainless steel	Condensation (int)	Loss of material	One-Time Inspection	V.A-26 (EP-53)	3.2.1-8	E
Thermowell	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A

Table 3.3.2-14-IP3: Emergency Diesel Generators								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Thermowell	Pressure boundary	Stainless steel	Lube oil (int)	Cracking	Oil Analysis	--	--	H
Thermowell	Pressure boundary	Stainless steel	Lube oil (int)	Loss of material	Oil Analysis	VII.H2-17 (AP-59)	3.3.1-33	B, 316
Thermowell	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Closed Cooling Water	VII.C2-11 (AP-60)	3.3.1-46	D
Thermowell	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-10 (A-52)	3.3.1-50	D
Trap	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Trap	Pressure boundary	Carbon steel	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.H2-21 (A-23)	3.3.1-71	E
Tubing	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Tubing	Pressure boundary	Copper alloy	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.G-9 (AP-78)	3.3.1-28	E
Tubing	Pressure boundary	Copper alloy	Lube oil (int)	Loss of material	Oil Analysis	VII.H2-10 (AP-47)	3.3.1-26	B, 316

Table 3.3.2-14-IP3: Emergency Diesel Generators								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Tubing	Pressure boundary	Copper alloy	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.H2-8 (AP-12)	3.3.1-51	B
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Tubing	Pressure boundary	Stainless steel	Condensation (int)	Loss of material	One-Time Inspection	VII.F1-1 (A-09)	3.3.1-27	E
Tubing	Pressure boundary	Stainless steel	Lube oil (int)	Cracking	Oil Analysis	--	--	H
Tubing	Pressure boundary	Stainless steel	Lube oil (int)	Loss of material	Oil Analysis	VII.H2-17 (AP-59)	3.3.1-33	B, 316
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Closed Cooling Water	VII.C2-11 (AP-60)	3.3.1-46	D
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-10 (A-52)	3.3.1-50	D
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.H2-21 (A-23)	3.3.1-71	E

Table 3.3.2-14-IP3: Emergency Diesel Generators								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.H2-20 (AP-30)	3.3.1-14	B, 316
Valve body	Pressure boundary	Carbon steel	Treated water (ext)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.H2-23 (A-25)	3.3.1-47	B
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.H2-23 (A-25)	3.3.1-47	B
Valve body	Pressure boundary	Copper alloy > 15% Zn	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Valve body	Pressure boundary	Copper alloy > 15% Zn	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.G-9 (AP-78)	3.3.1-28	E
Valve body	Pressure boundary	Copper alloy > 15% Zn	Lube oil (int)	Loss of material	Oil Analysis	VII.H2-10 (AP-47)	3.3.1-26	B, 316
Valve body	Pressure boundary	Gray cast iron	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Gray cast iron	Lube oil (int)	Loss of material	Oil Analysis	VII.H2-20 (AP-30)	3.3.1-14	B, 316

Table 3.3.2-14-IP3: Emergency Diesel Generators								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Condensation (int)	Loss of material	One-Time Inspection	VII.F1-1 (A-09)	3.3.1-27	E
Valve body	Pressure boundary	Stainless steel	Lube oil (int)	Cracking	Oil Analysis	--	--	H
Valve body	Pressure boundary	Stainless steel	Lube oil (int)	Loss of material	Oil Analysis	VII.H2-17 (AP-59)	3.3.1-33	B, 316
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Closed Cooling Water	VII.C2-11 (AP-60)	3.3.1-46	D
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-10 (A-52)	3.3.1-50	D

**Table 3.3.2-15-IP2
Security Generator
Summary of Aging Management Review**

Table 3.3.2-15-IP2: Security Generator								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Filter housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Filter housing	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.A-19 (E-29)	3.2.1-32	E
Flexible bellows	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Flexible bellows	Pressure boundary	Stainless steel	Exhaust gas (int)	Cracking – fatigue	Periodic Surveillance and Preventive Maintenance	--	--	H
Flexible bellows	Pressure boundary	Stainless steel	Exhaust gas (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.H2-2 (A-27)	3.3.1-18	E
Heat exchanger (bonnet)	Pressure boundary	Copper alloy > 15% Zn	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C

Table 3.3.2-15-IP2: Security Generator								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Heat exchanger (bonnet)	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.E1-2 (AP-34)	3.3.1-51	D
Heat exchanger (fins)	Heat transfer	Aluminum	Air – indoor (ext)	Fouling	Periodic Surveillance and Preventive Maintenance	--	--	H
Heat exchanger (tubes)	Heat transfer	Copper alloy > 15% Zn	Air – indoor (ext)	Fouling	Periodic Surveillance and Preventive Maintenance	--	--	G
Heat exchanger (tubes)	Heat transfer	Copper alloy > 15% Zn	Treated water (int)	Fouling	Water Chemistry Control – Closed Cooling Water	VII.C2-2 (AP-80)	3.3.1-52	D
Heat exchanger (tubes)	Pressure boundary	Copper alloy > 15% Zn	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Heat exchanger (tubes)	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Selective Leaching	VII.H2-12 (AP-43)	3.3.1-84	A, 304
Heat exchanger (tubes)	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.E1-2 (AP-34)	3.3.1-51	D
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A

Table 3.3.2-15-IP2: Security Generator								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.A-19 (E-29)	3.2.1-32	E
Piping	Pressure boundary	Carbon steel	Exhaust gas (int)	Cracking – fatigue	Periodic Surveillance and Preventive Maintenance	--	--	H
Piping	Pressure boundary	Carbon steel	Exhaust gas (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.H2-2 (A-27)	3.3.1-18	E
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.H2-23 (A-25)	3.3.1-47	D
Silencer	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Silencer	Pressure boundary	Carbon steel	Exhaust gas (int)	Cracking – fatigue	Periodic Surveillance and Preventive Maintenance	--	--	H
Silencer	Pressure boundary	Carbon steel	Exhaust gas (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.H2-2 (A-27)	3.3.1-18	E
Turbocharger	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Turbocharger	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.A-19 (E-29)	3.2.1-32	E

Table 3.3.2-15-IP2: Security Generator								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Turbocharger	Pressure boundary	Carbon steel	Exhaust gas (int)	Cracking – fatigue	Periodic Surveillance and Preventive Maintenance	--	--	H
Turbocharger	Pressure boundary	Carbon steel	Exhaust gas (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.H2-2 (A-27)	3.3.1-18	E
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Exhaust gas (int)	Cracking – fatigue	Periodic Surveillance and Preventive Maintenance	--	--	H
Valve body	Pressure boundary	Carbon steel	Exhaust gas (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.H2-2 (A-27)	3.3.1-18	E

**Table 3.3.2-15-IP3
Security Generator
Summary of Aging Management Review**

Table 3.3.2-15-IP3: Security Generator								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Filter housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Filter housing	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.A-19 (E-29)	3.2.1-32	E
Flexible bellows	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Flexible bellows	Pressure boundary	Carbon steel	Exhaust gas (int)	Cracking – fatigue	Periodic Surveillance and Preventive Maintenance	--	--	H
Flexible bellows	Pressure boundary	Carbon steel	Exhaust gas (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.H2-2 (A-27)	3.3.1-18	E
Flexible connection	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Flexible connection	Pressure boundary	Stainless steel	Gas (int)	None	None	VII.J-19 (AP-22)	3.3.1-97	A
Heat exchanger (bonnet)	Pressure boundary	Copper alloy > 15% Zn	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Heat exchanger (bonnet)	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.E1-2 (AP-34)	3.3.1-51	D
Heat exchanger (fins)	Heat transfer	Aluminum	Air – indoor (ext)	Fouling	Periodic Surveillance and Preventive Maintenance	--	--	H
Heat exchanger (tubes)	Heat transfer	Copper alloy > 15% Zn	Air – indoor (ext)	Fouling	Periodic Surveillance and Preventive Maintenance	--	--	G
Heat exchanger (tubes)	Heat transfer	Copper alloy > 15% Zn	Treated water (int)	Fouling	Water Chemistry Control – Closed Cooling Water	VII.C2-2 (AP-80)	3.3.1-52	D
Heat exchanger (tubes)	Pressure boundary	Copper alloy > 15% Zn	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Heat exchanger (tubes)	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Selective Leaching	VII.H2-12 (AP-43)	3.3.1-84	A, 304

Table 3.3.2-15-IP3: Security Generator								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Heat exchanger (tubes)	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.E1-2 (AP-34)	3.3.1-51	D
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.A-19 (E-29)	3.2.1-32	E
Piping	Pressure boundary	Carbon steel	Exhaust gas (int)	Cracking – fatigue	Periodic Surveillance and Preventive Maintenance	--	--	H
Piping	Pressure boundary	Carbon steel	Exhaust gas (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.H2-2 (A-27)	3.3.1-18	E
Piping	Pressure boundary	Carbon steel	Gas (int)	None	None	VII.J-23 (AP-6)	3.3.1-97	A
Piping	Pressure boundary	Carbon steel	Soil (ext)	Loss of material	Buried Piping and Tanks Inspection	VII.C1-18 (A-01)	3.3.1-19	C
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.H2-23 (A-25)	3.3.1-47	D
Silencer	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A

Table 3.3.2-15-IP3: Security Generator								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Silencer	Pressure boundary	Carbon steel	Exhaust gas (int)	Cracking – fatigue	Periodic Surveillance and Preventive Maintenance	--	--	H
Silencer	Pressure boundary	Carbon steel	Exhaust gas (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.H2-2 (A-27)	3.3.1-18	E
Tank	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Tank	Pressure boundary	Carbon steel	Gas (int)	None	None	VII.J-23 (AP-6)	3.3.1-97	A
Tank	Pressure boundary	Carbon steel	Soil (ext)	Loss of material	Buried Piping and Tanks Inspection	VIII.E-1 (S-01)	3.4.1-11	C
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Exhaust gas (int)	Cracking – fatigue	Periodic Surveillance and Preventive Maintenance	--	--	H
Valve body	Pressure boundary	Carbon steel	Exhaust gas (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.H2-2 (A-27)	3.3.1-18	E

Table 3.3.2-16-IP2
SBO/Appendix R Diesel Generator System
Summary of Aging Management Review

Table 3.3.2-16-IP2: SBO/Appendix R Diesel Generator System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Filter housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Filter housing	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.A-19 (E-29)	3.2.1-32	E
Filter housing	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.H2-20 (AP-30)	3.3.1-14	B, 316
Flexible connection	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Flexible connection	Pressure boundary	Stainless steel	Exhaust gas (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	H
Flexible connection	Pressure boundary	Stainless steel	Exhaust gas (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.H2-2 (A-27)	3.3.1-18	E

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Heat exchanger (bonnet)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.H2-3 (AP-41)	3.3.1-59	A
Heat exchanger (bonnet)	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305
Heat exchanger (bonnet)	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-1 (A-63)	3.3.1-48	D
Heat exchanger (fins)	Heat transfer	Aluminum	Air – indoor (ext)	Fouling	Periodic Surveillance and Preventive Maintenance	--	--	H
Heat exchanger (shell)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.H2-3 (AP-41)	3.3.1-59	A
Heat exchanger (shell)	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.H2-5 (AP-39)	3.3.1-21	B, 316
Heat exchanger (shell)	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-1 (A-63)	3.3.1-48	D
Heat exchanger (tubes)	Heat transfer	Copper alloy	Air – indoor (ext)	Fouling	Periodic Surveillance and Preventive Maintenance	--	--	G

Table 3.3.2-16-IP2: SBO/Appendix R Diesel Generator System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Heat exchanger (tubes)	Heat transfer	Copper alloy	Lube oil (ext)	Fouling	Oil Analysis	V.A-12 (EP-47)	3.2.1-9	D, 316
Heat exchanger (tubes)	Heat transfer	Copper alloy	Treated water (int)	Fouling	Water Chemistry Control – Closed Cooling Water	VII.C2-2 (AP-80)	3.3.1-52	D
Heat exchanger (tubes)	Heat transfer	Stainless steel	Treated water (ext)	Fouling	Periodic Surveillance and Preventive Maintenance	--	--	G, 305
Heat exchanger (tubes)	Heat transfer	Stainless steel	Treated water > 140°F (int)	Fouling	Water Chemistry Control – Closed Cooling Water	VII.C2-3 (AP-63)	3.3.1-52	D
Heat exchanger (tubes)	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Heat exchanger (tubes)	Pressure boundary	Copper alloy	Lube oil (ext)	Loss of material	Oil Analysis	VII.H2-10 (AP-47)	3.3.1-26	D, 316
Heat exchanger (tubes)	Pressure boundary	Copper alloy	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.E1-2 (AP-34)	3.3.1-51	D
Heat exchanger (tubes)	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305

Table 3.3.2-16-IP2: SBO/Appendix R Diesel Generator System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Heat exchanger (tubes)	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Closed Cooling Water	VII.E3-2 (A-68)	3.3.1-46	D
Heat exchanger (tubes)	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.E3-1 (A-67)	3.3.1-49	D
Heat exchanger (tubes)	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material – wear	Heat Exchanger Monitoring	--	--	H
Heater housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Heater housing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.H2-23 (A-25)	3.3.1-47	B
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-9 (A-78)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.H2-21 (A-23)	3.3.1-71	E
Piping	Pressure boundary	Carbon steel	Exhaust gas (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	H

Table 3.3.2-16-IP2: SBO/Appendix R Diesel Generator System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Carbon steel	Exhaust gas (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.H2-2 (A-27)	3.3.1-18	E
Piping	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.H2-20 (AP-30)	3.3.1-14	B, 316
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.H2-23 (A-25)	3.3.1-47	B
Pump casing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Pump casing	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.H2-20 (AP-30)	3.3.1-14	B, 316
Pump casing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.H2-23 (A-25)	3.3.1-47	B
Sight glass	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Sight glass	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Selective Leaching	VII.H2-12 (AP-43)	3.3.1-84	A, 307
Sight glass	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.H2-8 (AP-12)	3.3.1-51	B

Table 3.3.2-16-IP2: SBO/Appendix R Diesel Generator System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Sight glass	Pressure boundary	Glass	Air – indoor (ext)	None	None	VII.J-8 (AP-14)	3.3.1-93	A
Sight glass	Pressure boundary	Glass	Treated water (int)	None	None	VII.J-11 (AP-50)	3.3.1-93	A, 303
Silencer	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Silencer	Pressure boundary	Carbon steel	Exhaust gas (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	H
Silencer	Pressure boundary	Carbon steel	Exhaust gas (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.H2-2 (A-27)	3.3.1-18	E
Tank	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Tank	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.H2-23 (A-25)	3.3.1-47	B
Turbocharger	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Turbocharger	Pressure boundary	Carbon steel	Exhaust gas (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.H2-2 (A-27)	3.3.1-18	E

Table 3.3.2-16-IP2: SBO/Appendix R Diesel Generator System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Turbocharger housing	Heat transfer	Carbon steel	Air – indoor (int)	Fouling	Periodic Surveillance and Preventive Maintenance	--	--	G
Turbocharger housing	Heat transfer	Carbon steel	Treated water (int)	Fouling	Water Chemistry Control – Closed Cooling Water	VII.H2-23 (A-25)	3.3.1-47	B
Turbocharger housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Turbocharger housing	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.A-19 (E-29)	3.2.1-32	E
Turbocharger housing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.H2-23 (A-25)	3.3.1-47	B
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.H2-21 (A-23)	3.3.1-71	E
Valve body	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.H2-20 (AP-30)	3.3.1-14	B, 316
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.H2-23 (A-25)	3.3.1-47	B

**Table 3.3.2-16-IP3
Appendix R Diesel Generator System
Summary of Aging Management Review**

Table 3.3.2-16-IP3: Appendix R Diesel Generator System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Blower housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Blower housing	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	V.A-19 (E-29)	3.2.1-32	E
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	Bolting Integrity	VII.I-1 (AP-28)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Compressor housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Compressor housing	Pressure boundary	Carbon steel	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.H2-21 (A-23)	3.3.1-71	E
Expansion joint	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A

Table 3.3.2-16-IP3: Appendix R Diesel Generator System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Expansion joint	Pressure boundary	Carbon steel	Exhaust gas (int)	Cracking – fatigue	Periodic Surveillance and Preventive Maintenance	--	--	H
Expansion joint	Pressure boundary	Carbon steel	Exhaust gas (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.H2-2 (A-27)	3.3.1-18	E
Filter housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Filter housing	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.A-19 (E-29)	3.2.1-32	E
Filter housing	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-9 (A-78)	3.3.1-58	A
Filter housing	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.H2-20 (AP-30)	3.3.1-14	B, 316
Heat exchanger (bonnet)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.H2-3 (AP-41)	3.3.1-59	A
Heat exchanger (bonnet)	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-1 (A-63)	3.3.1-48	D
Heat exchanger (fins)	Heat transfer	Copper alloy	Air – indoor (ext)	Fouling	Periodic Surveillance and Preventive Maintenance	--	--	G

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Heat exchanger (fins)	Heat transfer	Aluminum	Air – outdoor (ext)	Fouling	Periodic Surveillance and Preventive Maintenance	--	--	G
Heat exchanger (housing)	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	VII.H2-4 (AP-40)	3.3.1-59	A
Heat exchanger (housing)	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-1 (A-63)	3.3.1-48	D
Heat exchanger (shell)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.H2-3 (AP-41)	3.3.1-59	A
Heat exchanger (shell)	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	V.B-1 (E-25)	3.2.1-32	E
Heat exchanger (shell)	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.H2-5 (AP-39)	3.3.1-21	B, 316
Heat exchanger (shell)	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-1 (A-63)	3.3.1-48	D
Heat exchanger (tubes)	Heat transfer	Copper alloy > 15% Zn	Air – indoor (ext)	Fouling	Periodic Surveillance and Preventive Maintenance	--	--	G

Table 3.3.2-16-IP3: Appendix R Diesel Generator System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Heat exchanger (tubes)	Heat transfer	Copper alloy > 15% Zn	Treated water (int)	Fouling	Water Chemistry Control – Closed Cooling Water	VII.C2-2 (AP-80)	3.3.1-52	D
Heat exchanger (tubes)	Heat transfer	Copper alloy > 15% Zn (inhibited)	Air – outdoor (ext)	Fouling	Periodic Surveillance and Preventive Maintenance	--	--	G
Heat exchanger (tubes)	Heat transfer	Copper alloy > 15% Zn (inhibited)	Lube oil (ext)	Fouling	Oil Analysis	V.A-12 (EP-47)	3.2.1-9	D, 316
Heat exchanger (tubes)	Heat transfer	Copper alloy > 15% Zn (inhibited)	Treated water (int)	Fouling	Water Chemistry Control – Closed Cooling Water	VII.C2-2 (AP-80)	3.3.1-52	D
Heat exchanger (tubes)	Pressure boundary	Copper alloy > 15% Zn	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Heat exchanger (tubes)	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Selective Leaching	VII.H2-12 (AP-43)	3.3.1-84	A, 304
Heat exchanger (tubes)	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.E1-2 (AP-34)	3.3.1-51	D
Heat exchanger (tubes)	Pressure boundary	Copper alloy > 15% Zn (inhibited)	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	--	--	G

Table 3.3.2-16-IP3: Appendix R Diesel Generator System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Heat exchanger (tubes)	Pressure boundary	Copper alloy > 15% Zn (inhibited)	Lube oil (ext)	Loss of material	Oil Analysis	VII.H2-10 (AP-47)	3.3.1-26	D, 316
Heat exchanger (tubes)	Pressure boundary	Copper alloy > 15% Zn (inhibited)	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.E1-2 (AP-34)	3.3.1-51	D
Heater housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Heater housing	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.H2-20 (AP-30)	3.3.1-14	B, 316
Heater housing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.H2-23 (A-25)	3.3.1-47	B
Lubricator housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Lubricator housing	Pressure boundary	Carbon steel	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.H2-21 (A-23)	3.3.1-71	E
Motor housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Motor housing	Pressure boundary	Carbon steel	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.H2-21 (A-23)	3.3.1-71	E

Table 3.3.2-16-IP3: Appendix R Diesel Generator System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.A-19 (E-29)	3.2.1-32	E
Piping	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	V.A-19 (E-29)	3.2.1-32	E
Piping	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-9 (A-78)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.H2-21 (A-23)	3.3.1-71	E
Piping	Pressure boundary	Carbon steel	Exhaust gas (int)	Cracking – fatigue	Periodic Surveillance and Preventive Maintenance	--	--	H
Piping	Pressure boundary	Carbon steel	Exhaust gas (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.H2-2 (A-27)	3.3.1-18	E
Piping	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.H2-20 (AP-30)	3.3.1-14	B, 316
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.H2-23 (A-25)	3.3.1-47	B

Table 3.3.2-16-IP3: Appendix R Diesel Generator System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Pump casing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Pump casing	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.H2-20 (AP-30)	3.3.1-14	B, 316
Sight glass	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Sight glass	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.H2-23 (A-25)	3.3.1-47	B
Sight glass	Pressure boundary	Glass	Air – indoor (ext)	None	None	VII.J-8 (AP-14)	3.3.1-93	A
Sight glass	Pressure boundary	Glass	Treated water (int)	None	None	VII.J-11 (AP-50)	3.3.1-93	A, 303
Silencer	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-9 (A-78)	3.3.1-58	A
Silencer	Pressure boundary	Carbon steel	Exhaust gas (int)	Cracking – fatigue	Periodic Surveillance and Preventive Maintenance	--	--	H
Silencer	Pressure boundary	Carbon steel	Exhaust gas (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.H2-2 (A-27)	3.3.1-18	E

Table 3.3.2-16-IP3: Appendix R Diesel Generator System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Strainer	Filtration	Stainless steel	Condensation (ext)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.F1-1 (A-09)	3.3.1-27	E
Strainer	Filtration	Stainless steel	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.F1-1 (A-09)	3.3.1-27	E
Strainer	Filtration	Stainless steel	Lube oil (ext)	Loss of material	Oil Analysis	VII.H2-17 (AP-59)	3.3.1-33	B, 316
Strainer	Filtration	Stainless steel	Lube oil (int)	Loss of material	Oil Analysis	VII.H2-17 (AP-59)	3.3.1-33	B, 316
Strainer housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Strainer housing	Pressure boundary	Carbon steel	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.H2-21 (A-23)	3.3.1-71	E
Strainer housing	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.H2-20 (AP-30)	3.3.1-14	B, 316
Tank	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Tank	Pressure boundary	Carbon steel	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.H2-21 (A-23)	3.3.1-71	E

Table 3.3.2-16-IP3: Appendix R Diesel Generator System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Tank	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.H2-23 (A-25)	3.3.1-47	B
Thermowell	Pressure boundary	Copper alloy > 15% Zn	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Thermowell	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.H2-8 (AP-12)	3.3.1-51	B
Thermowell	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Thermowell	Pressure boundary	Stainless steel	Lube oil (int)	Loss of material	Oil Analysis	VII.H2-17 (AP-59)	3.3.1-33	B, 316
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Tubing	Pressure boundary	Stainless steel	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.F1-1 (A-09)	3.3.1-27	E
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-9 (A-78)	3.3.1-58	A

Table 3.3.2-16-IP3: Appendix R Diesel Generator System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Carbon steel	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.H2-21 (A-23)	3.3.1-71	E
Valve body	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.H2-20 (AP-30)	3.3.1-14	B, 316
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.H2-23 (A-25)	3.3.1-47	B
Valve body	Pressure boundary	Copper alloy > 15% Zn	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Valve body	Pressure boundary	Copper alloy > 15% Zn	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.G-9 (AP-78)	3.3.1-28	E
Valve body	Pressure boundary	Copper alloy > 15% Zn	Lube oil (int)	Loss of material	Oil Analysis	VII.H2-10 (AP-47)	3.3.1-26	B, 316
Valve body	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Selective Leaching	VII.H2-12 (AP-43)	3.3.1-84	A, 307
Valve body	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.H2-8 (AP-12)	3.3.1-51	B
Valve body	Pressure boundary	Stainless steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	--	--	G

Table 3.3.2-16-IP3: Appendix R Diesel Generator System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Stainless steel	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.F1-1 (A-09)	3.3.1-27	E
Valve body	Pressure boundary	Stainless steel	Lube oil (int)	Cracking	Oil Analysis	--	--	H
Valve body	Pressure boundary	Stainless steel	Lube oil (int)	Loss of material	Oil Analysis	VII.H2-17 (AP-59)	3.3.1-33	B, 316

**Table 3.3.2-17-IP2
City Water
Summary of Aging Management Review**

Table 3.3.2-17-IP2: City Water								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	Bolting Integrity	VII.I-1 (AP-28)	3.3.1-43	A
Bolting	Pressure boundary	Carbon steel	Soil (ext)	Loss of material	Buried Piping and Tanks Inspection	VII.C1-18 (A-01)	3.3.1-19	C
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-9 (A-78)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Soil (ext)	Loss of material	Buried Piping and Tanks Inspection	VII.C1-18 (A-01)	3.3.1-19	C
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305

Table 3.3.2-17-IP2: City Water								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Gray cast iron	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Gray cast iron	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-9 (A-78)	3.3.1-58	A
Piping	Pressure boundary	Gray cast iron	Soil (ext)	Loss of material	Buried Piping and Tanks Inspection	VII.C1-18 (A-01)	3.3.1-19	C
Piping	Pressure boundary	Gray cast iron	Soil (ext)	Loss of material	Selective Leaching	VII.C1-12 (A-02)	3.3.1-85	C
Piping	Pressure boundary	Gray cast iron	Treated water (int)	Loss of material	Selective Leaching	VII.G-14 (A-51)	3.3.1-85	C, 303
Piping	Pressure boundary	Gray cast iron	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305
Tank	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	Aboveground Steel Tanks	VII.H1-11 (A-95)	3.3.1-40	C
Tank	Pressure boundary	Carbon steel	Concrete (ext)	Loss of material	Aboveground Steel Tanks	--	--	G
Tank	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305
Tubing	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C

Table 3.3.2-17-IP2: City Water								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Tubing	Pressure boundary	Copper alloy	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-9 (A-78)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Soil (ext)	Loss of material	Buried Piping and Tanks Inspection	VII.C1-18 (A-01)	3.3.1-19	C
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305
Valve body	Pressure boundary	Copper alloy > 15% Zn	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Valve body	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Selective Leaching	VII.G-13 (A-47)	3.3.1-84	C, 303
Valve body	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305
Valve body	Pressure boundary	Gray cast iron	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A

Table 3.3.2-17-IP2: City Water								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Gray cast iron	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-9 (A-78)	3.3.1-58	A
Valve body	Pressure boundary	Gray cast iron	Soil (ext)	Loss of material	Buried Piping and Tanks Inspection	VII.C1-18 (A-01)	3.3.1-19	C
Valve body	Pressure boundary	Gray cast iron	Soil (ext)	Loss of material	Selective Leaching	VII.C1-12 (A-02)	3.3.1-85	C
Valve body	Pressure boundary	Gray cast iron	Treated water (int)	Loss of material	Selective Leaching	VII.G-14 (A-51)	3.3.1-85	C, 303
Valve body	Pressure boundary	Gray cast iron	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305

**Table 3.3.2-17-IP3
City Water
Summary of Aging Management Review**

Table 3.3.2-17-IP3: City Water								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	Bolting Integrity	VII.I-1 (AP-28)	3.3.1-43	A
Bolting	Pressure boundary	Carbon steel	Soil (ext)	Loss of material	Buried Piping and Tanks Inspection	VII.C1-18 (A-01)	3.3.1-19	C
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-9 (A-78)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Soil (ext)	Loss of material	Buried Piping and Tanks Inspection	VII.C1-18 (A-01)	3.3.1-19	C
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Gray cast iron	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Gray cast iron	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-9 (A-78)	3.3.1-58	A
Piping	Pressure boundary	Gray cast iron	Soil (ext)	Loss of material	Buried Piping and Tanks Inspection	VII.C1-18 (A-01)	3.3.1-19	C
Piping	Pressure boundary	Gray cast iron	Soil (ext)	Loss of material	Selective Leaching	VII.C1-12 (A-02)	3.3.1-85	C
Piping	Pressure boundary	Gray cast iron	Treated water (int)	Loss of material	Selective Leaching	VII.G-14 (A-51)	3.3.1-85	C, 303
Piping	Pressure boundary	Gray cast iron	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305
Tubing	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Tubing	Pressure boundary	Copper alloy	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A

Table 3.3.2-17-IP3: City Water								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305
Valve body	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Selective Leaching	VII.G-13 (A-47)	3.3.1-84	C, 303
Valve body	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305

**Table 3.3.2-18-IP2
Plant Drains
Summary of Aging Management Review**

Table 3.3.2-18-IP2: Plant Drains								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Boric Acid Corrosion Prevention	VII.I-2 (A-102)	3.3.1-89	A
Bolting	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	Bolting Integrity	VII.I-1 (AP-28)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Bolting	Pressure boundary	Stainless steel	Air – outdoor (ext)	Loss of material	Bolting Integrity	--	--	G
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-9 (A-78)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Concrete (ext)	None	None	VII.J-21 (AP-3)	3.3.1-96	A

Table 3.3.2-18-IP2: Plant Drains								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.C1-19 (A-38)	3.3.1-76	E
Piping	Pressure boundary	Carbon steel	Soil (ext)	Loss of material	Buried Piping and Tanks Inspection	VII.C1-18 (A-01)	3.3.1-19	C
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Piping	Pressure boundary	Stainless steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	--	--	G
Piping	Pressure boundary	Stainless steel	Gas (int)	None	None	VII.J-19 (AP-22)	3.3.1-97	A
Piping	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	One-Time Inspection	VII.C1-15 (A-54)	3.3.1-79	E
Piping	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	C
Strainer	Filtration	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Strainer	Filtration	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A

Table 3.3.2-18-IP2: Plant Drains								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Tubing	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	One-Time Inspection	VII.C1-15 (A-54)	3.3.1-79	E
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.C1-19 (A-38)	3.3.1-76	E
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Gas (int)	None	None	VII.J-19 (AP-22)	3.3.1-97	A
Valve body	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	One-Time Inspection	VII.C1-15 (A-54)	3.3.1-79	E
Valve body	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	C

**Table 3.3.2-18-IP3
Plant Drains
Summary of Aging Management Review**

Table 3.3.2-18-IP3: Plant Drains								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Boric Acid Corrosion Prevention	VII.I-2 (A-102)	3.3.1-89	A
Bolting	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	Bolting Integrity	VII.I-1 (AP-28)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Bolting	Pressure boundary	Stainless steel	Air – outdoor (ext)	Loss of material	Bolting Integrity	--	--	G
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-9 (A-78)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Concrete (ext)	None	None	VII.J-21 (AP-3)	3.3.1-96	A

Table 3.3.2-18-IP3: Plant Drains								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.C1-19 (A-38)	3.3.1-76	E
Piping	Pressure boundary	Carbon steel	Soil (ext)	Loss of material	Buried Piping and Tanks Inspection	VII.C1-18 (A-01)	3.3.1-19	C
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Piping	Pressure boundary	Stainless steel	Air – outdoor (ext)	Loss of material	External Surfaces Monitoring	--	--	G
Piping	Pressure boundary	Stainless steel	Gas (int)	None	None	VII.J-19 (AP-22)	3.3.1-97	A
Piping	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	One-Time Inspection	VII.C1-15 (A-54)	3.3.1-79	E
Piping	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	C
Strainer	Filtration	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Strainer	Filtration	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A

Table 3.3.2-18-IP3: Plant Drains								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Tubing	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	One-Time Inspection	VII.C1-15 (A-54)	3.3.1-79	E
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Gas (int)	None	None	VII.J-19 (AP-22)	3.3.1-97	A
Valve body	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	One-Time Inspection	VII.C1-15 (A-54)	3.3.1-79	E
Valve body	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	C

**Table 3.3.2-19-1-IP2
Auxiliary Steam System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-1-IP2: Auxiliary Steam System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Filter housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Filter housing	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C, 309
Filter housing	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314
Flex joint	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Flex joint	Pressure boundary	Stainless steel	Steam (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.A-10 (SP-44)	3.4.1-39	C
Flex joint	Pressure boundary	Stainless steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	G

Table 3.3.2-19-1-IP2: Auxiliary Steam System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Flex joint	Pressure boundary	Stainless steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-12 (SP-43)	3.4.1-37	C
Flex joint	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.B1-5 (SP-17)	3.4.1-14	C, 314
Flex joint	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TCAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Flex joint	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314
Heat exchanger (shell)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Heat exchanger (shell)	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314
Heat exchanger (shell)	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.E-37 (S-19)	3.4.1-3	C, 314
Heater housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A

Table 3.3.2-19-1-IP2: Auxiliary Steam System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Heater housing	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C, 309
Heater housing	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314
Heater housing	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C, 309
Heater housing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C, 309
Piping	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Flow-Accelerated Corrosion	VIII.A-17 (S-15)	3.4.1-29	C
Piping	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314
Piping	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C, 309

Table 3.3.2-19-1-IP2: Auxiliary Steam System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Flow-Accelerated Corrosion	VIII.D1-9 (S-16)	3.4.1-29	C, 311
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Piping	Pressure boundary	Stainless steel	Steam (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.A-10 (SP-44)	3.4.1-39	C
Piping	Pressure boundary	Stainless steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	G
Piping	Pressure boundary	Stainless steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-12 (SP-43)	3.4.1-37	C
Piping	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.B1-5 (SP-17)	3.4.1-14	C, 314
Piping	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Piping	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314

Table 3.3.2-19-1-IP2: Auxiliary Steam System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Pump casing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Pump casing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314
Steam trap	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Steam trap	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C, 309
Steam trap	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Flow-Accelerated Corrosion	VIII.A-17 (S-15)	3.4.1-29	C
Steam trap	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314
Strainer housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Strainer housing	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C, 309
Strainer housing	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314

Table 3.3.2-19-1-IP2: Auxiliary Steam System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Strainer housing	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C, 309
Strainer housing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314
Tank	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Tank	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314
Thermowell	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Thermowell	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C, 309
Thermowell	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314
Thermowell	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C, 309
Thermowell	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314

Table 3.3.2-19-1-IP2: Auxiliary Steam System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Tubing	Pressure boundary	Stainless steel	Steam (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.A-10 (SP-44)	3.4.1-39	C
Tubing	Pressure boundary	Stainless steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	G
Tubing	Pressure boundary	Stainless steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-12 (SP-43)	3.4.1-37	C
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.B1-5 (SP-17)	3.4.1-14	C, 314
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C, 309

Table 3.3.2-19-1-IP2: Auxiliary Steam System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Flow-Accelerated Corrosion	VIII.A-17 (S-15)	3.4.1-29	C
Valve body	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C, 309
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Flow-Accelerated Corrosion	VIII.D1-9 (S-16)	3.4.1-29	C, 311
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314
Valve body	Pressure boundary	CASS	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	CASS	Steam (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.A-10 (SP-44)	3.4.1-39	C
Valve body	Pressure boundary	CASS	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	F
Valve body	Pressure boundary	CASS	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-12 (SP-43)	3.4.1-37	C

Table 3.3.2-19-1-IP2: Auxiliary Steam System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	CASS	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.B1-5 (SP-17)	3.4.1-14	C, 314
Valve body	Pressure boundary	CASS	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Valve body	Pressure boundary	CASS	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314
Valve body	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Valve body	Pressure boundary	Copper alloy	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	--	--	G
Valve body	Pressure boundary	Copper alloy	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-5 (SP-61)	3.4.1-15	C, 314
Valve body	Pressure boundary	Gray cast iron	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Gray cast iron	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C, 309
Valve body	Pressure boundary	Gray cast iron	Steam (int)	Loss of material	Flow-Accelerated Corrosion	VIII.A-17 (S-15)	3.4.1-29	C

Table 3.3.2-19-1-IP2: Auxiliary Steam System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Gray cast iron	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314
Valve body	Pressure boundary	Gray cast iron	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C, 309
Valve body	Pressure boundary	Gray cast iron	Treated water (int)	Loss of material	Selective Leaching	VII.C2-9 (AP-31)	3.3.1-85	C
Valve body	Pressure boundary	Gray cast iron	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Steam (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.A-10 (SP-44)	3.4.1-39	C
Valve body	Pressure boundary	Stainless steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	G
Valve body	Pressure boundary	Stainless steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-12 (SP-43)	3.4.1-37	C
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.B1-5 (SP-17)	3.4.1-14	C, 314

Table 3.3.2-19-1-IP2: Auxiliary Steam System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314

**Table 3.3.2-19-2-IP2
Conventional Closed Cooling System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-2-IP2: Conventional Closed Cooling System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Flex joint	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Flex joint	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-10 (A-52)	3.3.1-50	B
Heat exchanger (shell)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Heat exchanger (shell)	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-1 (A-63)	3.3.1-48	B
Orifice	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A

Table 3.3.2-19-2-IP2: Conventional Closed Cooling System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Orifice	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-14 (A-25)	3.3.1-47	B
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-14 (A-25)	3.3.1-47	B
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Piping	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-10 (A-52)	3.3.1-50	B
Pump casing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Pump casing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-14 (A-25)	3.3.1-47	B
Sight Glass	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Sight Glass	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-14 (A-25)	3.3.1-47	B

Table 3.3.2-19-2-IP2: Conventional Closed Cooling System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Sight Glass	Pressure boundary	Glass	Air – indoor (ext)	None	None	VII.J-8 (AP-14)	3.3.1-93	A
Sight Glass	Pressure boundary	Glass	Treated water (int)	None	None	VII.J-11 (AP-50)	3.3.1-93	A
Tank	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Tank	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-14 (A-25)	3.3.1-47	B
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Tubing	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-10 (A-52)	3.3.1-50	B
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-14 (A-25)	3.3.1-47	B
Valve body	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C

Table 3.3.2-19-2-IP2: Conventional Closed Cooling System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Copper alloy	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-4 (AP-12)	3.3.1-51	B
Valve body	Pressure boundary	Copper alloy > 15% Zn	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Valve body	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Selective Leaching	VII.C2-6 (AP-43)	3.3.1-84	A
Valve body	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-4 (AP-12)	3.3.1-51	B
Valve body	Pressure boundary	Gray cast iron	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Gray cast iron	Treated water (int)	Loss of material	Selective Leaching	VII.C2-8 (A-50)	3.3.1-85	A
Valve body	Pressure boundary	Gray cast iron	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-14 (A-25)	3.3.1-47	B
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-10 (A-52)	3.3.1-50	B

**Table 3.3.2-19-3-IP2
Chemical Feed System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-3-IP2: Chemical Feed System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Flex joint	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Flex joint	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	One-Time Inspection	--	--	G, 318
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Piping	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	One-Time Inspection	--	--	G, 318

Table 3.3.2-19-3-IP2: Chemical Feed System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Pump casing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Pump casing	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	One-Time Inspection	--	--	G, 318
Sight glass	Pressure boundary	Glass	Air – indoor (ext)	None	None	VII.J-8 (AP-14)	3.3.1-93	A
Sight glass	Pressure boundary	Glass	Treated water (int)	None	None	VII.J-13 (AP-51)	3.3.1-93	A
Strainer housing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Strainer housing	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	One-Time Inspection	--	--	G, 318
Tank	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Tank	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	One-Time Inspection	--	--	G, 318
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Tubing	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	One-Time Inspection	--	--	G, 318

Table 3.3.2-19-3-IP2: Chemical Feed System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	One-Time Inspection	--	--	G, 318

**Table 3.3.2-19-4-IP2
Condensate System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-4-IP2: Condensate System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Blower housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Blower housing	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VIII.H-4 (S-34)	3.4.1-22	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	C
Ejector	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Ejector	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314
Expansion joint	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A

Table 3.3.2-19-4-IP2: Condensate System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Expansion joint	Pressure boundary	Stainless steel	Steam (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.A-10 (SP-44)	3.4.1-39	C
Expansion joint	Pressure boundary	Stainless steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	H
Expansion joint	Pressure boundary	Stainless steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-12 (SP-43)	3.4.1-37	C
Flow element	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Flow element	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Flow element	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314
Heat exchanger (shell)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Heat exchanger (shell)	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A

Table 3.3.2-19-4-IP2: Condensate System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Piping	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Flow-Accelerated Corrosion	VIII.A-17 (S-15)	3.4.1-29	C
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.E-34 (S-10)	3.4.1-4	A, 314
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Piping	Pressure boundary	Stainless steel	Steam (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.A-10 (SP-44)	3.4.1-39	C
Piping	Pressure boundary	Stainless steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	H
Piping	Pressure boundary	Stainless steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-12 (SP-43)	3.4.1-37	C
Pump casing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Pump casing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.E-34 (S-10)	3.4.1-4	A, 314

Table 3.3.2-19-4-IP2: Condensate System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Sight glass	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Sight glass	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.E-34 (S-10)	3.4.1-4	A, 314
Sight glass	Pressure boundary	Glass	Air – indoor (ext)	None	None	VIII.I-5 (SP-9)	3.4.1-40	A
Sight glass	Pressure boundary	Glass	Treated water (int)	None	None	VIII.I-8 (SP-35)	3.4.1-40	A
Strainer housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Strainer housing	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Strainer housing	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314
Strainer housing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Strainer housing	Pressure boundary	Stainless steel	Steam (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.A-10 (SP-44)	3.4.1-39	C

Table 3.3.2-19-4-IP2: Condensate System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Strainer housing	Pressure boundary	Stainless steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	H
Strainer housing	Pressure boundary	Stainless steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-12 (SP-43)	3.4.1-37	C
Tank	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Tank	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314
Tank	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Tank	Pressure boundary	Stainless steel	Steam (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.A-10 (SP-44)	3.4.1-39	C
Tank	Pressure boundary	Stainless steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-12 (SP-43)	3.4.1-37	C
Thermowell	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Thermowell	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C

Table 3.3.2-19-4-IP2: Condensate System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Thermowell	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314
Thermowell	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Thermowell	Pressure boundary	Stainless steel	Steam (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.A-10 (SP-44)	3.4.1-39	C
Thermowell	Pressure boundary	Stainless steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	H
Thermowell	Pressure boundary	Stainless steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-12 (SP-43)	3.4.1-37	C
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Valve body	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Valve body	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Flow-Accelerated Corrosion	VIII.A-17 (S-15)	3.4.1-29	C
Valve body	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314

Table 3.3.2-19-4-IP2: Condensate System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	VIII.I-2 (SP-6)	3.4.1-41	A
Valve body	Pressure boundary	Copper alloy	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-5 (SP-61)	3.4.1-15	C, 314
Valve body	Pressure boundary	Copper alloy > 15% Zn	Air – indoor (ext)	None	None	VIII.I-2 (SP-6)	3.4.1-41	A
Valve body	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Selective Leaching	VIII.E-21 (SP-55)	3.4.1-35	A
Valve body	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-5 (SP-61)	3.4.1-15	C, 314
Valve body	Pressure boundary	Gray cast iron	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Valve body	Pressure boundary	Gray cast iron	Steam (int)	Cracking – fatigue	TCAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Valve body	Pressure boundary	Gray cast iron	Steam (int)	Loss of material	Flow-Accelerated Corrosion	VIII.A-17 (S-15)	3.4.1-29	C
Valve body	Pressure boundary	Gray cast iron	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314

Table 3.3.2-19-4-IP2: Condensate System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Valve body	Pressure boundary	Stainless steel	Steam (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.A-10 (SP-44)	3.4.1-39	C
Valve body	Pressure boundary	Stainless steel	Steam (int)	Cracking – fatigue	TCAA – metal fatigue	--	--	H
Valve body	Pressure boundary	Stainless steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-12 (SP-43)	3.4.1-37	C

**Table 3.3.2-19-5-IP2
Chemical and Volume Control System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-5-IP2: Chemical and Volume Control System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Boric Acid Corrosion Prevention	VII.I-2 (A-102)	3.3.1-89	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	C
Flow element	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Flow element	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	A
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Piping	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	A
Pump casing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A

Table 3.3.2-19-5-IP2: Chemical and Volume Control System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Pump casing	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	A
Tank	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Tank	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	V.A-27 (EP-41)	3.2.1-49	C
Thermowell	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Thermowell	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	A
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Tubing	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	A
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Valve body	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	A

**Table 3.3.2-19-6-IP2
Circulating Water System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-6-IP2: Circulating Water System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VIII.H-4 (S-34)	3.4.1-22	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	C
Expansion joint	Pressure boundary	Elastomer	Air – indoor (ext)	Change in material properties	Periodic Surveillance and Preventive Maintenance	VII.F1-7 (A-17)	3.3.1-11	E
Expansion joint	Pressure boundary	Elastomer	Air – indoor (ext)	Cracking	Periodic Surveillance and Preventive Maintenance	VII.F1-7 (A-17)	3.3.1-11	E
Expansion joint	Pressure boundary	Elastomer	Raw water (int)	Change in material properties	Periodic Surveillance and Preventive Maintenance	VII.C1-1 (AP-75)	3.3.1-75	E
Expansion joint	Pressure boundary	Elastomer	Raw water (int)	Cracking	Periodic Surveillance and Preventive Maintenance	VII.C1-1 (AP-75)	3.3.1-75	E
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A

Table 3.3.2-19-6-IP2: Circulating Water System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VIII.G-36 (S-12)	3.4.1-8	E
Pump casing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Pump casing	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VIII.G-36 (S-12)	3.4.1-8	E
Sight glass	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Sight glass	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VIII.G-36 (S-12)	3.4.1-8	E
Sight glass	Pressure boundary	Glass	Air – indoor (ext)	None	None	VIII.I-5 (SP-9)	3.4.1-40	A
Sight glass	Pressure boundary	Glass	Raw water (int)	None	None	VIII.I-7 (SP-34)	3.4.1-40	A
Thermowell	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Thermowell	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VIII.G-36 (S-12)	3.4.1-8	E

Table 3.3.2-19-6-IP2: Circulating Water System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Tubing	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	One-Time Inspection	VIII.E-27 (SP-36)	3.4.1-32	E
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Valve body	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VIII.G-36 (S-12)	3.4.1-8	E
Valve body	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	VIII.I-2 (SP-6)	3.4.1-41	A
Valve body	Pressure boundary	Copper alloy	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VIII.A-4 (SP-31)	3.4.1-32	E
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Valve body	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	One-Time Inspection	VIII.E-27 (SP-36)	3.4.1-32	E

**Table 3.3.2-19-7-IP2
City Water System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-7-IP2: City Water System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Filter housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Filter housing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305
Heat exchanger (shell)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Heat exchanger (shell)	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A

Table 3.3.2-19-7-IP2: City Water System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305
Piping	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Piping	Pressure boundary	Copper alloy	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305
Pump casing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Pump casing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305
Strainer housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Strainer housing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305
Tank	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Tank	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305

Table 3.3.2-19-7-IP2: City Water System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Tubing	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Tubing	Pressure boundary	Copper alloy	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Tubing	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	One-Time Inspection	--	--	G, 305
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305
Valve body	Pressure boundary	CASS	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	CASS	Treated water (int)	Loss of material	One-Time Inspection	--	--	G, 305
Valve body	Pressure boundary	Copper alloy > 15% Zn	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Valve body	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Selective Leaching	VII.G-13 (A-47)	3.3.1-84	C, 303

Table 3.3.2-19-7-IP2: City Water System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305
Valve body	Pressure boundary	Gray cast iron	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Gray cast iron	Treated water (int)	Loss of material	Selective Leaching	VII.G-14 (A-51)	3.3.1-85	C, 303
Valve body	Pressure boundary	Gray cast iron	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	One-Time Inspection	--	--	G, 305

**Table 3.3.2-19-8-IP2
Intake Structure System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-8-IP2: Intake Structure System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Orifice	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Orifice	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.C1-19 (A-38)	3.3.1-76	E
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.C1-19 (A-38)	3.3.1-76	E
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A

Table 3.3.2-19-8-IP2: Intake Structure System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.C1-19 (A-38)	3.3.1-76	E
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	One-Time Inspection	VII.C1-15 (A-54)	3.3.1-79	E

**Table 3.3.2-19-9-IP2
Emergency Diesel Generator System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-9-IP2: Emergency Diesel Generator System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Compressor housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Compressor housing	Pressure boundary	Carbon steel	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.H2-21 (A-23)	3.3.1-71	E
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Condensation (int)	Cracking – Fatigue	TLAA – metal fatigue	--	--	H
Piping	Pressure boundary	Carbon steel	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.H2-21 (A-23)	3.3.1-71	E
Piping	Pressure boundary	Carbon steel	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H2-24 (A-30)	3.3.1-20	B, 316

Table 3.3.2-19-9-IP2: Emergency Diesel Generator System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Piping	Pressure boundary	Stainless steel	Condensation (int)	Cracking – Fatigue	TLAA – metal fatigue	--	--	H
Piping	Pressure boundary	Stainless steel	Condensation (int)	Loss of material	One-Time Inspection	VII.F1-1 (A-09)	3.3.1-27	E
Piping	Pressure boundary	Stainless steel	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-6 (AP-54)	3.3.1-32	D, 316
Piping	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	One-Time Inspection	--	--	G, 305
Pump casing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Pump casing	Pressure boundary	Carbon steel	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H2-24 (A-30)	3.3.1-20	B, 316
Sight glass	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Sight glass	Pressure boundary	Carbon steel	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H2-24 (A-30)	3.3.1-20	B, 316
Sight glass	Pressure boundary	Glass	Air – indoor (ext)	None	None	VII.J-8 (AP-14)	3.3.1-93	A

Table 3.3.2-19-9-IP2: Emergency Diesel Generator System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Sight glass	Pressure boundary	Glass	Fuel oil (int)	None	None	VII.J-9 (AP-49)	3.3.1-93	A
Tank	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Tank	Pressure boundary	Carbon steel	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H2-24 (A-30)	3.3.1-20	B, 316
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Condensation (int)	Cracking – Fatigue	TCAA – metal fatigue	--	--	H
Valve body	Pressure boundary	Carbon steel	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.H2-21 (A-23)	3.3.1-71	E
Valve body	Pressure boundary	Carbon steel	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H2-24 (A-30)	3.3.1-20	B, 316
Valve body	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Valve body	Pressure boundary	Copper alloy	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H2-9 (AP-44)	3.3.1-32	B, 316
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A

Table 3.3.2-19-9-IP2: Emergency Diesel Generator System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Stainless steel	Condensation (int)	Cracking – Fatigue	TLAA – metal fatigue	--	--	H
Valve body	Pressure boundary	Stainless steel	Condensation (int)	Loss of material	One-Time Inspection	VII.F1-1 (A-09)	3.3.1-27	E
Valve body	Pressure boundary	Stainless steel	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-6 (AP-54)	3.3.1-32	D, 316
Valve body	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	One-Time Inspection	--	--	G, 305

**Table 3.3.2-19-10-IP2
Fuel Oil System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-10-IP2: Fuel Oil System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-10 (A-30)	3.3.1-20	B, 316
Pump casing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Pump casing	Pressure boundary	Carbon steel	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-10 (A-30)	3.3.1-20	B, 316
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-10 (A-30)	3.3.1-20	B, 316

Table 3.3.2-19-10-IP2: Fuel Oil System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Gray cast iron	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Gray cast iron	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-10 (A-30)	3.3.1-20	B, 316

**Table 3.3.2-19-11-IP2
Fire Protection System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-11-IP2: Fire Protection System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Evacuator	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Evacuator	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Fire Water System	VII.G-24 (A-33)	3.3.1-68	B, 303
Filter housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Filter housing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Fire Water System	VII.G-24 (A-33)	3.3.1-68	B, 303
Flow element	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Flow element	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Fire Water System	VII.G-24 (A-33)	3.3.1-68	B, 303

Table 3.3.2-19-11-IP2: Fire Protection System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Fire Water System	VII.G-24 (A-33)	3.3.1-68	B, 303
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Piping	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Fire Water System	VII.G-19 (A-55)	3.3.1-69	B, 303
Sight glass	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Sight glass	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Fire Water System	VII.G-24 (A-33)	3.3.1-68	B, 303
Sight glass	Pressure boundary	Glass	Air – indoor (ext)	None	None	VII.J-8 (AP-14)	3.3.1-93	A
Sight glass	Pressure boundary	Glass	Treated water (int)	None	None	VII.J-11 (AP-50)	3.3.1-93	A
Strainer housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Strainer housing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Fire Water System	VII.G-24 (A-33)	3.3.1-68	B, 303

Table 3.3.2-19-11-IP2: Fire Protection System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Tank	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Tank	Pressure boundary	Carbon steel	Fire protection foam (int)	Loss of material	Fire Water System	--	--	G
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Tubing	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Fire Water System	VII.G-19 (A-55)	3.3.1-69	B, 303
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Fire Water System	VII.G-24 (A-33)	3.3.1-68	B, 303
Valve body	Pressure boundary	Copper alloy > 15% Zn	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Valve body	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Fire Water System	VII.G-12 (A-45)	3.3.1-70	B, 303
Valve body	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Selective Leaching	VII.G-13 (A-47)	3.3.1-84	A, 303
Valve body	Pressure boundary	Gray cast iron	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A

Table 3.3.2-19-11-IP2: Fire Protection System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Gray cast iron	Treated water (int)	Loss of material	Fire Water System	VII.G-24 (A-33)	3.3.1-68	B, 303
Valve body	Pressure boundary	Gray cast iron	Treated water (int)	Loss of material	Selective Leaching	VII.G-14 (A-51)	3.3.1-85	A, 303
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Fire Water System	VII.G-19 (A-55)	3.3.1-69	B, 303

**Table 3.3.2-19-12-IP2
Feedwater System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-12-IP2: Feedwater System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VIII.H-4 (S-34)	3.4.1-22	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	C
Filter housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Filter housing	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Filter housing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.D1-8 (S-10)	3.4.1-4	A, 314
Flow element	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Flow element	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Flow element	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.D1-8 (S-10)	3.4.1-4	A, 314

Table 3.3.2-19-12-IP2: Feedwater System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Heat exchanger (shell)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Heat exchanger (shell)	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.D1-8 (S-10)	3.4.1-4	C, 314
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Piping	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Flow-Accelerated Corrosion	VIII.D1-9 (S-16)	3.4.1-29	A
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.D1-8 (S-10)	3.4.1-4	A, 314
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Piping	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.D1-5 (SP-17)	3.4.1-14	A, 314
Piping	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302

Table 3.3.2-19-12-IP2: Feedwater System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.D1-4 (SP-16)	3.4.1-16	A, 314
Pump casing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Pump casing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.D1-8 (S-10)	3.4.1-4	A, 314
Sight glass	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Sight glass	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Sight glass	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.D1-8 (S-10)	3.4.1-4	A, 314
Sight glass	Pressure boundary	Glass	Air – indoor (ext)	None	None	VIII.I-5 (SP-9)	3.4.1-40	A
Sight glass	Pressure boundary	Glass	Treated water (int)	None	None	VIII.I-8 (SP-35)	3.4.1-40	A
Strainer housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A

Table 3.3.2-19-12-IP2: Feedwater System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Strainer housing	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Strainer housing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.D1-8 (S-10)	3.4.1-4	A, 314
Tank	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Tank	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.D1-8 (S-10)	3.4.1-4	A, 314
Thermowell	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Thermowell	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Thermowell	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.D1-8 (S-10)	3.4.1-4	A, 314
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C

Table 3.3.2-19-12-IP2: Feedwater System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Flow-Accelerated Corrosion	VIII.D1-9 (S-16)	3.4.1-29	A
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.D1-8 (S-10)	3.4.1-4	A, 314
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.D1-5 (SP-17)	3.4.1-14	A, 314
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.D1-4 (SP-16)	3.4.1-16	A, 314

**Table 3.3.2-19-13-IP2
Fresh Water Cooling System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-13-IP2: Fresh Water Cooling System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Compressor housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Compressor housing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305
Heat exchanger (shell)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Heat exchanger (shell)	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A

Table 3.3.2-19-13-IP2: Fresh Water Cooling System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Piping	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	One-Time Inspection	--	--	G, 305
Pump casing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Pump casing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305
Tank	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Tank	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Tubing	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	One-Time Inspection	--	--	G, 305

Table 3.3.2-19-13-IP2: Fresh Water Cooling System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305
Valve body	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Valve body	Pressure boundary	Copper alloy	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305
Valve body	Pressure boundary	Copper alloy > 15% Zn	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Valve body	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Selective Leaching	VII.G-13 (A-47)	3.3.1-84	C, 303
Valve body	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	One-Time Inspection	--	--	G, 305

**Table 3.3.2-19-14-IP2
Gas System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-14-IP2: Gas System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Dryer	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Dryer	Pressure boundary	Carbon steel	Gas (int)	None	None	VII.J-23 (AP-6)	3.3.1-97	A
Filter housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Filter housing	Pressure boundary	Carbon steel	Gas (int)	None	None	VII.J-23 (AP-6)	3.3.1-97	A
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Gas (int)	None	None	VII.J-23 (AP-6)	3.3.1-97	A

Table 3.3.2-19-14-IP2: Gas System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Piping	Pressure boundary	Stainless steel	Gas (int)	None	None	VII.J-19 (AP-22)	3.3.1-97	A
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Gas (int)	None	None	VII.J-23 (AP-6)	3.3.1-97	A
Valve body	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Valve body	Pressure boundary	Copper alloy	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-4 (AP-12)	3.3.1-51	D
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Gas (int)	None	None	VII.J-19 (AP-22)	3.3.1-97	A

**Table 3.3.2-19-15-IP2
Main Generator System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-15-IP2: Main Generator System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VIII.H-4 (S-34)	3.4.1-22	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	C
Filter housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Filter housing	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VIII.A-14 (SP-25)	3.4.1-7	D, 316
Filter housing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Auxiliary Systems	VIII.A-1 (S-23)	3.4.1-24	E, 304
Heat exchanger (shell)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Heat exchanger (shell)	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Auxiliary Systems	VIII.A-1 (S-23)	3.4.1-24	E, 304

Table 3.3.2-19-15-IP2: Main Generator System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Piping	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VIII.A-14 (SP-25)	3.4.1-7	D, 316
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Auxiliary Systems	VIII.A-1 (S-23)	3.4.1-24	E, 304
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Piping	Pressure boundary	Stainless steel	Lube oil (int)	Loss of material	Oil Analysis	VIII.A-9 (SP-38)	3.4.1-19	D, 316
Piping	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Auxiliary Systems	VIII.E-24 (SP-39)	3.4.1-25	E, 304
Pump casing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Pump casing	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VIII.A-14 (SP-25)	3.4.1-7	D, 316
Pump casing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Auxiliary Systems	VIII.A-1 (S-23)	3.4.1-24	E, 304

Table 3.3.2-19-15-IP2: Main Generator System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Sight glass	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Sight glass	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VIII.A-14 (SP-25)	3.4.1-7	D, 316
Sight glass	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Auxiliary Systems	VIII.A-1 (S-23)	3.4.1-24	E, 304
Sight glass	Pressure boundary	Glass	Air – indoor (ext)	None	None	VIII.I-5 (SP-9)	3.4.1-40	A
Sight glass	Pressure boundary	Glass	Lube oil (int)	None	None	VIII.I-6 (SP-10)	3.4.1-40	A
Sight glass	Pressure boundary	Glass	Treated water (int)	None	None	VIII.I-8 (SP-35)	3.4.1-40	A
Strainer housing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Strainer housing	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Auxiliary Systems	VIII.E-24 (SP-39)	3.4.1-25	E, 304
Tank	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A

Table 3.3.2-19-15-IP2: Main Generator System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Tank	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VIII.A-14 (SP-25)	3.4.1-7	D, 316
Tank	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Auxiliary Systems	VIII.A-1 (S-23)	3.4.1-24	E, 304
Thermowell	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Thermowell	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Auxiliary Systems	VIII.A-1 (S-23)	3.4.1-24	E, 304
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Valve body	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VIII.A-14 (SP-25)	3.4.1-7	D, 316
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Auxiliary Systems	VIII.A-1 (S-23)	3.4.1-24	E, 304
Valve body	Pressure boundary	Copper alloy > 15% Zn	Air – indoor (ext)	None	None	VIII.I-2 (SP-6)	3.4.1-41	A
Valve body	Pressure boundary	Copper alloy > 15% Zn	Lube oil (int)	Loss of material	Oil Analysis	VIII.A-3 (SP-32)	3.4.1-18	D, 316

Table 3.3.2-19-15-IP2: Main Generator System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Selective Leaching	VIII.E-19 (SP-29)	3.4.1-35	C
Valve body	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Water Chemistry Control – Auxiliary Systems	VIII.E-16 (SP-8)	3.4.1-26	E, 304
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Valve body	Pressure boundary	Stainless steel	Lube oil (int)	Loss of material	Oil Analysis	VIII.A-9 (SP-38)	3.4.1-19	D, 316
Valve body	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Auxiliary Systems	VIII.E-24 (SP-39)	3.4.1-25	E, 304

**Table 3.3.2-19-16-IP2
House Service Boiler System,
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-16-IP2: House Service Boiler System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Filter housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Filter housing	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C, 309
Filter housing	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Auxiliary Systems	VIII.A-16 (S-06)	3.4.1-2	E, 312
Filter housing	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C, 309
Filter housing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Auxiliary Systems	VII.C2-14 (A-25)	3.3.1-47	E, 304
Flow element	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A

Table 3.3.2-19-16-IP2: House Service Boiler System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Flow element	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C, 309
Flow element	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Auxiliary Systems	VIII.A-16 (S-06)	3.4.1-2	E, 312
Flow element	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C, 309
Flow element	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Auxiliary Systems	VII.C2-14 (A-25)	3.3.1-47	E, 304
Heat exchanger (shell)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Heat exchanger (shell)	Pressure boundary	Carbon steel	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-10 (A-30)	3.3.1-20	D, 316
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-10 (A-30)	3.3.1-20	D, 316
Piping	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C, 309

Table 3.3.2-19-16-IP2: House Service Boiler System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Flow-Accelerated Corrosion	VIII.A-17 (S-15)	3.4.1-29	C
Piping	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Auxiliary Systems	VIII.A-16 (S-06)	3.4.1-2	E, 312
Piping	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C, 309
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Flow-Accelerated Corrosion	VIII.D1-9 (S-16)	3.4.1-29	C, 311
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Auxiliary Systems	VII.C2-14 (A-25)	3.3.1-47	E, 304
Pump casing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Pump casing	Pressure boundary	Carbon steel	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-10 (A-30)	3.3.1-20	D, 316
Pump casing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Auxiliary Systems	VII.C2-14 (A-25)	3.3.1-47	E, 304
Sight glass	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A

Table 3.3.2-19-16-IP2: House Service Boiler System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Sight glass	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Auxiliary Systems	VII.C2-14 (A-25)	3.3.1-47	E, 304
Sight glass	Pressure boundary	Glass	Air – indoor (ext)	None	None	VII.J-8 (AP-14)	3.3.1-93	A
Sight glass	Pressure boundary	Glass	Treated water (int)	None	None	VII.J-11 (AP-50)	3.3.1-93	A
Steam trap	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Steam trap	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C, 309
Steam trap	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Flow-Accelerated Corrosion	VIII.A-17 (S-15)	3.4.1-29	C
Steam trap	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Auxiliary Systems	VIII.A-16 (S-06)	3.4.1-2	E, 312
Strainer housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Strainer housing	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C, 309

Table 3.3.2-19-16-IP2: House Service Boiler System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Strainer housing	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Auxiliary Systems	VIII.A-16 (S-06)	3.4.1-2	E, 312
Strainer housing	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C, 309
Strainer housing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Auxiliary Systems	VII.C2-14 (A-25)	3.3.1-47	E, 304
Tank	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Tank	Pressure boundary	Carbon steel	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-10 (A-30)	3.3.1-20	D, 316
Tank	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Auxiliary Systems	VII.C2-14 (A-25)	3.3.1-47	E, 304
Thermowell	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Thermowell	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C, 309
Thermowell	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Auxiliary Systems	VIII.A-16 (S-06)	3.4.1-2	E, 312

Table 3.3.2-19-16-IP2: House Service Boiler System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Thermowell	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C, 309
Thermowell	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Auxiliary Systems	VII.C2-14 (A-25)	3.3.1-47	E, 304
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Tubing	Pressure boundary	Stainless steel	Steam (int)	Cracking	Water Chemistry Control – Auxiliary Systems	VIII.A-10 (SP-44)	3.4.1-39	E, 312
Tubing	Pressure boundary	Stainless steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	G
Tubing	Pressure boundary	Stainless steel	Steam (int)	Loss of material	Water Chemistry Control – Auxiliary Systems	VIII.A-12 (SP-43)	3.4.1-37	E, 312
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Auxiliary Systems	VII.C2-11 (AP-60)	3.3.1-46	E, 304
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Auxiliary Systems	VII.C2-10 (A-52)	3.3.1-50	E, 304

Table 3.3.2-19-16-IP2: House Service Boiler System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Turbine housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Turbine housing	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Auxiliary Systems	VIII.A-16 (S-06)	3.4.1-2	E, 312
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-10 (A-30)	3.3.1-20	D, 316
Valve body	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C, 309
Valve body	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Flow-Accelerated Corrosion	VIII.A-17 (S-15)	3.4.1-29	C
Valve body	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Auxiliary Systems	VIII.A-16 (S-06)	3.4.1-2	E, 312
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C, 309
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Flow-Accelerated Corrosion	VIII.D1-9 (S-16)	3.4.1-29	C, 311

Table 3.3.2-19-16-IP2: House Service Boiler System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Auxiliary Systems	VII.C2-14 (A-25)	3.3.1-47	E, 304
Valve body	Pressure boundary	Copper alloy > 15% Zn	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Valve body	Pressure boundary	Copper alloy > 15% Zn	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-3 (AP-44)	3.3.1-32	D, 316
Valve body	Pressure boundary	Copper alloy > 15% Zn	Steam (int)	Loss of material	Water Chemistry Control – Auxiliary Systems	--	--	G
Valve body	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Selective Leaching	VII.C2-6 (AP-43)	3.3.1-84	C, 304
Valve body	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Water Chemistry Control – Auxiliary Systems	VII.C2-4 (AP-12)	3.3.1-51	E, 304
Valve body	Pressure boundary	Gray cast iron	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Gray cast iron	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-10 (A-30)	3.3.1-20	D, 316
Valve body	Pressure boundary	Gray cast iron	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C, 309

Table 3.3.2-19-16-IP2: House Service Boiler System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Gray cast iron	Steam (int)	Loss of material	Flow-Accelerated Corrosion	VIII.A-17 (S-15)	3.4.1-29	C
Valve body	Pressure boundary	Gray cast iron	Steam (int)	Loss of material	Water Chemistry Control – Auxiliary Systems	VIII.A-16 (S-06)	3.4.1-2	E, 312
Valve body	Pressure boundary	Gray cast iron	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C, 309
Valve body	Pressure boundary	Gray cast iron	Treated water (int)	Loss of material	Selective Leaching	VII.C2-8 (A-50)	3.3.1-85	C, 304
Valve body	Pressure boundary	Gray cast iron	Treated water (int)	Loss of material	Water Chemistry Control – Auxiliary Systems	VII.C2-14 (A-25)	3.3.1-47	E, 304
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-6 (AP-54)	3.3.1-32	D, 316
Valve body	Pressure boundary	Stainless steel	Steam (int)	Cracking	Water Chemistry Control – Auxiliary Systems	VIII.A-10 (SP-44)	3.4.1-39	E, 312
Valve body	Pressure boundary	Stainless steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	G

Table 3.3.2-19-16-IP2: House Service Boiler System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Stainless steel	Steam (int)	Loss of material	Water Chemistry Control – Auxiliary Systems	VIII.A-12 (SP-43)	3.4.1-37	E, 312
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Auxiliary Systems	VII.C2-11 (AP-60)	3.3.1-46	E, 304
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Auxiliary Systems	VII.C2-10 (A-52)	3.3.1-50	E, 304

**Table 3.3.2-19-17-IP2
Heating, Ventilation and Air Conditioning System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-17-IP2: Heating, Ventilation and Air Conditioning System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Damper housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F1-2 (A-10)	3.3.1-56	A
Damper housing	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.B-1 (E-25)	3.2.1-32	E
Duct	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F1-2 (A-10)	3.3.1-56	A
Duct	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.B-1 (E-25)	3.2.1-32	E
Filter housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F1-2 (A-10)	3.3.1-56	A
Filter housing	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.B-1 (E-25)	3.2.1-32	E

Table 3.3.2-19-17-IP2: Heating, Ventilation and Air Conditioning System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F1-2 (A-10)	3.3.1-56	A
Piping	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.B-1 (E-25)	3.2.1-32	E
Piping	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Piping	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314
Piping	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C, 309
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F1-2 (A-10)	3.3.1-56	A
Valve body	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.B-1 (E-25)	3.2.1-32	E
Valve body	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C

Table 3.3.2-19-17-IP2: Heating, Ventilation and Air Conditioning System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C, 309
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314
Valve body	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Valve body	Pressure boundary	Copper alloy	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-5 (SP-61)	3.4.1-15	C, 314
Valve body	Pressure boundary	Copper alloy > 15% Zn	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Valve body	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Selective Leaching	VII.C2-7 (AP-32)	3.3.1-84	C
Valve body	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-5 (SP-61)	3.4.1-15	C, 314
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A

Table 3.3.2-19-17-IP2: Heating, Ventilation and Air Conditioning System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Stainless steel	Steam (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.A-10 (SP-44)	3.4.1-39	C
Valve body	Pressure boundary	Stainless steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	G
Valve body	Pressure boundary	Stainless steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-12 (SP-43)	3.4.1-37	C
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.B1-5 (SP-17)	3.4.1-14	C, 314
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314

**Table 3.3.2-19-18-IP2
Instrument Air System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-18-IP2: Instrument Air System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Compressor housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.D-3 (A-80)	3.3.1-57	A
Compressor housing	Pressure boundary	Carbon steel	Air – treated (int)	None	None	VII.J-22 (AP-4)	3.3.1-98	A, 301
Dryer	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.D-3 (A-80)	3.3.1-57	A
Dryer	Pressure boundary	Carbon steel	Air – treated (int)	None	None	VII.J-22 (AP-4)	3.3.1-98	A, 301
Filter housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.D-3 (A-80)	3.3.1-57	A
Filter housing	Pressure boundary	Carbon steel	Air – treated (int)	None	None	VII.J-22 (AP-4)	3.3.1-98	A, 301

Table 3.3.2-19-18-IP2: Instrument Air System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Heat exchanger (shell)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Heat exchanger (shell)	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-1 (A-63)	3.3.1-48	D
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.D-3 (A-80)	3.3.1-57	A
Piping	Pressure boundary	Carbon steel	Air – treated (int)	None	None	VII.J-22 (AP-4)	3.3.1-98	A, 301
Piping	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.C1-19 (A-38)	3.3.1-76	E
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Piping	Pressure boundary	Stainless steel	Air – treated (int)	None	None	VII.J-18 (AP-20)	3.3.1-98	A, 301
Silencer	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.D-3 (A-80)	3.3.1-57	A
Silencer	Pressure boundary	Carbon steel	Air – treated (int)	None	None	VII.J-22 (AP-4)	3.3.1-98	A, 301

Table 3.3.2-19-18-IP2: Instrument Air System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Strainer housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.D-3 (A-80)	3.3.1-57	A
Strainer housing	Pressure boundary	Carbon steel	Air – treated (int)	None	None	VII.J-22 (AP-4)	3.3.1-98	A, 301
Tank	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.D-3 (A-80)	3.3.1-57	A
Tank	Pressure boundary	Carbon steel	Air – treated (int)	None	None	VII.J-22 (AP-4)	3.3.1-98	A, 301
Trap	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.D-3 (A-80)	3.3.1-57	A
Trap	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.C1-19 (A-38)	3.3.1-76	E
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.D-3 (A-80)	3.3.1-57	A
Valve body	Pressure boundary	Carbon steel	Air – treated (int)	None	None	VII.J-22 (AP-4)	3.3.1-98	A, 301
Valve body	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Valve body	Pressure boundary	Copper alloy	Air – treated (int)	None	None	--	--	G

Table 3.3.2-19-18-IP2: Instrument Air System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Air – treated (int)	None	None	VII.J-18 (AP-20)	3.3.1-98	A, 301

**Table 3.3.2-19-19-IP2
Instrument Air Closed Cooling System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-19-IP2: Instrument Air Closed Cooling System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Flow element	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Flow element	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-14 (A-25)	3.3.1-47	D
Heat exchanger (shell)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Heat exchanger (shell)	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-5 (A-64)	3.3.1-77	C
Heat exchanger (shell)	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-1 (A-63)	3.3.1-48	D

Table 3.3.2-19-19-IP2: Instrument Air Closed Cooling System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-14 (A-25)	3.3.1-47	D
Pump casing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Pump casing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-14 (A-25)	3.3.1-47	D
Sight glass	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Sight glass	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-14 (A-25)	3.3.1-47	D
Sight glass	Pressure boundary	Glass	Air – indoor (ext)	None	None	VII.J-8 (AP-14)	3.3.1-93	A
Sight glass	Pressure boundary	Glass	Treated water (int)	None	None	VII.J-11 (AP-50)	3.3.1-93	A
Strainer housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A

Table 3.3.2-19-19-IP2: Instrument Air Closed Cooling System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Strainer housing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-14 (A-25)	3.3.1-47	D
Tank	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Tank	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-14 (A-25)	3.3.1-47	D
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-14 (A-25)	3.3.1-47	D
Valve body	Pressure boundary	Copper alloy > 15% Zn	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Valve body	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Selective Leaching	VII.C2-6 (AP-43)	3.3.1-84	C
Valve body	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-4 (AP-12)	3.3.1-51	D
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A

Table 3.3.2-19-19-IP2: Instrument Air Closed Cooling System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-10 (A-52)	3.3.1-50	D

**Table 3.3.2-19-20-IP2
Ignition Oil System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-20-IP2: Ignition Oil System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-10 (A-30)	3.3.1-20	D, 316
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-10 (A-30)	3.3.1-20	D, 316
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-6 (AP-54)	3.3.1-32	D, 316

**Table 3.3.2-19-21-IP2
Integrated Liquid Waste Handling System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-21-IP2: Integrated Liquid Waste Handling System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.C1-19 (A-38)	3.3.1-76	E
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Piping	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	One-Time Inspection	VII.C1-15 (A-54)	3.3.1-79	E
Pump casing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Pump casing	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	One-Time Inspection	VII.C1-15 (A-54)	3.3.1-79	E

Table 3.3.2-19-21-IP2: Integrated Liquid Waste Handling System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Tank	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Tank	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	One-Time Inspection	VII.C1-15 (A-54)	3.3.1-79	E
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.C1-19 (A-38)	3.3.1-76	E
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	One-Time Inspection	VII.C1-15 (A-54)	3.3.1-79	E

**Table 3.3.2-19-22-IP2
Lube Oil System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-22-IP2: Lube Oil System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Filter housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Filter housing	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.C1-17 (AP-30)	3.3.1-14	D, 316
Flex hose	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Flex hose	Pressure boundary	Stainless steel	Lube oil (int)	Loss of material	Oil Analysis	VII.C1-14 (AP-59)	3.3.1-33	D, 316
Heat exchanger (shell)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Heat exchanger (shell)	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.H2-5 (AP-39)	3.3.1-21	D, 316

Table 3.3.2-19-22-IP2: Lube Oil System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Heat exchanger (shell)	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-5 (A-64)	3.3.1-77	C
Orifice	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Orifice	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.C1-17 (AP-30)	3.3.1-14	D, 316
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.C1-17 (AP-30)	3.3.1-14	D, 316
Piping	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.C1-19 (A-38)	3.3.1-76	E
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Piping	Pressure boundary	Stainless steel	Lube oil (int)	Loss of material	Oil Analysis	VII.C1-14 (AP-59)	3.3.1-33	D, 316
Pump casing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A

Table 3.3.2-19-22-IP2: Lube Oil System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Pump casing	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.C1-17 (AP-30)	3.3.1-14	D, 316
Sight glass	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Sight glass	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.C1-17 (AP-30)	3.3.1-14	D, 316
Sight glass	Pressure boundary	Glass	Air – indoor (ext)	None	None	VII.J-8 (AP-14)	3.3.1-93	A
Sight glass	Pressure boundary	Glass	Lube oil (int)	None	None	VII.J-10 (AP-15)	3.3.1-93	A
Tank	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Tank	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.C1-17 (AP-30)	3.3.1-14	D, 316
Tank	Pressure boundary	Aluminum	Air – indoor (ext)	None	None	V.F-2 (EP-3)	3.2.1-50	C
Tank	Pressure boundary	Aluminum	Raw water (int)	Loss of material	One-Time Inspection	VII.G-8 (AP-83)	3.3.1-62	E
Thermowell	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A

Table 3.3.2-19-22-IP2: Lube Oil System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Thermowell	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.C1-17 (AP-30)	3.3.1-14	D, 316
Tubing	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Tubing	Pressure boundary	Copper alloy	Lube oil (int)	Loss of material	Oil Analysis	VII.C1-8 (AP-47)	3.3.1-26	D, 316
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.C1-17 (AP-30)	3.3.1-14	D, 316
Valve body	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.C1-19 (A-38)	3.3.1-76	E
Valve body	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Valve body	Pressure boundary	Copper alloy	Lube oil (int)	Loss of material	Oil Analysis	VII.C1-8 (AP-47)	3.3.1-26	D, 316
Valve body	Pressure boundary	Copper alloy > 15% Zn	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Valve body	Pressure boundary	Copper alloy > 15% Zn	Lube oil (int)	Loss of material	Oil Analysis	VII.C1-8 (AP-47)	3.3.1-26	D, 316

Table 3.3.2-19-22-IP2: Lube Oil System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Lube oil (int)	Loss of material	Oil Analysis	VII.C1-14 (AP-59)	3.3.1-33	D, 316

**Table 3.3.2-19-23-IP2
Main Steam System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-23-IP2: Main Steam System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VIII.H-4 (S-34)	3.4.1-22	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	C
Expansion joint	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Expansion joint	Pressure boundary	Stainless steel	Steam (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.B1-2 (SP-44)	3.4.1-39	A
Expansion joint	Pressure boundary	Stainless steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	H
Expansion joint	Pressure boundary	Stainless steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-3 (SP-43)	3.4.1-37	A
Expansion joint	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.B1-5 (SP-17)	3.4.1-14	A, 314

Table 3.3.2-19-23-IP2: Main Steam System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Expansion joint	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Expansion joint	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	A, 314
Heat exchanger (shell)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Heat exchanger (shell)	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Service Water Integrity	VIII.E-6 (S-24)	3.4.1-31	C
Heat exchanger (shell)	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	C
Heat exchanger (shell)	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VIII.E-2 (S-25)	3.4.1-25	D
Orifice	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Orifice	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	A

Table 3.3.2-19-23-IP2: Main Steam System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Orifice	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314
Orifice	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	A
Orifice	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	A, 314
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Piping	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	A
Piping	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Flow-Accelerated Corrosion	VIII.B1-9 (S-15)	3.4.1-29	A
Piping	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-8 (S-07)	3.4.1-37	A
Piping	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	A
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Flow-Accelerated Corrosion	VIII.D1-9 (S-16)	3.4.1-29	C

Table 3.3.2-19-23-IP2: Main Steam System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	A, 314
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Piping	Pressure boundary	Stainless steel	Steam (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.B1-2 (SP-44)	3.4.1-39	A
Piping	Pressure boundary	Stainless steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	H
Piping	Pressure boundary	Stainless steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-3 (SP-43)	3.4.1-37	A
Piping	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.B1-5 (SP-17)	3.4.1-14	A, 314
Piping	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Piping	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	A, 314
Pump casing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A

Table 3.3.2-19-23-IP2: Main Steam System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Pump casing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	A, 314
Silencer	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Silencer	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-8 (S-07)	3.4.1-37	A
Steam trap	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Steam trap	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	A
Steam trap	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Flow-Accelerated Corrosion	VIII.B1-9 (S-15)	3.4.1-29	A
Steam trap	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-8 (S-07)	3.4.1-37	A
Strainer housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Strainer housing	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	A

Table 3.3.2-19-23-IP2: Main Steam System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Strainer housing	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-8 (S-07)	3.4.1-37	A
Strainer housing	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	A
Strainer housing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	A, 314
Tank	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Tank	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	A, 314
Thermowell	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Thermowell	Pressure boundary	Stainless steel	Steam (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.B1-2 (SP-44)	3.4.1-39	A
Thermowell	Pressure boundary	Stainless steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	H
Thermowell	Pressure boundary	Stainless steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-3 (SP-43)	3.4.1-37	A

Table 3.3.2-19-23-IP2: Main Steam System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Thermowell	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.B1-5 (SP-17)	3.4.1-14	A, 314
Thermowell	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Thermowell	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	A, 314
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Tubing	Pressure boundary	Stainless steel	Steam (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.B1-2 (SP-44)	3.4.1-39	A
Tubing	Pressure boundary	Stainless steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	H
Tubing	Pressure boundary	Stainless steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-3 (SP-43)	3.4.1-37	A
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.B1-5 (SP-17)	3.4.1-14	A, 314
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302

Table 3.3.2-19-23-IP2: Main Steam System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	A, 314
Turbine housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Turbine housing	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-8 (S-07)	3.4.1-37	A
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Valve body	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	A
Valve body	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Flow-Accelerated Corrosion	VIII.B1-9 (S-15)	3.4.1-29	A
Valve body	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-8 (S-07)	3.4.1-37	A
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	A
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Flow-Accelerated Corrosion	VIII.D1-9 (S-16)	3.4.1-29	C

Table 3.3.2-19-23-IP2: Main Steam System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	A, 314
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Valve body	Pressure boundary	Stainless steel	Steam (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.B1-2 (SP-44)	3.4.1-39	A
Valve body	Pressure boundary	Stainless steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	H
Valve body	Pressure boundary	Stainless steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-3 (SP-43)	3.4.1-37	A
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.B1-5 (SP-17)	3.4.1-14	A, 314
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	A, 314

**Table 3.3.2-19-24-IP2
Miscellaneous System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-24-IP2: Miscellaneous System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.C1-19 (A-38)	3.3.1-76	E
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.C1-19 (A-38)	3.3.1-76	E

Table 3.3.2-19-24-IP2: Miscellaneous System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305

**Table 3.3.2-19-25-IP2
Nuclear Service Grade Makeup System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-25-IP2: Nuclear Service Grade Makeup System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314
Pump casing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Pump casing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314
Strainer housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A

Table 3.3.2-19-25-IP2: Nuclear Service Grade Makeup System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Strainer housing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Tubing	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314

**Table 3.3.2-19-26-IP2
Post-Accident Containment Air Sample System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-26-IP2: Post-Accident Containment Air Sample System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Gas analyzer	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Gas analyzer	Pressure boundary	Stainless steel	Air – indoor (int)	None	None	--	--	G
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Piping	Pressure boundary	Stainless steel	Air – indoor (int)	None	None	--	--	G
Tank	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Tank	Pressure boundary	Stainless steel	Air – indoor (int)	None	None	--	--	G

Table 3.3.2-19-26-IP2: Post-Accident Containment Air Sample System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Air – indoor (int)	None	None	--	--	G

**Table 3.3.2-19-27-IP2
Post-Accident Containment Air Vent System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-27-IP2: Post-Accident Containment Air Vent System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Filter housing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Filter housing	Pressure boundary	Stainless steel	Air – indoor (int)	None	None	--	--	G
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Piping	Pressure boundary	Stainless steel	Air – indoor (int)	None	None	--	--	G
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Air – indoor (int)	None	None	--	--	G

**Table 3.3.2-19-28-IP2
Primary Sampling System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-28-IP2: Primary Sampling System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Boric Acid Corrosion Prevention	VII.I-2 (A-102)	3.3.1-89	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	C
Filter housing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Filter housing	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VII.E1-20 (AP-82)	3.3.1-90	C
Filter housing	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C
Filter housing	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.A3-8 (AP-79)	3.3.1-91	C

Table 3.3.2-19-28-IP2: Primary Sampling System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Plastic	Air – indoor (ext)	None	None	--	--	F
Piping	Pressure boundary	Plastic	Treated water (int)	None	None	--	--	F
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Piping	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314
Piping	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VII.E1-20 (AP-82)	3.3.1-90	C
Piping	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C
Piping	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.A3-8 (AP-79)	3.3.1-91	C
Pump casing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Pump casing	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314

Table 3.3.2-19-28-IP2: Primary Sampling System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Tank	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Tank	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.E-40 (S-13)	3.4.1-6	C, 314
Tank	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VII.E1-20 (AP-82)	3.3.1-90	C
Tank	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	V.A-27 (EP-41)	3.2.1-49	C
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Tubing	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VII.E1-20 (AP-82)	3.3.1-90	C
Tubing	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C
Tubing	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.A3-8 (AP-79)	3.3.1-91	C

Table 3.3.2-19-28-IP2: Primary Sampling System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Plastic	Air – indoor (ext)	None	None	--	--	F
Valve body	Pressure boundary	Plastic	Treated water (int)	None	None	--	--	F
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Valve body	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314
Valve body	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VII.E1-20 (AP-82)	3.3.1-90	C
Valve body	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C
Valve body	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.A3-8 (AP-79)	3.3.1-91	C

**Table 3.3.2-19-29-IP2
Primary Water Makeup System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-29-IP2: Primary Water Makeup System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Filter housing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Filter housing	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314
Flow element	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Flow element	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A

Table 3.3.2-19-29-IP2: Primary Water Makeup System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314
Sight glass	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Sight glass	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314
Sight glass	Pressure boundary	Glass	Air – indoor (ext)	None	None	VII.J-8 (AP-14)	3.3.1-93	A
Sight glass	Pressure boundary	Glass	Treated water (int)	None	None	VII.J-13 (AP-51)	3.3.1-93	A
Strainer housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Strainer housing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314
Tank	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Tank	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.E-40 (S-13)	3.4.1-6	C, 314

Table 3.3.2-19-29-IP2: Primary Water Makeup System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Tubing	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314
Valve body	Pressure boundary	CASS	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	CASS	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314

**Table 3.3.2-19-30-IP2
Reactor Coolant System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-30-IP2: Reactor Coolant System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	V.E-4 (EP-25)	3.2.1-23	C
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Boric Acid Corrosion Prevention	V.E-2 (E-41)	3.2.1-45	C
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	IV.E-2 (RP-04)	3.3.1-86	C
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Boric Acid Corrosion Prevention	IV.C2-9 (R-17)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	V.A-25 (EP-46)	3.2.1-16	D, 316
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	V.F-12 (EP-18)	3.2.1-53	C
Piping	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	V.A-28 (E-12)	3.2.1-48	C
Piping	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	V.D1-27 (E-13)	3.2.1-1	C

Table 3.3.2-19-30-IP2: Reactor Coolant System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	V.A-27 (EP-41)	3.2.1-49	C
Pump casing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Boric Acid Corrosion Prevention	IV.C2-9 (R-17)	3.3.1-58	A
Pump casing	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	V.A-25 (EP-46)	3.2.1-16	D, 316
Rupture disk	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	V.F-12 (EP-18)	3.2.1-53	C
Rupture disk	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	V.A-28 (E-12)	3.2.1-48	C
Rupture disk	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	V.D1-27 (E-13)	3.2.1-1	C
Rupture disk	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	V.A-27 (EP-41)	3.2.1-49	C
Tank	Pressure boundary	Carbon steel coated	Air – indoor (ext)	Loss of material	Boric Acid Corrosion Prevention	IV.C2-9 (R-17)	3.3.1-58	A
Tank	Pressure boundary	Carbon steel coated	Treated borated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	F, 313

Table 3.3.2-19-30-IP2: Reactor Coolant System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Thermowell	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Boric Acid Corrosion Prevention	IV.C2-9 (R-17)	3.3.1-58	A
Thermowell	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	V.A-25 (EP-46)	3.2.1-16	D, 316
Thermowell	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	V.F-12 (EP-18)	3.2.1-53	C
Thermowell	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	V.A-28 (E-12)	3.2.1-48	C
Thermowell	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	V.D1-27 (E-13)	3.2.1-1	C
Thermowell	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	V.A-27 (EP-41)	3.2.1-49	C
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	V.F-12 (EP-18)	3.2.1-53	C
Tubing	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	V.A-28 (E-12)	3.2.1-48	C
Tubing	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	V.D1-27 (E-13)	3.2.1-1	C

Table 3.3.2-19-30-IP2: Reactor Coolant System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Tubing	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	V.A-27 (EP-41)	3.2.1-49	C
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Boric Acid Corrosion Prevention	IV.C2-9 (R-17)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	V.A-25 (EP-46)	3.2.1-16	D, 316
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	V.F-12 (EP-18)	3.2.1-53	C
Valve body	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	V.A-28 (E-12)	3.2.1-48	C
Valve body	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	V.D1-27 (E-13)	3.2.1-1	C
Valve body	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	V.A-27 (EP-41)	3.2.1-49	C

**Table 3.3.2-19-31-IP2
Radiation Monitoring System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-31-IP2: Radiation Monitoring System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.C1-19 (A-38)	3.3.1-76	E
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Piping	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.B1-5 (SP-17)	3.4.1-14	C, 314
Piping	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302

Table 3.3.2-19-31-IP2: Radiation Monitoring System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.C1-19 (A-38)	3.3.1-76	E
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.B1-5 (SP-17)	3.4.1-14	C, 314
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314

**Table 3.3.2-19-32-IP2
River Water Service System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-32-IP2: River Water Service System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.C1-19 (A-38)	3.3.1-76	E
Strainer housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Strainer housing	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.C1-19 (A-38)	3.3.1-76	E
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A

Table 3.3.2-19-32-IP2: River Water Service System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.C1-19 (A-38)	3.3.1-76	E
Valve body	Pressure boundary	Gray cast iron	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Gray cast iron	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.C1-19 (A-38)	3.3.1-76	E
Valve body	Pressure boundary	Gray cast iron	Raw water (int)	Loss of material	Selective Leaching	VII.C1-11 (A-51)	3.3.1-85	A
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	One-Time Inspection	VII.C1-15 (A-54)	3.3.1-79	E

**Table 3.3.2-19-33-IP2
Station Air System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-33-IP2: Station Air System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Compressor housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.D-3 (A-80)	3.3.1-57	A
Compressor housing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-14 (A-25)	3.3.1-47	D
Heat exchanger (shell)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Heat exchanger (shell)	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-1 (A-63)	3.3.1-48	D
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.D-3 (A-80)	3.3.1-57	A

Table 3.3.2-19-33-IP2: Station Air System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Carbon steel	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.D-2 (A-26)	3.3.1-53	E
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.D-3 (A-80)	3.3.1-57	A
Valve body	Pressure boundary	Carbon steel	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.D-2 (A-26)	3.3.1-53	E
Valve body	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Valve body	Pressure boundary	Copper alloy	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.G-9 (AP-78)	3.3.1-28	E

**Table 3.3.2-19-34-IP2
Boiler Blowdown System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-34-IP2: Boiler Blowdown System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	None	None	VIII.H-4 (S-34)	3.4.1-22	I, 310
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	C
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	None	None	VIII.H-7 (S-29)	3.4.1-28	I, 310
Piping	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314
Tank	Pressure boundary	Carbon steel	Air – indoor (ext)	None	None	VIII.H-7 (S-29)	3.4.1-28	I, 310
Tank	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	None	None	VIII.H-7 (S-29)	3.4.1-28	I, 310

Table 3.3.2-19-34-IP2: Boiler Blowdown System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314

**Table 3.3.2-19-35-IP2
Spent Fuel Pit Cooling System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-35-IP2: Spent Fuel Pit Cooling System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Boric Acid Corrosion Prevention	VII.I-2 (A-102)	3.3.1-89	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	C
Expansion joint	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Expansion joint	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VII.E1-20 (AP-82)	3.3.1-90	C
Expansion joint	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.A3-8 (AP-79)	3.3.1-91	A
Filter housing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A

Table 3.3.2-19-35-IP2: Spent Fuel Pit Cooling System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Filter housing	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VII.E1-20 (AP-82)	3.3.1-90	C
Filter housing	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.A3-8 (AP-79)	3.3.1-91	A
Flow element	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Flow element	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VII.E1-20 (AP-82)	3.3.1-90	C
Flow element	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.A3-8 (AP-79)	3.3.1-91	A
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Piping	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VII.E1-20 (AP-82)	3.3.1-90	C
Piping	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.A3-8 (AP-79)	3.3.1-91	A

Table 3.3.2-19-35-IP2: Spent Fuel Pit Cooling System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Pump casing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Pump casing	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VII.E1-20 (AP-82)	3.3.1-90	C
Pump casing	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.A3-8 (AP-79)	3.3.1-91	A
Strainer housing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Strainer housing	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VII.E1-20 (AP-82)	3.3.1-90	C
Strainer housing	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.A3-8 (AP-79)	3.3.1-91	A
Tank	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Tank	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VII.E1-20 (AP-82)	3.3.1-90	C

Table 3.3.2-19-35-IP2: Spent Fuel Pit Cooling System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Tank	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	V.A-27 (EP-41)	3.2.1-49	C
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Tubing	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VII.E1-20 (AP-82)	3.3.1-90	C
Tubing	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.A3-8 (AP-79)	3.3.1-91	A
Valve body	Pressure boundary	CASS	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	CASS	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VII.E1-20 (AP-82)	3.3.1-90	C
Valve body	Pressure boundary	CASS	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.A3-8 (AP-79)	3.3.1-91	A
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A

Table 3.3.2-19-35-IP2: Spent Fuel Pit Cooling System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VII.E1-20 (AP-82)	3.3.1-90	C
Valve body	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.A3-8 (AP-79)	3.3.1-91	A

**Table 3.3.2-19-36-IP2
Steam Generator Blowdown System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-36-IP2: Steam Generator Blowdown System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VIII.H-4 (S-34)	3.4.1-22	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	C
Flow element	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Flow element	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Flow element	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.F-25 (S-10)	3.4.1-4	A, 314
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Piping	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Flow-Accelerated Corrosion	VIII.F-26 (S-16)	3.4.1-29	A

Table 3.3.2-19-36-IP2: Steam Generator Blowdown System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.F-25 (S-10)	3.4.1-4	A, 314
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Piping	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.F-24 (SP-17)	3.4.1-14	A, 314
Piping	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Piping	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.F-23 (SP-16)	3.4.1-16	A, 314
Tank	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Tank	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.E-38 (SP-42)	3.4.1-14	C, 314
Tank	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.E-40 (S-13)	3.4.1-6	C, 314
Thermowell	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A

Table 3.3.2-19-36-IP2: Steam Generator Blowdown System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Thermowell	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Thermowell	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.F-25 (S-10)	3.4.1-4	A, 314
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.F-24 (SP-17)	3.4.1-14	A, 314
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.F-23 (SP-16)	3.4.1-16	A, 314
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Flow-Accelerated Corrosion	VIII.F-26 (S-16)	3.4.1-29	A

Table 3.3.2-19-36-IP2: Steam Generator Blowdown System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.F-25 (S-10)	3.4.1-4	A, 314
Valve body	Pressure boundary	CASS	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Valve body	Pressure boundary	CASS	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.F-24 (SP-17)	3.4.1-14	A, 314
Valve body	Pressure boundary	CASS	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Valve body	Pressure boundary	CASS	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.F-23 (SP-16)	3.4.1-16	A, 314
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.F-24 (SP-17)	3.4.1-14	A, 314
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.F-23 (SP-16)	3.4.1-16	A, 314

**Table 3.3.2-19-37-IP2
Safety Injection System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-37-IP2: Safety Injection System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	V.E-4 (EP-25)	3.2.1-23	A
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Boric Acid Corrosion Prevention	V.E-2 (E-41)	3.2.1-45	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	V.F-13 (EP-19)	3.2.1-57	C
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	V.F-12 (EP-18)	3.2.1-53	A
Piping	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	V.D1-30 (EP-41)	3.2.1-49	A
Pump casing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	V.F-12 (EP-18)	3.2.1-53	A
Pump casing	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	V.D1-30 (EP-41)	3.2.1-49	A
Tank	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	V.F-13 (EP-19)	3.2.1-57	A

Table 3.3.2-19-37-IP2: Safety Injection System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Tank	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	V.D1-30 (EP-41)	3.2.1-49	A
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	V.F-12 (EP-18)	3.2.1-53	A
Valve body	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	V.D1-30 (EP-41)	3.2.1-49	A

**Table 3.3.2-19-38-IP2
Secondary Sampling System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-38-IP2: Secondary Sampling System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Heat exchanger (shell)	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Heat exchanger (shell)	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-10 (A-52)	3.3.1-50	D
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Piping	Pressure boundary	Stainless steel	Steam (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.A-10 (SP-44)	3.4.1-39	C
Piping	Pressure boundary	Stainless steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	G

Table 3.3.2-19-38-IP2: Secondary Sampling System

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Stainless steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-12 (SP-43)	3.4.1-37	C
Pump casing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Pump casing	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Valve body	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314
Valve body	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Valve body	Pressure boundary	Copper alloy	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-5 (SP-61)	3.4.1-15	C, 314
Valve body	Pressure boundary	Copper alloy > 15% Zn	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C

Table 3.3.2-19-38-IP2: Secondary Sampling System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Selective Leaching	VII.C2-7 (AP-32)	3.3.1-84	C
Valve body	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-5 (SP-61)	3.4.1-15	C, 314
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Steam (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.A-10 (SP-44)	3.4.1-39	C
Valve body	Pressure boundary	Stainless steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	G
Valve body	Pressure boundary	Stainless steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-12 (SP-43)	3.4.1-37	C

**Table 3.3.2-19-39-IP2
Service Water System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-39-IP2: Service Water System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Condensation (ext)	Loss of material	Bolting Integrity	VII.D-1 (A-103)	3.3.1-44	C
Bolting	Pressure boundary	Stainless steel	Condensation (ext)	Loss of material	Bolting Integrity	VII.F1-1 (A-09)	3.3.1-27	E
Heat exchanger (shell)	Pressure boundary	Carbon steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.I-11 (A-81)	3.3.1-58	A
Heat exchanger (shell)	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-5 (A-64)	3.3.1-77	A
Piping	Pressure boundary	Carbon steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.I-11 (A-81)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-19 (A-38)	3.3.1-76	A
Piping	Pressure boundary	Plastic	Condensation (ext)	None	None	--	--	F
Piping	Pressure boundary	Plastic	Raw water (int)	None	None	--	--	F

Table 3.3.2-19-39-IP2: Service Water System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Stainless steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.F1-1 (A-09)	3.3.1-27	E
Piping	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-15 (A-54)	3.3.1-79	A
Strainer housing	Pressure boundary	Carbon steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.I-11 (A-81)	3.3.1-58	A
Strainer housing	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-19 (A-38)	3.3.1-76	A
Thermowell	Pressure boundary	Carbon steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.I-11 (A-81)	3.3.1-58	A
Thermowell	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-19 (A-38)	3.3.1-76	A
Thermowell	Pressure boundary	Stainless steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.F1-1 (A-09)	3.3.1-27	E
Thermowell	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-15 (A-54)	3.3.1-79	A
Valve body	Pressure boundary	Carbon steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.I-11 (A-81)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-19 (A-38)	3.3.1-76	A

Table 3.3.2-19-39-IP2: Service Water System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	CASS	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.F1-1 (A-09)	3.3.1-27	E
Valve body	Pressure boundary	CASS	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-15 (A-54)	3.3.1-79	A
Valve body	Pressure boundary	Copper alloy	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.F1-16 (A-46)	3.3.1-25	E
Valve body	Pressure boundary	Copper alloy	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-9 (A-44)	3.3.1-81	A
Valve body	Pressure boundary	Copper alloy > 15% Zn	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.F1-16 (A-46)	3.3.1-25	E
Valve body	Pressure boundary	Copper alloy > 15% Zn	Raw water (int)	Loss of material	Selective Leaching	VII.C1-10 (A-47)	3.3.1-84	A
Valve body	Pressure boundary	Copper alloy > 15% Zn	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-9 (A-44)	3.3.1-81	A
Valve body	Pressure boundary	Gray cast iron	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.I-11 (A-81)	3.3.1-58	A
Valve body	Pressure boundary	Gray cast iron	Raw water (int)	Loss of material	Selective Leaching	VII.C1-11 (A-51)	3.3.1-85	A
Valve body	Pressure boundary	Gray cast iron	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-19 (A-38)	3.3.1-76	A

Table 3.3.2-19-39-IP2: Service Water System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Plastic	Condensation (ext)	None	None	--	--	F
Valve body	Pressure boundary	Plastic	Raw water (int)	None	None	--	--	F
Valve body	Pressure boundary	Stainless steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.F1-1 (A-09)	3.3.1-27	E
Valve body	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-15 (A-54)	3.3.1-79	A

**Table 3.3.2-19-40-IP2
Technical Support Center Diesel System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-40-IP2: Technical Support Center Diesel System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-10 (A-30)	3.3.1-20	D, 316
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-10 (A-30)	3.3.1-20	D, 316

**Table 3.3.2-19-41-IP2
Main Turbine System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-41-IP2: Main Turbine System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VIII.H-4 (S-34)	3.4.1-22	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	C
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Piping	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VIII.A-14 (SP-25)	3.4.1-7	B, 316
Turbine housing	Pressure boundary	Carbon steel	Air – indoor (ext)	None	None	VIII.H-7 (S-29)	3.4.1-28	I, 310
Turbine housing	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	A, 314
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Valve body	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VIII.A-14 (SP-25)	3.4.1-7	B, 316

Table 3.3.2-19-41-IP2: Main Turbine System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Valve body	Pressure boundary	Stainless steel	Lube oil (int)	Loss of material	Oil Analysis	VIII.A-9 (SP-38)	3.4.1-19	B, 316

**Table 3.3.2-19-42-IP2
Waste Disposal System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-42-IP2: Waste Disposal System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Boric Acid Corrosion Prevention	VII.I-2 (A-102)	3.3.1-89	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Filter housing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Filter housing	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	One-Time Inspection	VII.C1-15 (A-54)	3.3.1-79	E
Filter housing	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	C
Flow element	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Flow element	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	One-Time Inspection	VII.C1-15 (A-54)	3.3.1-79	E

Table 3.3.2-19-42-IP2: Waste Disposal System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Flow element	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	C
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.F1-3 (A-08)	3.3.1-72	E
Piping	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.C1-19 (A-38)	3.3.1-76	E
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Piping	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	One-Time Inspection	VII.C1-15 (A-54)	3.3.1-79	E
Piping	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	C
Pump casing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A

Table 3.3.2-19-42-IP2: Waste Disposal System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Pump casing	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	One-Time Inspection	VII.C1-15 (A-54)	3.3.1-79	E
Pump casing	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	C
Sight glass	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Sight glass	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.C1-19 (A-38)	3.3.1-76	E
Sight glass	Pressure boundary	Glass	Air – indoor (ext)	None	None	VII.J-8 (AP-14)	3.3.1-93	A
Sight glass	Pressure boundary	Glass	Raw water (int)	None	None	VII.J-11 (AP-50)	3.3.1-93	A
Sight glass	Pressure boundary	Glass	Treated borated water (int)	None	None	VII.J-12 (AP-52)	3.3.1-93	A
Sight glass	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Sight glass	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	C

Table 3.3.2-19-42-IP2: Waste Disposal System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Strainer housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Strainer housing	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.C1-19 (A-38)	3.3.1-76	E
Strainer housing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314
Strainer housing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Strainer housing	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	One-Time Inspection	VII.C1-15 (A-54)	3.3.1-79	E
Strainer housing	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	C
Tank	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Tank	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.C1-19 (A38)	3.3.1-76	E
Tank	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314

Table 3.3.2-19-42-IP2: Waste Disposal System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Tank	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Tank	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	One-Time Inspection	VII.C1-15 (A-54)	3.3.1-79	E
Tank	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	V.A-27 (EP-41)	3.2.1-49	C
Thermowell	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Thermowell	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	One-Time Inspection	VII.C1-15 (A-54)	3.3.1-79	E
Thermowell	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	C
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.F1-3 (A-08)	3.3.1-72	E
Valve body	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.C1-19 (A-38)	3.3.1-76	E

Table 3.3.2-19-42-IP2: Waste Disposal System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314
Valve body	Pressure boundary	CASS	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	CASS	Raw water (int)	Loss of material	One-Time Inspection	VII.C1-15 (A-54)	3.3.1-79	E
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	One-Time Inspection	VII.C1-15 (A-54)	3.3.1-79	E
Valve body	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	C

**Table 3.3.2-19-43-IP2
Water Treatment Plant System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-43-IP2: Water Treatment Plant System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Filter housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Filter housing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305
Flow element	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Flow element	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305
Heat exchanger (shell)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A

Table 3.3.2-19-43-IP2: Water Treatment Plant System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Heat exchanger (shell)	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Piping	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305
Piping	Pressure boundary	Plastic	Air – indoor (ext)	None	None	--	--	F
Piping	Pressure boundary	Plastic	Treated water (int)	None	None	--	--	F
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Piping	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	One-Time Inspection	--	--	G, 305

Table 3.3.2-19-43-IP2: Water Treatment Plant System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Pump casing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Pump casing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305
Strainer housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Strainer housing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305
Tank	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Tank	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Valve body	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314

Table 3.3.2-19-43-IP2: Water Treatment Plant System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305
Valve body	Pressure boundary	Gray cast iron	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Gray cast iron	Treated water (int)	Loss of material	Selective Leaching	VII.G-14 (A-51)	3.3.1-85	C, 303
Valve body	Pressure boundary	Gray cast iron	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	One-Time Inspection	--	--	G, 305

**Table 3.3.2-19-1-IP3
Ammonia / Morpholine Addition System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-1-IP3: Ammonia / Morpholine Addition System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Piping	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	One-Time Inspection	--	--	G, 318
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	One-Time Inspection	--	--	G, 318

**Table 3.3.2-19-2-IP3
Auxiliary Steam and Condensate Return System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-2-IP3: Auxiliary Steam and Condensate Return System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Heater housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Heater housing	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C, 309
Heater housing	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314
Heater housing	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C, 309
Heater housing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A

Table 3.3.2-19-2-IP3: Auxiliary Steam and Condensate Return System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C, 309
Piping	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Flow-Accelerated Corrosion	VIII.A-17 (S-15)	3.4.1-29	C
Piping	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314
Piping	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C, 309
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Flow-Accelerated Corrosion	VIII.D1-9 (S-16)	3.4.1-29	C, 311
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314
Pump casing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Pump casing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314
Sight glass	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A

Table 3.3.2-19-2-IP3: Auxiliary Steam and Condensate Return System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Sight glass	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C, 309
Sight glass	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314
Sight glass	Pressure boundary	Glass	Air – indoor (ext)	None	None	VII.J-8 (AP-14)	3.3.1-93	A
Sight glass	Pressure boundary	Glass	Treated water (int)	None	None	VII.J-11 (AP-50)	3.3.1-93	A
Steam trap	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Steam trap	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C, 309
Steam trap	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Flow-Accelerated Corrosion	VIII.A-17 (S-15)	3.4.1-29	C
Steam trap	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314
Strainer housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A

Table 3.3.2-19-2-IP3: Auxiliary Steam and Condensate Return System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Strainer housing	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C, 309
Strainer housing	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314
Strainer housing	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C, 309
Strainer housing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314
Tank	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Tank	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314
Thermowell	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Thermowell	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C, 309
Thermowell	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314

Table 3.3.2-19-2-IP3: Auxiliary Steam and Condensate Return System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Thermowell	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C, 309
Thermowell	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Tubing	Pressure boundary	Stainless steel	Steam (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.A-10 (SP-44)	3.4.1-39	C
Tubing	Pressure boundary	Stainless steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	G
Tubing	Pressure boundary	Stainless steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-12 (SP-43)	3.4.1-37	C
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.B1-5 (SP-17)	3.4.1-14	C, 314
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314

Table 3.3.2-19-2-IP3: Auxiliary Steam and Condensate Return System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C, 309
Valve body	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Flow-Accelerated Corrosion	VIII.A-17 (S-15)	3.4.1-29	C
Valve body	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C, 309
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Flow-Accelerated Corrosion	VIII.D1-9 (S-16)	3.4.1-29	C, 311
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314
Valve body	Pressure boundary	Copper alloy > 15% Zn	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Valve body	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Selective Leaching	VII.C2-7 (AP-32)	3.3.1-84	C, 314

Table 3.3.2-19-2-IP3: Auxiliary Steam and Condensate Return System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-5 (SP-61)	3.4.1-15	C, 314
Valve body	Pressure boundary	Copper alloy > 15% Zn	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	--	--	G
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Steam (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.A-10 (SP-44)	3.4.1-39	C
Valve body	Pressure boundary	Stainless steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	G
Valve body	Pressure boundary	Stainless steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-12 (SP-43)	3.4.1-37	C
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.B1-5 (SP-17)	3.4.1-14	C, 314
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302

Table 3.3.2-19-2-IP3: Auxiliary Steam and Condensate Return System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314

**Table 3.3.2-19-3-IP3
Boron and Layup Chemical Addition System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-3-IP3: Boron and Layup Chemical Addition System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	C
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Piping	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	One-Time Inspection	--	--	G, 318
Pump casing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Pump casing	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	One-Time Inspection	--	--	G, 318
Sight glass	Pressure boundary	Glass	Air – indoor (ext)	None	None	VII.J-8 (AP-14)	3.3.1-93	A
Sight glass	Pressure boundary	Glass	Treated water (int)	None	None	VII.J-13 (AP-51)	3.3.1-93	A

Table 3.3.2-19-3-IP3: Boron and Layup Chemical Addition System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Sight glass	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Sight glass	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	One-Time Inspection	--	--	G, 318
Tank	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Tank	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	One-Time Inspection	--	--	G, 318
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Tubing	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	One-Time Inspection	--	--	G, 318
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Valve body	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	One-Time Inspection	--	--	G, 318

**Table 3.3.2-19-4-IP3
Condenser Air Removal System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-4-IP3: Condenser Air Removal System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Ejector	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Ejector	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314
Flow element	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Flow element	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314
Heat exchanger (shell)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A

Table 3.3.2-19-4-IP3: Condenser Air Removal System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Heat exchanger (shell)	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.E-37 (S-19)	3.4.1-3	C, 314
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Piping	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Piping	Pressure boundary	Stainless steel	Steam (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.A-10 (SP-44)	3.4.1-39	C
Piping	Pressure boundary	Stainless steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	G
Piping	Pressure boundary	Stainless steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-12 (SP-43)	3.4.1-37	C

Table 3.3.2-19-4-IP3: Condenser Air Removal System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314
Pump casing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Pump casing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314
Sight glass	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Sight glass	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314
Sight glass	Pressure boundary	Glass	Air – indoor (ext)	None	None	VII.J-8 (AP-14)	3.3.1-93	A
Sight glass	Pressure boundary	Glass	Treated water (int)	None	None	VII.J-13 (AP-51)	3.3.1-93	A
Steam trap	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Steam trap	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C

Table 3.3.2-19-4-IP3: Condenser Air Removal System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Steam trap	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314
Tank	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Tank	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Valve body	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314
Valve body	Pressure boundary	CASS	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	CASS	Steam (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.A-10 (SP-44)	3.4.1-39	C

Table 3.3.2-19-4-IP3: Condenser Air Removal System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	CASS	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	F
Valve body	Pressure boundary	CASS	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-12 (SP-43)	3.4.1-37	C
Valve body	Pressure boundary	CASS	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Steam (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.A-10 (SP-44)	3.4.1-39	C
Valve body	Pressure boundary	Stainless steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	G
Valve body	Pressure boundary	Stainless steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-12 (SP-43)	3.4.1-37	C
Valve body	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314

**Table 3.3.2-19-5-IP3
Chlorination System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-5-IP3: Chlorination System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Piping	Pressure boundary	Gray cast iron	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Gray cast iron	Treated water (int)	Loss of material	Selective Leaching	VII.G-14 (A-51)	3.3.1-85	C, 303
Piping	Pressure boundary	Gray cast iron	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305
Valve body	Pressure boundary	Gray cast iron	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Gray cast iron	Treated water (int)	Loss of material	Selective Leaching	VII.G-14 (A-51)	3.3.1-85	C, 303
Valve body	Pressure boundary	Gray cast iron	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305

**Table 3.3.2-19-6-IP3
Condensate System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-6-IP3: Condensate System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VIII.H-4 (S-34)	3.4.1-22	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	C
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Flow-Accelerated Corrosion	VIII.E-35 (S-16)	3.4.1-29	A
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.E-34 (S-10)	3.4.1-4	A, 314
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Piping	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.E-29 (SP-16)	3.4.1-16	A, 314
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A

Table 3.3.2-19-6-IP3: Condensate System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Flow-Accelerated Corrosion	VIII.E-35 (S-16)	3.4.1-29	A
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.E-34 (S-10)	3.4.1-4	A, 314
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Valve body	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.E-29 (SP-16)	3.4.1-16	A, 314

**Table 3.3.2-19-7-IP3
Condensate Polisher System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-7-IP3: Condensate Polisher System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VIII.H-4 (S-34)	3.4.1-22	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	C
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Piping	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.E-29 (SP-16)	3.4.1-16	A, 314
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Valve body	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.E-29 (SP-16)	3.4.1-16	A, 314

**Table 3.3.2-19-8-IP3
Condensate Pump Discharge System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-8-IP3: Condensate Pump Discharge System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VIII.H-4 (S-34)	3.4.1-22	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	C
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.E-34 (S-10)	3.4.1-4	A, 314
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Piping	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.E-29 (SP-16)	3.4.1-16	A, 314
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A

Table 3.3.2-19-8-IP3: Condensate Pump Discharge System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.E-34 (S-10)	3.4.1-4	A, 314
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Valve body	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.E-29 (SP-16)	3.4.1-16	A, 314

**Table 3.3.2-19-9-IP3
Condensate Pump Suction System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-9-IP3: Condensate Pump Suction System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VIII.H-4 (S-34)	3.4.1-22	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	C
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.E-34 (S-10)	3.4.1-4	A, 314
Thermowell	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Thermowell	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.E-34 (S-10)	3.4.1-4	A, 314
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A

Table 3.3.2-19-9-IP3: Condensate Pump Suction System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.E-34 (S-10)	3.4.1-4	A, 314

**Table 3.3.2-19-10-IP3
Containment Spray System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-10-IP3: Containment Spray System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	V.E-4 (EP-25)	3.2.1-23	A
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Boric Acid Corrosion Prevention	V.E-2 (E-41)	3.2.1-45	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	V.F-13 (EP-19)	3.2.1-57	C
Flow element	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	V.F-12 (EP-18)	3.2.1-53	A
Flow element	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	V.A-27 (EP-41)	3.2.1-49	A
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	V.F-12 (EP-18)	3.2.1-53	A
Piping	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	V.A-27 (EP-41)	3.2.1-49	A

Table 3.3.2-19-10-IP3: Containment Spray System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	--	--	G, 318
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	V.F-12 (EP-18)	3.2.1-53	A
Valve body	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	V.A-27 (EP-41)	3.2.1-49	A
Valve body	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	--	--	G, 318

**Table 3.3.2-19-11-IP3
Chemical and Volume Control System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-11-IP3: Chemical and Volume Control System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Boric Acid Corrosion Prevention	VII.I-2 (A-102)	3.3.1-89	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	C
Flow element	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Flow element	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	A
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Piping	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	A
Tank	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A

Table 3.3.2-19-11-IP3: Chemical and Volume Control System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Tank	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	V.A-27 (EP-41)	3.2.1-49	C
Thermowell	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Thermowell	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	A
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314
Valve body	Pressure boundary	CASS	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	CASS	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	A
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Valve body	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	A

**Table 3.3.2-19-12-IP3
Circulating Water System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-12-IP3: Circulating Water System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VIII.H-4 (S-34)	3.4.1-22	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	C
Expansion joint	Pressure boundary	Elastomer	Air – indoor (ext)	Change in material properties	Periodic surveillance and preventive maintenance	VII.F1-7 (A-17)	3.3.1-11	E
Expansion joint	Pressure boundary	Elastomer	Air – indoor (ext)	Cracking	Periodic surveillance and preventive maintenance	VII.F1-7 (A-17)	3.3.1-11	E
Expansion joint	Pressure boundary	Elastomer	Raw water (int)	Change in material properties	Periodic surveillance and preventive maintenance	VII.C1-1 (AP-75)	3.3.1-75	E
Expansion joint	Pressure boundary	Elastomer	Raw water (int)	Cracking	Periodic surveillance and preventive maintenance	VII.C1-1 (AP-75)	3.3.1-75	E
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A

Table 3.3.2-19-12-IP3: Circulating Water System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VIII.G-36 (S-12)	3.4.1-8	E
Pump casing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Pump casing	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VIII.G-36 (S-12)	3.4.1-8	E
Sight glass	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Sight glass	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VIII.G-36 (S-12)	3.4.1-8	E
Sight glass	Pressure boundary	Glass	Air – indoor (ext)	None	None	VIII.I-5 (SP-9)	3.4.1-40	A
Sight glass	Pressure boundary	Glass	Raw water (int)	None	None	VIII.I-7 (SP-34)	3.4.1-40	A
Tank	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Tank	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VIII.G-36 (S-12)	3.4.1-8	E

Table 3.3.2-19-12-IP3: Circulating Water System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Thermowell	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Thermowell	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VIII.G-36 (S-12)	3.4.1-8	E
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Valve body	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VIII.G-36 (S-12)	3.4.1-8	E
Valve body	Pressure boundary	CASS	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Valve body	Pressure boundary	CASS	Raw water (int)	Loss of material	One-Time Inspection	VIII.E-27 (SP-36)	3.4.1-32	E

**Table 3.3.2-19-13-IP3
City Water Makeup System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-13-IP3: City Water Makeup System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305
Piping	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Piping	Pressure boundary	Copper alloy	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305
Piping	Pressure boundary	Gray cast iron	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Gray cast iron	Treated water (int)	Loss of material	Selective Leaching	VII.G-14 (A-51)	3.3.1-85	C, 303

Table 3.3.2-19-13-IP3: City Water Makeup System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Gray cast iron	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305
Strainer housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Strainer housing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305
Valve body	Pressure boundary	CASS	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	CASS	Treated water (int)	Loss of material	One-Time Inspection	--	--	G, 305
Valve body	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Valve body	Pressure boundary	Copper alloy	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Copper alloy > 15% Zn	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Valve body	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Selective Leaching	VII.G-13 (A-47)	3.3.1-84	C, 303
Valve body	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305
Valve body	Pressure boundary	Gray cast iron	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Gray cast iron	Treated water (int)	Loss of material	Selective Leaching	VII.G-14 (A-51)	3.3.1-85	C, 303
Valve body	Pressure boundary	Gray cast iron	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	One-Time Inspection	--	--	G, 305

**Table 3.3.2-19-14-IP3
Condensate Transfer System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-14-IP3: Condensate Transfer System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VIII.H-4 (S-34)	3.4.1-22	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	C
Ejector	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Ejector	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.E-34 (S-10)	3.4.1-4	A, 314
Expansion joint	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Expansion joint	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.E-30 (SP-17)	3.4.1-14	A, 314
Expansion joint	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302

Table 3.3.2-19-14-IP3: Condensate Transfer System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Expansion joint	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.E-29 (SP-16)	3.4.1-16	A, 314
Flow element	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Flow element	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Flow element	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.E-34 (S-10)	3.4.1-4	A, 314
Heat exchanger (shell)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Heat exchanger (shell)	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.E-37 (S-19)	3.4.1-3	A, 314
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Piping	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Flow-Accelerated Corrosion	VIII.E-35 (S-16)	3.4.1-29	A

Table 3.3.2-19-14-IP3: Condensate Transfer System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.E-34 (S-10)	3.4.1-4	A, 314
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Piping	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.E-30 (SP-17)	3.4.1-14	A, 314
Piping	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Piping	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.E-29 (SP-16)	3.4.1-16	A, 314
Pump casing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Pump casing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.E-34 (S-10)	3.4.1-4	A, 314
Sight glass	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Sight glass	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C

Table 3.3.2-19-14-IP3: Condensate Transfer System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Sight glass	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.E-34 (S-10)	3.4.1-4	A, 314
Sight glass	Pressure boundary	Glass	Air – indoor (ext)	None	None	VIII.I-5 (SP-9)	3.4.1-40	A
Sight glass	Pressure boundary	Glass	Treated water (int)	None	None	VIII.I-8 (SP-35)	3.4.1-40	A
Strainer housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Strainer housing	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Strainer housing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.E-34 (S-10)	3.4.1-4	A, 314
Tank	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Tank	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.E-40 (S-13)	3.4.1-6	A, 314
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A

Table 3.3.2-19-14-IP3: Condensate Transfer System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.E-30 (SP-17)	3.4.1-14	A, 314
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.E-29 (SP-16)	3.4.1-16	A, 314
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Flow-Accelerated Corrosion	VIII.E-35 (S-16)	3.4.1-29	A
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.E-34 (S-10)	3.4.1-4	A, 314
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.E-30 (SP-17)	3.4.1-14	A, 314

Table 3.3.2-19-14-IP3: Condensate Transfer System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.E-29 (SP-16)	3.4.1-16	A, 314

**Table 3.3.2-19-15-IP3
Demineralized Water System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-15-IP3: Demineralized Water System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Piping	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A

Table 3.3.2-19-15-IP3: Demineralized Water System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314

**Table 3.3.2-19-16-IP3
Emergency Diesel Generator System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-16-IP3: Emergency Diesel Generator System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Condensation (int)	Cracking – Fatigue	TLAA – metal fatigue	--	--	H
Piping	Pressure boundary	Carbon steel	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.H2-21 (A-23)	3.3.1-71	E
Piping	Pressure boundary	Carbon steel	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H2-24 (A-30)	3.3.1-20	B, 316
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Piping	Pressure boundary	Stainless steel	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-6 (AP-54)	3.3.1-32	D, 316

Table 3.3.2-19-16-IP3: Emergency Diesel Generator System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Tank	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Tank	Pressure boundary	Carbon steel	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H2-24 (A-30)	3.3.1-20	B, 316
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H1-6 (AP-54)	3.3.1-32	D, 316

**Table 3.3.2-19-17-IP3
Emergency Generators System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-17-IP3: Emergency Generators System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H2-24 (A-30)	3.3.1-20	B, 316
Pump casing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Pump casing	Pressure boundary	Carbon steel	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H2-24 (A-30)	3.3.1-20	B, 316
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Fuel oil (int)	Loss of material	Diesel Fuel Monitoring	VII.H2-24 (A-30)	3.3.1-20	B, 316

**Table 3.3.2-19-18-IP3
Extraction Steam System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-18-IP3: Extraction Steam System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VIII.H-4 (S-34)	3.4.1-22	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	C
Expansion joint	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Expansion joint	Pressure boundary	Stainless steel	Steam (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.A-10 (SP-44)	3.4.1-39	C
Expansion joint	Pressure boundary	Stainless steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	H
Expansion joint	Pressure boundary	Stainless steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-12 (SP-43)	3.4.1-37	C
Orifice	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A

Table 3.3.2-19-18-IP3: Extraction Steam System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Orifice	Pressure boundary	Stainless steel	Steam (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.A-10 (SP-44)	3.4.1-39	C
Orifice	Pressure boundary	Stainless steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	H
Orifice	Pressure boundary	Stainless steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-12 (SP-43)	3.4.1-37	C
Orifice	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.C-2 (SP-17)	3.4.1-14	A, 314
Orifice	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Orifice	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.C-1 (SP-16)	3.4.1-16	A, 314
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Piping	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Piping	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Flow-Accelerated Corrosion	VIII.C-5 (S-15)	3.4.1-29	A

Table 3.3.2-19-18-IP3: Extraction Steam System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.C-4 (S-06)	3.4.1-2	A, 314
Piping	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Flow-Accelerated Corrosion	VIII.D1-9 (S-16)	3.4.1-29	C
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.C-7 (S-10)	3.4.1-4	A, 314
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Piping	Pressure boundary	Stainless steel	Steam (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.A-10 (SP-44)	3.4.1-39	C
Piping	Pressure boundary	Stainless steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	H
Piping	Pressure boundary	Stainless steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-12 (SP-43)	3.4.1-37	C
Piping	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.C-2 (SP-17)	3.4.1-14	A, 314

Table 3.3.2-19-18-IP3: Extraction Steam System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Piping	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.C-1 (SP-16)	3.4.1-16	A, 314
Steam trap	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Steam trap	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Steam trap	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Flow-Accelerated Corrosion	VIII.C-5 (S-15)	3.4.1-29	A
Steam trap	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.C-4 (S-06)	3.4.1-2	A, 314
Strainer housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Strainer housing	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Strainer housing	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.C-4 (S-06)	3.4.1-2	A, 314

Table 3.3.2-19-18-IP3: Extraction Steam System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Strainer housing	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Strainer housing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.C-7 (S-10)	3.4.1-4	A, 314
Thermowell	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Thermowell	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Thermowell	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.C-4 (S-06)	3.4.1-2	A, 314
Thermowell	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Thermowell	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.C-7 (S-10)	3.4.1-4	A, 314
Thermowell	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Thermowell	Pressure boundary	Stainless steel	Steam (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.A-10 (SP-44)	3.4.1-39	C

Table 3.3.2-19-18-IP3: Extraction Steam System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Thermowell	Pressure boundary	Stainless steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	H
Thermowell	Pressure boundary	Stainless steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-12 (SP-43)	3.4.1-37	C
Thermowell	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.C-2 (SP-17)	3.4.1-14	A, 314
Thermowell	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Thermowell	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.C-1 (SP-16)	3.4.1-16	A, 314
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Tubing	Pressure boundary	Stainless steel	Steam (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.A-10 (SP-44)	3.4.1-39	C
Tubing	Pressure boundary	Stainless steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	H
Tubing	Pressure boundary	Stainless steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-12 (SP-43)	3.4.1-37	C

Table 3.3.2-19-18-IP3: Extraction Steam System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.C-2 (SP-17)	3.4.1-14	A, 314
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.C-1 (SP-16)	3.4.1-16	A, 314
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Valve body	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Valve body	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Flow-Accelerated Corrosion	VIII.C-5 (S-15)	3.4.1-29	A
Valve body	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.C-4 (S-06)	3.4.1-2	A, 314
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Flow-Accelerated Corrosion	VIII.D1-9 (S-16)	3.4.1-29	C

Table 3.3.2-19-18-IP3: Extraction Steam System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.C-7 (S-10)	3.4.1-4	A, 314
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Valve body	Pressure boundary	Stainless steel	Steam (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.A-10 (SP-44)	3.4.1-39	C
Valve body	Pressure boundary	Stainless steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	H
Valve body	Pressure boundary	Stainless steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-12 (SP-43)	3.4.1-37	C
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.C-2 (SP-17)	3.4.1-14	A, 314
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.C-1 (SP-16)	3.4.1-16	A, 314

**Table 3.3.2-19-19-IP3
Floor Drains
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-19-IP3: Floor Drains								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.C1-19 (A-38)	3.3.1-76	E
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.C1-19 (A-38)	3.3.1-76	E

**Table 3.3.2-19-20-IP3
Fire Water System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-20-IP3: Fire Water System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Fire protection foam (int)	Loss of material	Fire Water System	--	--	G
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Fire Water System	VII.G-24 (A-33)	3.3.1-68	B, 303
Piping	Pressure boundary	Gray cast iron	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Gray cast iron	Treated water (int)	Loss of material	Fire Water System	VII.G-24 (A-33)	3.3.1-68	B, 303
Piping	Pressure boundary	Gray cast iron	Treated water (int)	Loss of material	Selective Leaching	VII.G-14 (A-51)	3.3.1-85	A, 303

Table 3.3.2-19-20-IP3: Fire Water System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Strainer housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Strainer housing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Fire Water System	VII.G-24 (A-33)	3.3.1-68	B, 303
Tank	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Tank	Pressure boundary	Carbon steel	Fire protection foam (int)	Loss of material	Fire Water System	--	--	G
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Fire protection foam (int)	Loss of material	Fire Water System	--	--	G
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Fire Water System	VII.G-24 (A-33)	3.3.1-68	B, 303
Valve body	Pressure boundary	Copper alloy > 15% Zn	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Valve body	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Fire Water System	VII.G-12 (A-45)	3.3.1-70	B, 303
Valve body	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Selective Leaching	VII.G-13 (A-47)	3.3.1-84	A, 303

Table 3.3.2-19-20-IP3: Fire Water System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Gray cast iron	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Gray cast iron	Treated water (int)	Loss of material	Fire Water System	VII.G-24 (A-33)	3.3.1-68	B, 303
Valve body	Pressure boundary	Gray cast iron	Treated water (int)	Loss of material	Selective Leaching	VII.G-14 (A-51)	3.3.1-85	A, 303

**Table 3.3.2-19-21-IP3
Fuel Storage Building HVAC System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-21-IP3: Fuel Storage Building HVAC System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F2-2 (A-10)	3.3.1-56	A
Piping	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Piping	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F2-2 (A-10)	3.3.1-56	A
Valve body	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C

Table 3.3.2-19-21-IP3: Fuel Storage Building HVAC System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314

**Table 3.3.2-19-22-IP3
Feedwater System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-22-IP3: Feedwater System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VIII.H-4 (S-34)	3.4.1-22	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	C
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Piping	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.D1-8 (S-10)	3.4.1-4	A, 314
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.D1-5 (SP-17)	3.4.1-14	A, 314
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302

Table 3.3.2-19-22-IP3: Feedwater System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.D1-4 (SP-16)	3.4.1-16	A, 314
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.D1-8 (S-10)	3.4.1-4	A, 314
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.D1-5 (SP-17)	3.4.1-14	A, 314
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.D1-4 (SP-16)	3.4.1-16	A, 314

**Table 3.3.2-19-23-IP3
Main Feedwater Pump and Services
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-23-IP3: Main Feedwater Pump and Services								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VIII.H-4 (S-34)	3.4.1-22	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	C
Expansion joint	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Expansion joint	Pressure boundary	Stainless steel	Steam (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.A-10 (SP-44)	3.4.1-39	C
Expansion joint	Pressure boundary	Stainless steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	H
Expansion joint	Pressure boundary	Stainless steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-12 (SP-43)	3.4.1-37	C
Expansion joint	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.D1-5 (SP-17)	3.4.1-14	A, 314

Table 3.3.2-19-23-IP3: Main Feedwater Pump and Services								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Expansion joint	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Expansion joint	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.D1-4 (SP-16)	3.4.1-16	A, 314
Filter housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Filter housing	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VIII.D1-6 (SP-25)	3.4.1-7	B, 316
Flow element	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Flow element	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Flow element	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314
Flow element	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Flow element	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.D1-8 (S-10)	3.4.1-4	A, 314

Table 3.3.2-19-23-IP3: Main Feedwater Pump and Services								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Heat exchanger (shell)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Heat exchanger (shell)	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VIII.G-6 (S-17)	3.4.1-12	D, 316
Heat exchanger (shell)	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Service Water Integrity	VIII.E-6 (S-24)	3.4.1-31	C
Heat exchanger (shell)	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VIII.A-1 (S-23)	3.4.1-24	D
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Piping	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Piping	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Flow-Accelerated Corrosion	VIII.A-17 (S-15)	3.4.1-29	C
Piping	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314
Piping	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C

Table 3.3.2-19-23-IP3: Main Feedwater Pump and Services								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Flow-Accelerated Corrosion	VIII.D1-9 (S-16)	3.4.1-29	A
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.D1-8 (S-10)	3.4.1-4	A, 314
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Piping	Pressure boundary	Stainless steel	Steam (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.A-10 (SP-44)	3.4.1-39	C
Piping	Pressure boundary	Stainless steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	H
Piping	Pressure boundary	Stainless steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-12 (SP-43)	3.4.1-37	C
Piping	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.D1-5 (SP-17)	3.4.1-14	A, 314
Piping	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Piping	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.D1-4 (SP-16)	3.4.1-16	A, 314

Table 3.3.2-19-23-IP3: Main Feedwater Pump and Services								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Pump casing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Pump casing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.D1-8 (S-10)	3.4.1-4	A, 314
Steam trap	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Steam trap	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TCAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Steam trap	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Flow-Accelerated Corrosion	VIII.A-17 (S-15)	3.4.1-29	C
Steam trap	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314
Strainer housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Strainer housing	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TCAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Strainer housing	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314

Table 3.3.2-19-23-IP3: Main Feedwater Pump and Services								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Strainer housing	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Strainer housing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.D1-8 (S-10)	3.4.1-4	A, 314
Tank	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Tank	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VIII.D1-6 (SP-25)	3.4.1-7	B, 316
Turbine housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Turbine housing	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Valve body	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VIII.D1-6 (SP-25)	3.4.1-7	B, 316
Valve body	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C

Table 3.3.2-19-23-IP3: Main Feedwater Pump and Services								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Flow-Accelerated Corrosion	VIII.A-17 (S-15)	3.4.1-29	C
Valve body	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Flow-Accelerated Corrosion	VIII.D1-9 (S-16)	3.4.1-29	A
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.D1-8 (S-10)	3.4.1-4	A, 314
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Valve body	Pressure boundary	Stainless steel	Lube oil (int)	Loss of material	Oil Analysis	VIII.D1-3 (SP-38)	3.4.1-19	B, 316
Valve body	Pressure boundary	Stainless steel	Steam (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.A-10 (SP-44)	3.4.1-39	C
Valve body	Pressure boundary	Stainless steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	H

Table 3.3.2-19-23-IP3: Main Feedwater Pump and Services								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Stainless steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-12 (SP-43)	3.4.1-37	C
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.D1-5 (SP-17)	3.4.1-14	A, 314
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.D1-4 (SP-16)	3.4.1-16	A, 314

**Table 3.3.2-19-24-IP3
Gland Seal Steam System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-24-IP3: Gland Seal Steam System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VIII.H-4 (S-34)	3.4.1-22	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	C
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Piping	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Piping	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Flow-Accelerated Corrosion	VIII.A-17 (S-15)	3.4.1-29	C
Piping	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314
Piping	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Flow-Accelerated Corrosion	VIII.D1-9 (S-16)	3.4.1-29	C

Table 3.3.2-19-24-IP3: Gland Seal Steam System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Piping	Pressure boundary	Stainless steel	Steam (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.A-10 (SP-44)	3.4.1-39	C
Piping	Pressure boundary	Stainless steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	H
Piping	Pressure boundary	Stainless steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-12 (SP-43)	3.4.1-37	C
Piping	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.B1-5 (SP-17)	3.4.1-14	C, 314
Piping	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Piping	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314
Rupture disk	Pressure boundary	Nickel alloy	Air – indoor (ext)	None	None	VIII.I-9 (SP-11)	3.4.1-41	A

Table 3.3.2-19-24-IP3: Gland Seal Steam System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Rupture disk	Pressure boundary	Nickel alloy	Steam (int)	Cracking	Water Chemistry Control – Primary and Secondary	--	--	G
Rupture disk	Pressure boundary	Nickel alloy	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	G
Rupture disk	Pressure boundary	Nickel alloy	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	--	--	G
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Tubing	Pressure boundary	Stainless steel	Steam (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.A-10 (SP-44)	3.4.1-39	C
Tubing	Pressure boundary	Stainless steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	H
Tubing	Pressure boundary	Stainless steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-12 (SP-43)	3.4.1-37	C
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.B1-5 (SP-17)	3.4.1-14	C, 314
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302

Table 3.3.2-19-24-IP3: Gland Seal Steam System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Valve body	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Valve body	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Flow-Accelerated Corrosion	VIII.A-17 (S-15)	3.4.1-29	C
Valve body	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Flow-Accelerated Corrosion	VIII.D1-9 (S-16)	3.4.1-29	C
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A

Table 3.3.2-19-24-IP3: Gland Seal Steam System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Stainless steel	Steam (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.A-10 (SP-44)	3.4.1-39	C
Valve body	Pressure boundary	Stainless steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	H
Valve body	Pressure boundary	Stainless steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-12 (SP-43)	3.4.1-37	C
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.B1-5 (SP-17)	3.4.1-14	C, 314
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314

**Table 3.3.2-19-25-IP3
Gaseous Waste Disposal System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-25-IP3: Gaseous Waste Disposal System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Compressor housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Compressor housing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-14 (A-25)	3.3.1-47	D
Orifice	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Orifice	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-10 (A-52)	3.3.1-50	D
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A

Table 3.3.2-19-25-IP3: Gaseous Waste Disposal System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Carbon steel	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.F1-3 (A-08)	3.3.1-72	E
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-14 (A-25)	3.3.1-47	D
Sight glass	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Sight glass	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-14 (A-25)	3.3.1-47	D
Sight glass	Pressure boundary	Glass	Air – indoor (ext)	None	None	VII.J-8 (AP-14)	3.3.1-93	A
Sight glass	Pressure boundary	Glass	Treated water (int)	None	None	VII.J-11 (AP-50)	3.3.1-93	A
Strainer housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Strainer housing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-14 (A-25)	3.3.1-47	D
Tank	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A

Table 3.3.2-19-25-IP3: Gaseous Waste Disposal System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Tank	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-14 (A-25)	3.3.1-47	D
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Tubing	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-10 (A-52)	3.3.1-50	D
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.F1-3 (A-08)	3.3.1-72	E
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-14 (A-25)	3.3.1-47	D
Valve body	Pressure boundary	CASS	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	CASS	Condensation (int)	Loss of material	One-Time Inspection	VII.F1-1 (A-09)	3.3.1-27	E
Valve body	Pressure boundary	CASS	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-10 (A-52)	3.3.1-50	D

**Table 3.3.2-19-26-IP3
Hydrazine Addition System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-26-IP3: Hydrazine Addition System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Piping	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	One-Time Inspection	--	--	G, 318
Pump casing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Pump casing	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	One-Time Inspection	--	--	G, 318
Sight glass	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Sight glass	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	One-Time Inspection	--	--	G, 318

Table 3.3.2-19-26-IP3: Hydrazine Addition System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Sight glass	Pressure boundary	Glass	Air – indoor (ext)	None	None	VII.J-8 (AP-14)	3.3.1-93	A
Sight glass	Pressure boundary	Glass	Treated water (int)	None	None	VII.J-11 (AP-50)	3.3.1-93	A
Tank	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Tank	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	One-Time Inspection	--	--	G, 318
Valve body	Pressure boundary	Copper alloy > 15% Zn	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Valve body	Pressure boundary	Copper alloy > 15% Zn	Gas (int)	None	None	VII.J-4 (AP-9)	3.3.1-97	A
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	One-Time Inspection	--	--	G, 318

**Table 3.3.2-19-27-IP3
Heater Drain / Moisture Separator Drains / Vents System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-27-IP3: Heater Drain / Moisture Separator Drains / Vents System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VIII.H-4 (S-34)	3.4.1-22	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	C
Expansion joint	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Expansion joint	Pressure boundary	Stainless steel	Steam (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.A-10 (SP-44)	3.4.1-39	C
Expansion joint	Pressure boundary	Stainless steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	H
Expansion joint	Pressure boundary	Stainless steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-12 (SP-43)	3.4.1-37	C
Heat exchanger (shell)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A

Table 3.3.2-19-27-IP3: Heater Drain / Moisture Separator Drains / Vents System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Heat exchanger (shell)	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314
Orifice	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Orifice	Pressure boundary	Stainless steel	Steam (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.A-10 (SP-44)	3.4.1-39	C
Orifice	Pressure boundary	Stainless steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	H
Orifice	Pressure boundary	Stainless steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-12 (SP-43)	3.4.1-37	C
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Piping	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Piping	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A

Table 3.3.2-19-27-IP3: Heater Drain / Moisture Separator Drains / Vents System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Stainless steel	Steam (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.A-10 (SP-44)	3.4.1-39	C
Piping	Pressure boundary	Stainless steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	H
Piping	Pressure boundary	Stainless steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-12 (SP-43)	3.4.1-37	C
Pump casing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Pump casing	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314
Sight glass	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Sight glass	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Sight glass	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314
Sight glass	Pressure boundary	Glass	Air – indoor (ext)	None	None	VIII.I-5 (SP-9)	3.4.1-40	A

Table 3.3.2-19-27-IP3: Heater Drain / Moisture Separator Drains / Vents System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Sight glass	Pressure boundary	Glass	Steam (int)	None	None	--	--	G
Strainer housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Strainer housing	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Strainer housing	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314
Tank	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Tank	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314
Thermowell	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Thermowell	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Thermowell	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314

Table 3.3.2-19-27-IP3: Heater Drain / Moisture Separator Drains / Vents System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Tubing	Pressure boundary	Stainless steel	Steam (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.A-10 (SP-44)	3.4.1-39	C
Tubing	Pressure boundary	Stainless steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	H
Tubing	Pressure boundary	Stainless steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-12 (SP-43)	3.4.1-37	C
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Valve body	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Valve body	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Valve body	Pressure boundary	Stainless steel	Steam (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.A-10 (SP-44)	3.4.1-39	C

Table 3.3.2-19-27-IP3: Heater Drain / Moisture Separator Drains / Vents System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Stainless steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	H
Valve body	Pressure boundary	Stainless steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-12 (SP-43)	3.4.1-37	C

**Table 3.3.2-19-28-IP3
High Pressure Steam Dump System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-28-IP3: High Pressure Steam Dump System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VIII.H-4 (S-34)	3.4.1-22	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	C
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Piping	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Piping	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-8 (S-07)	3.4.1-37	A
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Tubing	Pressure boundary	Stainless steel	Steam (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.B1-2 (SP-44)	3.4.1-39	A
Tubing	Pressure boundary	Stainless steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	H

Table 3.3.2-19-28-IP3: High Pressure Steam Dump System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Tubing	Pressure boundary	Stainless steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-3 (SP-43)	3.4.1-37	A
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Valve body	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Valve body	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-8 (S-07)	3.4.1-37	A

**Table 3.3.2-19-29-IP3
Instrument Air System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-29-IP3: Instrument Air System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Compressor housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.D-3 (A-80)	3.3.1-57	A
Compressor housing	Pressure boundary	Carbon steel	Air – treated (int)	None	None	VII.J-22 (AP-4)	3.3.1-98	A, 301
Dryer	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.D-3 (A-80)	3.3.1-57	A
Dryer	Pressure boundary	Carbon steel	Air – treated (int)	None	None	VII.J-22 (AP-4)	3.3.1-98	A, 301
Filter housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.D-3 (A-80)	3.3.1-57	A
Filter housing	Pressure boundary	Carbon steel	Air – treated (int)	None	None	VII.J-22 (AP-4)	3.3.1-98	A, 301

Table 3.3.2-19-29-IP3: Instrument Air System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Flow element	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Flow element	Pressure boundary	Stainless steel	Air – treated (int)	None	None	VII.J-18 (AP-20)	3.3.1-98	A, 301
Heat exchanger (shell)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Heat exchanger (shell)	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-1 (A-63)	3.3.1-48	D
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.D-3 (A-80)	3.3.1-57	A
Piping	Pressure boundary	Carbon steel	Air – treated (int)	None	None	VII.J-22 (AP-4)	3.3.1-98	A, 301
Piping	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.C1-19 (A-38)	3.3.1-76	E
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Piping	Pressure boundary	Stainless steel	Air – treated (int)	None	None	VII.J-18 (AP-20)	3.3.1-98	A, 301

Table 3.3.2-19-29-IP3: Instrument Air System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Silencer	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.D-3 (A-80)	3.3.1-57	A
Silencer	Pressure boundary	Carbon steel	Air – treated (int)	None	None	VII.J-22 (AP-4)	3.3.1-98	A, 301
Strainer housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.D-3 (A-80)	3.3.1-57	A
Strainer housing	Pressure boundary	Carbon steel	Air – treated (int)	None	None	VII.J-22 (AP-4)	3.3.1-98	A, 301
Tank	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.D-3 (A-80)	3.3.1-57	A
Tank	Pressure boundary	Carbon steel	Air – treated (int)	None	None	VII.J-22 (AP-4)	3.3.1-98	A, 301
Trap	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.D-3 (A-80)	3.3.1-57	A
Trap	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.C1-19 (A-38)	3.3.1-76	E
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.D-3 (A-80)	3.3.1-57	A
Valve body	Pressure boundary	Carbon steel	Air – treated (int)	None	None	VII.J-22 (AP-4)	3.3.1-98	A, 301

Table 3.3.2-19-29-IP3: Instrument Air System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Air – treated (int)	None	None	VII.J-18 (AP-20)	3.3.1-98	A, 301

**Table 3.3.2-19-30-IP3
Instrument Air Closed Cooling System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-30-IP3: Instrument Air Closed Cooling System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Flow element	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Flow element	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-14 (A-25)	3.3.1-47	D
Heat exchanger (shell)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Heat exchanger (shell)	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-1 (A-63)	3.3.1-48	D
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A

Table 3.3.2-19-30-IP3: Instrument Air Closed Cooling System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-14 (A-25)	3.3.1-47	D
Pump casing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Pump casing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-14 (A-25)	3.3.1-47	D
Sight glass	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Sight glass	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-14 (A-25)	3.3.1-47	D
Sight glass	Pressure boundary	Glass	Air – indoor (ext)	None	None	VII.J-8 (AP-14)	3.3.1-93	A
Sight glass	Pressure boundary	Glass	Treated water (int)	None	None	VII.J-11 (AP-50)	3.3.1-93	A
Strainer housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Strainer housing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-14 (A-25)	3.3.1-47	D

Table 3.3.2-19-30-IP3: Instrument Air Closed Cooling System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Tank	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Tank	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-14 (A-25)	3.3.1-47	D
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Tubing	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-10 (A-52)	3.3.1-50	D
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-14 (A-25)	3.3.1-47	D
Valve body	Pressure boundary	Copper alloy > 15% Zn	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Valve body	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Selective Leaching	VII.C2-6 (AP-43)	3.3.1-84	C
Valve body	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-4 (AP-12)	3.3.1-51	D

Table 3.3.2-19-30-IP3: Instrument Air Closed Cooling System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-10 (A-52)	3.3.1-50	D

**Table 3.3.2-19-31-IP3
Lube Oil System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-31-IP3: Lube Oil System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Filter housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Filter housing	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.C1-17 (AP-30)	3.3.1-14	D, 316
Heat exchanger (shell)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Heat exchanger (shell)	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.H2-5 (AP-39)	3.3.1-21	D, 316
Heater housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Heater housing	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.C1-17 (AP-30)	3.3.1-14	D, 316

Table 3.3.2-19-31-IP3: Lube Oil System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Orifice	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Orifice	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.C1-17 (AP-30)	3.3.1-14	D, 316
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.C1-17 (AP-30)	3.3.1-14	D, 316
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Piping	Pressure boundary	Stainless steel	Lube oil (int)	Loss of material	Oil Analysis	VII.C1-14 (AP-59)	3.3.1-33	D, 316
Pump casing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Pump casing	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.C1-17 (AP-30)	3.3.1-14	D, 316
Sight glass	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Sight glass	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.C1-17 (AP-30)	3.3.1-14	D, 316

Table 3.3.2-19-31-IP3: Lube Oil System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Sight glass	Pressure boundary	Glass	Air – indoor (ext)	None	None	VII.J-8 (AP-14)	3.3.1-93	A
Sight glass	Pressure boundary	Glass	Lube oil (int)	None	None	VII.J-10 (AP-15)	3.3.1-93	A
Tank	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Tank	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.C1-17 (AP-30)	3.3.1-14	D, 316
Tubing	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Tubing	Pressure boundary	Copper alloy	Lube oil (int)	Loss of material	Oil Analysis	VII.C1-8 (AP-47)	3.3.1-26	D, 316
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.C1-17 (AP-30)	3.3.1-14	D, 316
Valve body	Pressure boundary	CASS	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	CASS	Lube oil (int)	Loss of material	Oil Analysis	VII.C1-14 (AP-59)	3.3.1-33	D, 316

Table 3.3.2-19-31-IP3: Lube Oil System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Lube oil (int)	Loss of material	Oil Analysis	VII.C1-14 (AP-59)	3.3.1-33	D, 316

**Table 3.3.2-19-32-IP3
Low Pressure Steam Dump System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-32-IP3: Low Pressure Steam Dump System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	None	None	VIII.H-4 (S-34)	3.4.1-22	I, 310
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	C
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	None	None	VIII.H-7 (S-29)	3.4.1-28	I, 310
Piping	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Piping	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314
Steam trap	Pressure boundary	Carbon steel	Air – indoor (ext)	None	None	VIII.H-7 (S-29)	3.4.1-28	I, 310
Steam trap	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Steam trap	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314

Table 3.3.2-19-32-IP3: Low Pressure Steam Dump System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Strainer housing	Pressure boundary	Carbon steel	Air – indoor (ext)	None	None	VIII.H-7 (S-29)	3.4.1-28	I, 310
Strainer housing	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Strainer housing	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Tubing	Pressure boundary	Stainless steel	Steam (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.A-10 (SP-44)	3.4.1-39	C
Tubing	Pressure boundary	Stainless steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	H
Tubing	Pressure boundary	Stainless steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-12 (SP-43)	3.4.1-37	C
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	None	None	VIII.H-7 (S-29)	3.4.1-28	I, 310
Valve body	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C

Table 3.3.2-19-32-IP3: Low Pressure Steam Dump System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314

**Table 3.3.2-19-33-IP3
Liquid Waste Disposal System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-33-IP3: Liquid Waste Disposal System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Boric Acid Corrosion Prevention	VII.I-2 (A-102)	3.3.1-89	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Filter housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Filter housing	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.C1-19 (A-38)	3.3.1-76	E
Filter housing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Filter housing	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	One-Time Inspection	VII.C1-15 (A-54)	3.3.1-79	E
Flow element	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A

Table 3.3.2-19-33-IP3: Liquid Waste Disposal System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Flow element	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.C1-19 (A-38)	3.3.1-76	E
Flow element	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Flow element	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	One-Time Inspection	VII.C1-15 (A-54)	3.3.1-79	E
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.C1-19 (A-38)	3.3.1-76	E
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Piping	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	One-Time Inspection	VII.C1-15 (A-54)	3.3.1-79	E
Piping	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	One-Time Inspection	--	--	G, 305

Table 3.3.2-19-33-IP3: Liquid Waste Disposal System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Pump casing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Pump casing	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.C1-19 (A-38)	3.3.1-76	E
Pump casing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Pump casing	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	One-Time Inspection	VII.C1-15 (A-54)	3.3.1-79	E
Sight glass	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Sight glass	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.C1-19 (A-38)	3.3.1-76	E
Sight glass	Pressure boundary	Glass	Air – indoor (ext)	None	None	VII.J-8 (AP-14)	3.3.1-93	A
Sight glass	Pressure boundary	Glass	Raw water (int)	None	None	VII.J-11 (AP-50)	3.3.1-93	A
Strainer housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A

Table 3.3.2-19-33-IP3: Liquid Waste Disposal System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Strainer housing	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.C1-19 (A-38)	3.3.1-76	E
Strainer housing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Strainer housing	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	One-Time Inspection	VII.C1-15 (A-54)	3.3.1-79	E
Tank	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Tank	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	One-Time Inspection	VII.C1-15 (A-54)	3.3.1-79	E
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Tubing	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	One-Time Inspection	VII.C1-15 (A-54)	3.3.1-79	E
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.C1-19 (A-38)	3.3.1-76	E

Table 3.3.2-19-33-IP3: Liquid Waste Disposal System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305
Valve body	Pressure boundary	CASS	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	CASS	Raw water (int)	Loss of material	One-Time Inspection	VII.C1-15 (A-54)	3.3.1-79	E
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	One-Time Inspection	VII.C1-15 (A-54)	3.3.1-79	E
Valve body	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	One-Time Inspection	--	--	G, 305

**Table 3.3.2-19-34-IP3
Main Feedwater System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-34-IP3: Main Feedwater System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	None	None	VIII.H-4 (S-34)	3.4.1-22	I, 310
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	C
Flow element	Pressure boundary	Carbon steel	Air – indoor (ext)	None	None	VIII.H-7 (S-29)	3.4.1-28	I, 310
Flow element	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Flow element	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.D1-8 (S-10)	3.4.1-4	A, 314
Flow element	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Flow element	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.D1-5 (SP-17)	3.4.1-14	A, 314
Flow element	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302

Table 3.3.2-19-34-IP3: Main Feedwater System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Flow element	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.D1-4 (SP-16)	3.4.1-16	A, 314
Filter housing	Pressure boundary	Carbon steel	Air – indoor (ext)	None	None	VIII.H-7 (S-29)	3.4.1-28	I, 310
Filter housing	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Filter housing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.D1-8 (S-10)	3.4.1-4	A, 314
Heat exchanger (shell)	Pressure boundary	Carbon steel	Air – indoor (ext)	None	None	VIII.H-7 (S-29)	3.4.1-28	I, 310
Heat exchanger (shell)	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.D1-8 (S-10)	3.4.1-4	C, 314
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	None	None	VIII.H-7 (S-29)	3.4.1-28	I, 310
Piping	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Flow-Accelerated Corrosion	VIII.D1-9 (S-16)	3.4.1-29	A

Table 3.3.2-19-34-IP3: Main Feedwater System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.D1-8 (S-10)	3.4.1-4	A, 314
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Piping	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.D1-5 (SP-17)	3.4.1-14	A, 314
Piping	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Piping	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.D1-4 (SP-16)	3.4.1-16	A, 314
Thermowell	Pressure boundary	Carbon steel	Air – indoor (ext)	None	None	VIII.H-7 (S-29)	3.4.1-28	I, 310
Thermowell	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Thermowell	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.D1-8 (S-10)	3.4.1-4	A, 314
Thermowell	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A

Table 3.3.2-19-34-IP3: Main Feedwater System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Thermowell	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.D1-5 (SP-17)	3.4.1-14	A, 314
Thermowell	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Thermowell	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.D1-4 (SP-16)	3.4.1-16	A, 314
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.D1-5 (SP-17)	3.4.1-14	A, 314
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.D1-4 (SP-16)	3.4.1-16	A, 314
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	None	None	VIII.H-7 (S-29)	3.4.1-28	I, 310
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C

Table 3.3.2-19-34-IP3: Main Feedwater System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Flow-Accelerated Corrosion	VIII.D1-9 (S-16)	3.4.1-29	A
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.D1-8 (S-10)	3.4.1-4	A, 314
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.D1-5 (SP-17)	3.4.1-14	A, 314
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.D1-4 (SP-16)	3.4.1-16	A, 314

**Table 3.3.2-19-35-IP3
Main Steam System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-35-IP3: Main Steam System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	None	None	VIII.H-4 (S-34)	3.4.1-22	I, 310
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	C
Orifice	Pressure boundary	Carbon steel	Air – indoor (ext)	None	None	VIII.H-7 (S-29)	3.4.1-28	I, 310
Orifice	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	A
Orifice	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-8 (S-07)	3.4.1-37	A
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	None	None	VIII.H-7 (S-29)	3.4.1-28	I, 310
Piping	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	A
Piping	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Flow-Accelerated Corrosion	VIII.B1-9 (S-15)	3.4.1-29	A

Table 3.3.2-19-35-IP3: Main Steam System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-8 (S-07)	3.4.1-37	A
Piping	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	A
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Flow-Accelerated Corrosion	VIII.D1-9 (S-16)	3.4.1-29	C
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	A, 314
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Piping	Pressure boundary	Stainless steel	Steam (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.B1-2 (SP-44)	3.4.1-39	A
Piping	Pressure boundary	Stainless steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	H
Piping	Pressure boundary	Stainless steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-3 (SP-43)	3.4.1-37	A
Piping	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.B1-5 (SP-17)	3.4.1-14	A, 314

Table 3.3.2-19-35-IP3: Main Steam System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Piping	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	A, 314
Silencer	Pressure boundary	Carbon steel	Air – indoor (ext)	None	None	VIII.H-7 (S-29)	3.4.1-28	I, 310
Silencer	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-8 (S-07)	3.4.1-37	A
Steam trap	Pressure boundary	Carbon steel	Air – indoor (ext)	None	None	VIII.H-7 (S-29)	3.4.1-28	I, 310
Steam trap	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	A
Steam trap	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Flow-Accelerated Corrosion	VIII.B1-9 (S-15)	3.4.1-29	A
Steam trap	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-8 (S-07)	3.4.1-37	A
Strainer housing	Pressure boundary	Carbon steel	Air – indoor (ext)	None	None	VIII.H-7 (S-29)	3.4.1-28	I, 310

Table 3.3.2-19-35-IP3: Main Steam System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Strainer housing	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	A
Strainer housing	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-8 (S-07)	3.4.1-37	A
Strainer housing	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	A
Strainer housing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	A, 314
Thermowell	Pressure boundary	Carbon steel	Air – indoor (ext)	None	None	VIII.H-7 (S-29)	3.4.1-28	I, 310
Thermowell	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	A
Thermowell	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-8 (S-07)	3.4.1-37	A
Thermowell	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	A
Thermowell	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	A, 314

Table 3.3.2-19-35-IP3: Main Steam System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Tubing	Pressure boundary	Stainless steel	Steam (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.B1-2 (SP-44)	3.4.1-39	A
Tubing	Pressure boundary	Stainless steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	H
Tubing	Pressure boundary	Stainless steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-3 (SP-43)	3.4.1-37	A
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.B1-5 (SP-17)	3.4.1-14	A, 314
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	A, 314
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	None	None	VIII.H-7 (S-29)	3.4.1-28	I, 310
Valve body	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	A

Table 3.3.2-19-35-IP3: Main Steam System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Flow-Accelerated Corrosion	VIII.B1-9 (S-15)	3.4.1-29	A
Valve body	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-8 (S-07)	3.4.1-37	A
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	A
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Flow-Accelerated Corrosion	VIII.D1-9 (S-16)	3.4.1-29	C
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	A, 314
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Valve body	Pressure boundary	Stainless steel	Steam (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.B1-2 (SP-44)	3.4.1-39	A
Valve body	Pressure boundary	Stainless steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	H
Valve body	Pressure boundary	Stainless steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-3 (SP-43)	3.4.1-37	A

Table 3.3.2-19-35-IP3: Main Steam System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.B1-5 (SP-17)	3.4.1-14	A, 314
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	A, 314

**Table 3.3.2-19-36-IP3
Main Turbine Generator System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-36-IP3: Main Turbine Generator System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	None	None	VIII.H-4 (S-34)	3.4.1-22	I, 310
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	C
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	None	None	VIII.H-7 (S-29)	3.4.1-28	I, 310
Piping	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Piping	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	A, 314
Rupture disk	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Rupture disk	Pressure boundary	Stainless steel	Steam (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.A-10 (SP-44)	3.4.1-39	A
Rupture disk	Pressure boundary	Stainless steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	H

Table 3.3.2-19-36-IP3: Main Turbine Generator System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Rupture disk	Pressure boundary	Stainless steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-12 (SP-43)	3.4.1-37	A
Turbine housing	Pressure boundary	Carbon steel	Air – indoor (ext)	None	None	VIII.H-7 (S-29)	3.4.1-28	I, 310
Turbine housing	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	A, 314
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	None	None	VIII.H-7 (S-29)	3.4.1-28	I, 310
Valve body	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VIII.A-14 (SP-25)	3.4.1-7	B, 316
Valve body	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Valve body	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	A, 314

**Table 3.3.2-19-37-IP3
Nitrogen System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-37-IP3: Nitrogen System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Gas (int)	None	None	VII.J-23 (AP-6)	3.3.1-97	A
Piping	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Piping	Pressure boundary	Copper alloy	Gas (int)	None	None	VII.J-4 (AP-9)	3.3.1-97	A
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Piping	Pressure boundary	Stainless steel	Gas (int)	None	None	VII.J-19 (AP-22)	3.3.1-97	A

Table 3.3.2-19-37-IP3: Nitrogen System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Gas (int)	None	None	VII.J-23 (AP-6)	3.3.1-97	A
Valve body	Pressure boundary	Copper alloy > 15% Zn	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Valve body	Pressure boundary	Copper alloy > 15% Zn	Gas (int)	None	None	VII.J-4 (AP-9)	3.3.1-97	A
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Gas (int)	None	None	VII.J-19 (AP-22)	3.3.1-97	A
Vaporizer	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Vaporizer	Pressure boundary	Carbon steel	Gas (int)	None	None	VII.J-23 (AP-6)	3.3.1-97	A

**Table 3.3.2-19-38-IP3
Nuclear Equipment Drains System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-38-IP3: Nuclear Equipment Drains System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Boric Acid Corrosion Prevention	VII.I-2 (A-102)	3.3.1-89	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	C
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.C1-19 (A-38)	3.3.1-76	E
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Piping	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	One-Time Inspection	VII.C1-15 (A-54)	3.3.1-79	E
Piping	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	C

Table 3.3.2-19-38-IP3: Nuclear Equipment Drains System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Pump casing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Pump casing	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	C
Tank	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Tank	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	One-Time Inspection	VII.C1-15 (A-54)	3.3.1-79	E
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Tubing	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	One-Time Inspection	VII.C1-15 (A-54)	3.3.1-79	E
Tubing	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	C
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.C1-19 (A-38)	3.3.1-76	E

Table 3.3.2-19-38-IP3: Nuclear Equipment Drains System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	CASS	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	CASS	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	C
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Valve body	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	One-Time Inspection	VII.C1-15 (A-54)	3.3.1-79	E
Valve body	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	C

**Table 3.3.2-19-39-IP3
Primary Auxiliary Building HVAC System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-39-IP3: Primary Auxiliary Building HVAC System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Damper housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F2-2 (A-10)	3.3.1-56	A
Damper housing	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.B-1 (E-25)	3.2.1-32	E
Duct	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F2-2 (A-10)	3.3.1-56	A
Duct	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.B-1 (E-25)	3.2.1-32	E
Filter housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F2-2 (A-10)	3.3.1-56	A
Filter housing	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.B-1 (E-25)	3.2.1-32	E

Table 3.3.2-19-39-IP3: Primary Auxiliary Building HVAC System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Heat exchanger (shell)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F2-8 (AP-41)	3.3.1-59	A
Heat exchanger (shell)	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.B-1 (E-25)	3.2.1-32	E
Heat exchanger (shell)	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.E-37 (S-19)	3.4.1-3	C, 314
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F2-2 (A-10)	3.3.1-56	A
Piping	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.B-1 (E-25)	3.2.1-32	E
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F2-2 (A-10)	3.3.1-56	A
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314

**Table 3.3.2-19-40-IP3
Process Radiation Monitoring System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-40-IP3: Process Radiation Monitoring System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Piping	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.B1-5 (SP-17)	3.4.1-14	C, 314
Piping	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314
Pump casing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Pump casing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.B1-5 (SP-17)	3.4.1-14	C, 314

Table 3.3.2-19-40-IP3: Process Radiation Monitoring System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Pump casing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.B1-5 (SP-17)	3.4.1-14	C, 314
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314

**Table 3.3.2-19-41-IP3
Primary Plant Sampling System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-41-IP3: Primary Plant Sampling System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Boric Acid Corrosion Prevention	VII.I-2 (A-102)	3.3.1-89	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	C
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Piping	Pressure boundary	Stainless steel	Steam (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.A-10 (SP-44)	3.4.1-39	C
Piping	Pressure boundary	Stainless steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	G
Piping	Pressure boundary	Stainless steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-12 (SP-43)	3.4.1-37	C

Table 3.3.2-19-41-IP3: Primary Plant Sampling System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VII.E1-20 (AP-82)	3.3.1-90	C
Piping	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C
Piping	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.A3-8 (AP-79)	3.3.1-91	C
Tank	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Tank	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VII.E1-20 (AP-82)	3.3.1-90	C
Tank	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	V.A-27 (EP-41)	3.2.1-49	C
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Tubing	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VII.E1-20 (AP-82)	3.3.1-90	C

Table 3.3.2-19-41-IP3: Primary Plant Sampling System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Tubing	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C
Tubing	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.A3-8 (AP-79)	3.3.1-91	C
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Valve body	Pressure boundary	Stainless steel	Steam (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.A-10 (SP-44)	3.4.1-39	C
Valve body	Pressure boundary	Stainless steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	G
Valve body	Pressure boundary	Stainless steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-12 (SP-43)	3.4.1-37	C
Valve body	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VII.E1-20 (AP-82)	3.3.1-90	C
Valve body	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C

Table 3.3.2-19-41-IP3: Primary Plant Sampling System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.A3-8 (AP-79)	3.3.1-91	C

**Table 3.3.2-19-42-IP3
Primary Water Makeup System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-42-IP3: Primary Water Makeup System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Flow element	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Flow element	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A

Table 3.3.2-19-42-IP3: Primary Water Makeup System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314
Tank	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Tank	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.E-40 (S-13)	3.4.1-6	C, 314
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Tubing	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314
Valve body	Pressure boundary	CASS	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	CASS	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314

Table 3.3.2-19-42-IP3: Primary Water Makeup System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314

**Table 3.3.2-19-43-IP3
Pressurizer System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-43-IP3: Pressurizer System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Boric Acid Corrosion Prevention	V.E-2 (E-41)	3.2.1-45	C
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	IV.E-2 (RP-04)	3.3.1-86	C
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	V.F-12 (EP-18)	3.2.1-53	C
Piping	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	V.A-28 (E-12)	3.2.1-48	C
Piping	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	V.D1-27 (E-13)	3.2.1-1	C
Piping	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	V.A-27 (EP-41)	3.2.1-49	C
Piping	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	V.C-4 (E-33)	3.2.1-3	C, 314

Table 3.3.2-19-43-IP3: Pressurizer System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Rupture disk	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	V.F-12 (EP-18)	3.2.1-53	C
Rupture disk	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	V.A-28 (E-12)	3.2.1-48	C
Rupture disk	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	V.D1-27 (E-13)	3.2.1-1	C
Rupture disk	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	V.A-27 (EP-41)	3.2.1-49	C
Tank	Pressure boundary	Carbon steel coated	Air – indoor (ext)	Loss of material	Boric Acid Corrosion Prevention	V.E-2 (E-41)	3.2.1-45	C
Tank	Pressure boundary	Carbon steel coated	Treated borated water > 140°F (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	F, 313
Thermowell	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	V.F-12 (EP-18)	3.2.1-53	C
Thermowell	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	V.A-28 (E-12)	3.2.1-48	C

Table 3.3.2-19-43-IP3: Pressurizer System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Thermowell	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	V.D1-27 (E-13)	3.2.1-1	C
Thermowell	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	V.A-27 (EP-41)	3.2.1-49	C
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	V.F-12 (EP-18)	3.2.1-53	C
Tubing	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	V.A-28 (E-12)	3.2.1-48	C
Tubing	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	V.D1-27 (E-13)	3.2.1-1	C
Tubing	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	V.A-27 (EP-41)	3.2.1-49	C
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	V.F-12 (EP-18)	3.2.1-53	C
Valve body	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	V.A-28 (E-12)	3.2.1-48	C

Table 3.3.2-19-43-IP3: Pressurizer System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	V.D1-27 (E-13)	3.2.1-1	C
Valve body	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	V.A-27 (EP-41)	3.2.1-49	C
Valve body	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	V.C-4 (E-33)	3.2.1-3	C, 314

**Table 3.3.2-19-44-IP3
Reactor Coolant System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-44-IP3: Reactor Coolant System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Boric Acid Corrosion Prevention	V.E-2 (E-41)	3.2.1-45	C
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	IV.E-2 (RP-04)	3.3.1-86	C
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Boric Acid Corrosion Prevention	IV.C2-9 (R-17)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	V.A-25 (EP-46)	3.2.1-16	D, 316
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	V.F-12 (EP-18)	3.2.1-53	C
Piping	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	V.A-28 (E-12)	3.2.1-48	C
Piping	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	V.D1-27 (E-13)	3.2.1-1	C

Table 3.3.2-19-44-IP3: Reactor Coolant System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	V.A-27 (EP-41)	3.2.1-49	C
Pump casing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Boric Acid Corrosion Prevention	IV.C2-9 (R-17)	3.3.1-58	A
Pump casing	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	V.A-25 (EP-46)	3.2.1-16	D, 316
Sight glass	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Boric Acid Corrosion Prevention	IV.C2-9 (R-17)	3.3.1-58	A
Sight glass	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	V.A-25 (EP-46)	3.2.1-16	D, 316
Sight glass	Pressure boundary	Glass	Air – indoor (ext)	None	None	V.F-6 (EP-15)	3.2.1-52	C
Sight glass	Pressure boundary	Glass	Lube oil (int)	None	None	V.F-7 (EP-16)	3.2.1-52	C
Thermowell	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Boric Acid Corrosion Prevention	IV.C2-9 (R-17)	3.3.1-58	A
Thermowell	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	V.A-25 (EP-46)	3.2.1-16	D, 316
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	V.F-12 (EP-18)	3.2.1-53	C

Table 3.3.2-19-44-IP3: Reactor Coolant System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Tubing	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	V.A-28 (E-12)	3.2.1-48	C
Tubing	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	V.D1-27 (E-13)	3.2.1-1	C
Tubing	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	V.A-27 (EP-41)	3.2.1-49	C
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Boric Acid Corrosion Prevention	IV.C2-9 (R-17)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	V.A-25 (EP-46)	3.2.1-16	D, 316
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	V.F-12 (EP-18)	3.2.1-53	C
Valve body	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	V.A-28 (E-12)	3.2.1-48	C
Valve body	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	V.D1-27 (E-13)	3.2.1-1	C

Table 3.3.2-19-44-IP3: Reactor Coolant System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	V.A-27 (EP-41)	3.2.1-49	C

**Table 3.3.2-19-45-IP3
Reheat Steam System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-45-IP3: Reheat Steam System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	None	None	VIII.H-4 (S-34)	3.4.1-22	I, 310
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	C
Flow element	Pressure boundary	Carbon steel	Air – indoor (ext)	None	None	VIII.H-7 (S-29)	3.4.1-28	I, 310
Flow element	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Flow element	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.C-4 (S-06)	3.4.1-2	A, 314
Heat exchanger (shell)	Pressure boundary	Carbon steel	Air – indoor (ext)	None	None	VIII.H-7 (S-29)	3.4.1-28	I, 310
Heat exchanger (shell)	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.C-4 (S-06)	3.4.1-2	C, 314

Table 3.3.2-19-45-IP3: Reheat Steam System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	None	None	VIII.H-7 (S-29)	3.4.1-28	I, 310
Piping	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Piping	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Flow-Accelerated Corrosion	VIII.C-5 (S-15)	3.4.1-29	A
Piping	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.C-4 (S-06)	3.4.1-2	A, 314
Steam trap	Pressure boundary	Carbon steel	Air – indoor (ext)	None	None	VIII.H-7 (S-29)	3.4.1-28	I, 310
Steam trap	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Steam trap	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Flow-Accelerated Corrosion	VIII.C-5 (S-15)	3.4.1-29	A
Steam trap	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.C-4 (S-06)	3.4.1-2	A, 314
Strainer Housing	Pressure boundary	Carbon steel	Air – indoor (ext)	None	None	VIII.H-7 (S-29)	3.4.1-28	I, 310

Table 3.3.2-19-45-IP3: Reheat Steam System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Strainer Housing	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Strainer Housing	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.C-4 (S-06)	3.4.1-2	A, 314
Thermowell	Pressure boundary	Carbon steel	Air – indoor (ext)	None	None	VIII.H-7 (S-29)	3.4.1-28	I, 310
Thermowell	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Thermowell	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.C-4 (S-06)	3.4.1-2	A, 314
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Tubing	Pressure boundary	Stainless steel	Steam (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.A-10 (SP-44)	3.4.1-39	C
Tubing	Pressure boundary	Stainless steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	--	--	H
Tubing	Pressure boundary	Stainless steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-12 (SP-43)	3.4.1-37	C

Table 3.3.2-19-45-IP3: Reheat Steam System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	None	None	VIII.H-7 (S-29)	3.4.1-28	I, 310
Valve body	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Valve body	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Flow-Accelerated Corrosion	VIII.C-5 (S-15)	3.4.1-29	A
Valve body	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.C-4 (S-06)	3.4.1-2	A, 314

**Table 3.3.2-19-46-IP3
Reactor Vessel Level Indication System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-46-IP3: Reactor Vessel Level Indication System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Boric Acid Corrosion Prevention	VII.I-2 (A-102)	3.3.1-89	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	C
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Piping	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	C
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Valve body	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.E1-17 (AP-79)	3.3.1-91	C

**Table 3.3.2-19-47-IP3
River Water Service System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-47-IP3: River Water Service System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Condensation (ext)	Loss of material	Bolting Integrity	VII.D-1 (A-103)	3.3.1-44	C
Bolting	Pressure boundary	Stainless steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.F1-1 (A-09)	3.3.1-27	E
Piping	Pressure boundary	Carbon steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.I-11 (A-81)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.C1-19 (A-38)	3.3.1-76	E
Thermowell	Pressure boundary	Carbon steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.I-11 (A-81)	3.3.1-58	A
Thermowell	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.C1-19 (A-38)	3.3.1-76	E
Valve body	Pressure boundary	Carbon steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.I-11 (A-81)	3.3.1-58	A

Table 3.3.2-19-47-IP3: River Water Service System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.C1-19 (A-38)	3.3.1-76	E

**Table 3.3.2-19-48-IP3
Station Air System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-48-IP3: Station Air System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Compressor housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.D-3 (A-80)	3.3.1-57	A
Compressor housing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-14 (A-25)	3.3.1-47	D
Heat exchanger (shell)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Heat exchanger (shell)	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-1 (A-63)	3.3.1-48	D
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.D-3 (A-80)	3.3.1-57	A

Table 3.3.2-19-48-IP3: Station Air System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Carbon steel	Condensation (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VII.D-2 (A-26)	3.3.1-53	E

**Table 3.3.2-19-49-IP3
Spent Fuel Pit and Cooling System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-49-IP3: Spent Fuel Pit and Cooling System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Boric Acid Corrosion Prevention	VII.I-2 (A-102)	3.3.1-89	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	C
Flow element	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Flow element	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VII.E1-20 (AP-82)	3.3.1-90	C
Flow element	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.A3-8 (AP-79)	3.3.1-91	A
Filter housing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A

Table 3.3.2-19-49-IP3: Spent Fuel Pit and Cooling System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Filter housing	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VII.E1-20 (AP-82)	3.3.1-90	C
Filter housing	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.A3-8 (AP-79)	3.3.1-91	A
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Piping	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VII.E1-20 (AP-82)	3.3.1-90	C
Piping	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.A3-8 (AP-79)	3.3.1-91	A
Pump casing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Pump casing	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VII.E1-20 (AP-82)	3.3.1-90	C
Pump casing	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.A3-8 (AP-79)	3.3.1-91	A

Table 3.3.2-19-49-IP3: Spent Fuel Pit and Cooling System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Strainer housing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Strainer housing	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VII.E1-20 (AP-82)	3.3.1-90	C
Strainer housing	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.A3-8 (AP-79)	3.3.1-91	A
Tank	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Tank	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VII.E1-20 (AP-82)	3.3.1-90	C
Tank	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	V.A-27 (EP-41)	3.2.1-49	C
Thermowell	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Thermowell	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VII.E1-20 (AP-82)	3.3.1-90	C

Table 3.3.2-19-49-IP3: Spent Fuel Pit and Cooling System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Thermowell	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.A3-8 (AP-79)	3.3.1-91	A
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Tubing	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VII.E1-20 (AP-82)	3.3.1-90	C
Tubing	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.A3-8 (AP-79)	3.3.1-91	A
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-16 (AP-18)	3.3.1-99	A
Valve body	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VII.E1-20 (AP-82)	3.3.1-90	C
Valve body	Pressure boundary	Stainless steel	Treated borated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VII.A3-8 (AP-79)	3.3.1-91	A

**Table 3.3.2-19-50-IP3
Steam Generator Blowdown System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-50-IP3: Steam Generator Blowdown System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VIII.H-4 (S-34)	3.4.1-22	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	C
Eductor	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Eductor	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.F-25 (S-10)	3.4.1-4	A, 314
Filter housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Filter housing	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Filter housing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.F-25 (S-10)	3.4.1-4	A, 314
Flow element	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A

Table 3.3.2-19-50-IP3: Steam Generator Blowdown System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Flow element	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Flow element	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.F-25 (S-10)	3.4.1-4	A, 314
Heat exchanger (shell)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Heat exchanger (shell)	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.F-28 (S-19)	3.4.1-3	A, 314
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Piping	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Flow-Accelerated Corrosion	VIII.F-26 (S-16)	3.4.1-29	A
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.F-25 (S-10)	3.4.1-4	A, 314
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A

Table 3.3.2-19-50-IP3: Steam Generator Blowdown System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.F-24 (SP-17)	3.4.1-14	A, 314
Piping	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Piping	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.F-23 (SP-16)	3.4.1-16	A, 314
Pump casing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Pump casing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.F-25 (S-10)	3.4.1-4	A, 314
Tank	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Tank	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.F-25 (S-10)	3.4.1-4	A, 314
Thermowell	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Thermowell	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C

Table 3.3.2-19-50-IP3: Steam Generator Blowdown System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Thermowell	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.F-25 (S-10)	3.4.1-4	A, 314
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.F-24 (SP-17)	3.4.1-14	A, 314
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.F-23 (SP-16)	3.4.1-16	A, 314
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Flow-Accelerated Corrosion	VIII.F-26 (S-16)	3.4.1-29	A
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.F-25 (S-10)	3.4.1-4	A, 314

Table 3.3.2-19-50-IP3: Steam Generator Blowdown System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.F-24 (SP-17)	3.4.1-14	A, 314
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TCAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.F-23 (SP-16)	3.4.1-16	A, 314

**Table 3.3.2-19-51-IP3
Steam Generator Blowdown Recovery System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-51-IP3: Steam Generator Blowdown Recovery System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VIII.H-4 (S-34)	3.4.1-22	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	C
Flow element	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Flow element	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.F-24 (SP-17)	3.4.1-14	A, 314
Flow element	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Flow element	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.F-23 (SP-16)	3.4.1-16	A, 314
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Piping	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C

Table 3.3.2-19-51-IP3: Steam Generator Blowdown Recovery System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Flow-Accelerated Corrosion	VIII.F-26 (S-16)	3.4.1-29	A
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.F-25 (S-10)	3.4.1-4	A, 314
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Piping	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.F-24 (SP-17)	3.4.1-14	A, 314
Piping	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Piping	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.F-23 (SP-16)	3.4.1-16	A, 314
Pump casing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Pump casing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.F-25 (S-10)	3.4.1-4	A, 314
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A

Table 3.3.2-19-51-IP3: Steam Generator Blowdown Recovery System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.F-24 (SP-17)	3.4.1-14	A, 314
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.F-23 (SP-16)	3.4.1-16	A, 314
Valve body	Pressure boundary	CASS	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Valve body	Pressure boundary	CASS	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.F-24 (SP-17)	3.4.1-14	A, 314
Valve body	Pressure boundary	CASS	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.F-23 (SP-16)	3.4.1-16	A, 314
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.F-24 (SP-17)	3.4.1-14	A, 314
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302

Table 3.3.2-19-51-IP3: Steam Generator Blowdown Recovery System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.F-23 (SP-16)	3.4.1-16	A, 314

**Table 3.3.2-19-52-IP3
Steam Generator Sampling System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-52-IP3: Steam Generator Sampling System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Filter housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Filter housing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314
Heat exchanger (shell)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Heat exchanger (shell)	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A

Table 3.3.2-19-52-IP3: Steam Generator Sampling System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Piping	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.B1-5 (SP-17)	3.4.1-14	C, 314
Piping	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Piping	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314
Pump casing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Pump casing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314
Thermowell	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A

Table 3.3.2-19-52-IP3: Steam Generator Sampling System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Thermowell	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.B1-5 (SP-17)	3.4.1-14	C, 314
Thermowell	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Thermowell	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.B1-5 (SP-17)	3.4.1-14	C, 314
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C

Table 3.3.2-19-52-IP3: Steam Generator Sampling System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.B1-5 (SP-17)	3.4.1-14	C, 314
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314

**Table 3.3.2-19-53-IP3
Safety Injection / Recirculation System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-53-IP3: Safety Injection / Recirculation System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	V.E-4 (EP-25)	3.2.1-23	A
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Boric Acid Corrosion Prevention	V.E-2 (E-41)	3.2.1-45	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	V.F-13 (EP-19)	3.2.1-57	C
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	V.F-12 (EP-18)	3.2.1-53	A
Piping	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	V.D1-30 (EP-41)	3.2.1-49	A
Pump casing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	V.F-12 (EP-18)	3.2.1-53	A
Pump casing	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	V.D1-30 (EP-41)	3.2.1-49	A
Strainer housing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	V.F-12 (EP-18)	3.2.1-53	A

Table 3.3.2-19-53-IP3: Safety Injection / Recirculation System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Strainer housing	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	V.D1-30 (EP-41)	3.2.1-49	A
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	V.F-12 (EP-18)	3.2.1-53	A
Valve body	Pressure boundary	Stainless steel	Treated borated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	V.D1-30 (EP-41)	3.2.1-49	A

**Table 3.3.2-19-54-IP3
Main Generator Seal Oil System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-54-IP3: Main Generator Seal Oil System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Filter housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Filter housing	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.C1-17 (AP-30)	3.3.1-14	D, 316
Heat exchanger (shell)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Heat exchanger (shell)	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.H2-5 (AP-39)	3.3.1-21	D, 316
Orifice	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Orifice	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.C1-17 (AP-30)	3.3.1-14	D, 316

Table 3.3.2-19-54-IP3: Main Generator Seal Oil System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.C1-17 (AP-30)	3.3.1-14	D, 316
Pump casing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Pump casing	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.C1-17 (AP-30)	3.3.1-14	D, 316
Sight glass	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Sight glass	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.C1-17 (AP-30)	3.3.1-14	D, 316
Sight glass	Pressure boundary	Glass	Air – indoor (ext)	None	None	VII.J-8 (AP-14)	3.3.1-93	A
Sight glass	Pressure boundary	Glass	Lube oil (int)	None	None	VII.J-10 (AP-15)	3.3.1-93	A
Tank	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Tank	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.C1-17 (AP-30)	3.3.1-14	D, 316

Table 3.3.2-19-54-IP3: Main Generator Seal Oil System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Tubing	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Tubing	Pressure boundary	Copper alloy	Lube oil (int)	Loss of material	Oil Analysis	VII.C1-8 (AP-47)	3.3.1-26	D, 316
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VII.C1-17 (AP-30)	3.3.1-14	D, 316

**Table 3.3.2-19-55-IP3
Secondary Plant Sampling System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-55-IP3: Secondary Plant Sampling System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Heat exchanger (shell)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Heat exchanger (shell)	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	--	--	G, 305
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314

Table 3.3.2-19-55-IP3: Secondary Plant Sampling System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Piping	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.B1-5 (SP-17)	3.4.1-14	C, 314
Piping	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Piping	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314
Pump casing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Pump casing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.B1-5 (SP-17)	3.4.1-14	C, 314
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302

Table 3.3.2-19-55-IP3: Secondary Plant Sampling System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Tubing	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-11 (S-10)	3.4.1-4	C, 314
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking	Water Chemistry Control – Primary and Secondary	VIII.B1-5 (SP-17)	3.4.1-14	C, 314
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Cracking – fatigue	TLAA – metal fatigue	VII.E1-16 (A-57)	3.3.1-2	C, 302
Valve body	Pressure boundary	Stainless steel	Treated water > 140°F (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.B1-4 (SP-16)	3.4.1-16	C, 314

**Table 3.3.2-19-56-IP3
Service Water System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-56-IP3: Service Water System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Condensation (ext)	Loss of material	Bolting Integrity	VII.D-1 (A-103)	3.3.1-44	C
Bolting	Pressure boundary	Stainless steel	Condensation (ext)	Loss of material	Bolting Integrity	VII.F1-1 (A-09)	3.3.1-27	E
Filter housing	Pressure boundary	Carbon steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.I-11 (A-81)	3.3.1-58	A
Filter housing	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-19 (A-38)	3.3.1-76	A
Flow element	Pressure boundary	Carbon steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.I-11 (A-81)	3.3.1-58	A
Flow element	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-19 (A-38)	3.3.1-76	A
Piping	Pressure boundary	Carbon steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.I-11 (A-81)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-19 (A-38)	3.3.1-76	A

Table 3.3.2-19-56-IP3: Service Water System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Stainless steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.F1-1 (A-09)	3.3.1-27	E
Piping	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-15 (A-54)	3.3.1-79	A
Tank	Pressure boundary	Carbon steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.I-11 (A-81)	3.3.1-58	A
Tank	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-19 (A38)	3.3.1-76	A
Thermowell	Pressure boundary	Carbon steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.I-11 (A-81)	3.3.1-58	A
Thermowell	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-19 (A-38)	3.3.1-76	A
Valve body	Pressure boundary	Aluminum	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.F1-14 (AP-74)	3.3.1-27	E
Valve body	Pressure boundary	Aluminum	Raw water (int)	Loss of material	Service Water Integrity	VII.G-8 (AP-83)	3.3.1-62	E
Valve body	Pressure boundary	Carbon steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.I-11 (A-81)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-19 (A-38)	3.3.1-76	A

Table 3.3.2-19-56-IP3: Service Water System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	CASS	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.F1-1 (A-09)	3.3.1-27	E
Valve body	Pressure boundary	CASS	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-15 (A-54)	3.3.1-79	A
Valve body	Pressure boundary	Copper alloy > 15% Zn	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.F1-16 (A-46)	3.3.1-25	E
Valve body	Pressure boundary	Copper alloy > 15% Zn	Raw water (int)	Loss of material	Selective Leaching	VII.C1-10 (A-47)	3.3.1-84	A
Valve body	Pressure boundary	Copper alloy > 15% Zn	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-9 (A-44)	3.3.1-81	A
Valve body	Pressure boundary	Stainless steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.F1-1 (A-09)	3.3.1-27	E
Valve body	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-15 (A-54)	3.3.1-79	A

**Table 3.3.2-19-57-IP3
Turbine Generator Hydraulic Control System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-57-IP3: Turbine Generator Hydraulic Control System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VIII.H-4 (S-34)	3.4.1-22	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	C
Orifice	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Orifice	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VIII.A-14 (SP-25)	3.4.1-7	D, 316
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Piping	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VIII.A-14 (SP-25)	3.4.1-7	D, 316
Piping	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Piping	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314

Table 3.3.2-19-57-IP3: Turbine Generator Hydraulic Control System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Tank	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Tank	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VIII.A-14 (SP-25)	3.4.1-7	D, 316
Tubing	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Tubing	Pressure boundary	Stainless steel	Lube oil (int)	Loss of material	Oil Analysis	VIII.A-9 (SP-38)	3.4.1-19	D, 316
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H-7 (S-29)	3.4.1-28	A
Valve body	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VIII.A-14 (SP-25)	3.4.1-7	D, 316
Valve body	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B1-10 (S-08)	3.4.1-1	C
Valve body	Pressure boundary	Carbon steel	Steam (int)	Loss of material	Water Chemistry Control – Primary and Secondary	VIII.A-16 (S-06)	3.4.1-2	C, 314
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VIII.I-10 (SP-12)	3.4.1-41	A
Valve body	Pressure boundary	Stainless steel	Lube oil (int)	Loss of material	Oil Analysis	VIII.A-9 (SP-38)	3.4.1-19	D, 316

**Table 3.3.2-19-58-IP3
Turbine Hall Closed Cooling System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-58-IP3: Turbine Hall Closed Cooling System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Flex joint	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Flex joint	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-10 (A-52)	3.3.1-50	B
Orifice	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Orifice	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-14 (A-25)	3.3.1-47	B
Heat exchanger (shell)	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A

Table 3.3.2-19-58-IP3: Turbine Hall Closed Cooling System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Heat exchanger (shell)	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-1 (A-63)	3.3.1-48	B
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-14 (A-25)	3.3.1-47	B
Piping	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Piping	Pressure boundary	Copper alloy	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-4 (AP-12)	3.3.1-51	B
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Piping	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-10 (A-52)	3.3.1-50	B
Pump casing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Pump casing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-14 (A-25)	3.3.1-47	B

Table 3.3.2-19-58-IP3: Turbine Hall Closed Cooling System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Sight glass	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Sight glass	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-14 (A-25)	3.3.1-47	B
Sight glass	Pressure boundary	Glass	Air – indoor (ext)	None	None	VII.J-8 (AP-14)	3.3.1-93	A
Sight glass	Pressure boundary	Glass	Treated water (int)	None	None	VII.J-11 (AP-50)	3.3.1-93	A
Strainer housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Strainer housing	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-14 (A-25)	3.3.1-47	B
Tank	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Tank	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-14 (A-25)	3.3.1-47	B
Thermowell	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A

Table 3.3.2-19-58-IP3: Turbine Hall Closed Cooling System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Thermowell	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-14 (A-25)	3.3.1-47	B
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Valve body	Pressure boundary	Carbon steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-14 (A-25)	3.3.1-47	B
Valve body	Pressure boundary	CASS	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	CASS	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-10 (A-52)	3.3.1-50	B
Valve body	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Valve body	Pressure boundary	Copper alloy	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-4 (AP-12)	3.3.1-51	B
Valve body	Pressure boundary	Copper alloy > 15% Zn	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C
Valve body	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Selective Leaching	VII.C2-6 (AP-43)	3.3.1-84	A

Table 3.3.2-19-58-IP3: Turbine Hall Closed Cooling System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Copper alloy > 15% Zn	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-4 (AP-12)	3.3.1-51	B
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water Chemistry Control – Closed Cooling Water	VII.C2-10 (A-52)	3.3.1-50	B

**Table 3.3.2-19-59-IP3
Vapor Containment Hydrogen Analyzer System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-59-IP3: Vapor Containment Hydrogen Analyzer System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Gas analyzer	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Gas analyzer	Pressure boundary	Stainless steel	Air – indoor (int)	None	None	--	--	G
Piping	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Piping	Pressure boundary	Stainless steel	Air – indoor (int)	None	None	--	--	G
Tank	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Tank	Pressure boundary	Stainless steel	Air – indoor (int)	None	None	--	--	G

Table 3.3.2-19-59-IP3: Vapor Containment Hydrogen Analyzer System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	A
Valve body	Pressure boundary	Stainless steel	Air – indoor (int)	None	None	--	--	G

**Table 3.3.2-19-60-IP3
Vapor Containment Purge and Supply System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-60-IP3: Vapor Containment Purge and Supply System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Damper housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F3-2 (A-10)	3.3.1-56	A
Damper housing	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.B-1 (E-25)	3.2.1-32	E
Duct	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F3-2 (A-10)	3.3.1-56	A
Duct	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.B-1 (E-25)	3.2.1-32	E
Filter housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F3-2 (A-10)	3.3.1-56	A
Filter housing	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.B-1 (E-25)	3.2.1-32	E

Table 3.3.2-19-60-IP3: Vapor Containment Purge and Supply System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F3-2 (A-10)	3.3.1-56	A
Piping	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.B-1 (E-25)	3.2.1-32	E

**Table 3.3.2-19-61-IP3
Vapor Containment Pressure Relief System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-61-IP3: Vapor Containment Pressure Relief System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	VII.I-4 (AP-27)	3.3.1-43	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	VII.J-15 (AP-17)	3.3.1-94	C
Duct	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F3-2 (A-10)	3.3.1-56	A
Duct	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.B-1 (E-25)	3.2.1-32	E
Filter housing	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.F3-2 (A-10)	3.3.1-56	A
Filter housing	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.B-1 (E-25)	3.2.1-32	E
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VII.I-8 (A-77)	3.3.1-58	A
Piping	Pressure boundary	Carbon steel	Air – indoor (int)	Loss of material	External Surfaces Monitoring	V.B-1 (E-25)	3.2.1-32	E

**Table 3.3.2-19-62-IP3
Weld Channel and Containment Penetration Pressurization System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review**

Table 3.3.2-19-62-IP3: Weld Channel and Containment Penetration Pressurization System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	Bolting Integrity	V.E-4 (EP-25)	3.2.1-23	A
Bolting	Pressure boundary	Stainless steel	Air – indoor (ext)	None	None	V.F-12 (EP-18)	3.2.1-53	C
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	V.E-7 (E-44)	3.2.1-31	A
Piping	Pressure boundary	Carbon steel	Air – treated (int)	None	None	VII.J-22 (AP-4)	3.3.1-98	C, 301
Valve body	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	V.E-7 (E-44)	3.2.1-31	A
Valve body	Pressure boundary	Carbon steel	Air – treated (int)	None	None	VII.J-22 (AP-4)	3.3.1-98	C, 301