CALLAWAY PLANT UNIT 1
LICENSE RENEWAL APPLICATION

NFPA 805 GAP ANALYSIS

CALLAWAY LICENSE RENEWAL/NFPA 805 GAP ANALYSIS

Callaway's original fire protection program was based on 10 CFR 50.48 and associated commitments to Branch Technical Position (BTP) APCSB 9.5-1, Appendix A, and 10 CFR 50, Appendix R. FSAR Appendix 9.5A currently lists the requirements of APCSB 9.5-1, Appendix A, along with a discussion of how Callaway met each of those requirements. FSAR Appendix 9.5E currently provides a design comparison to 10 CFR 50, Appendix R.

Callaway is in the process of transitioning to a fire protection program based on 10 CFR 50.48(c), which incorporates, by reference, NFPA 805, with exceptions. This program supersedes commitments to BTP APCSB 9.5-1, Appendix A, and 10 CFR 50, Appendix R. FSAR Appendix 9.5A and Appendix 9.5E will be deleted. This program was approved by the NRC on January 13, 2014, as License Amendment No. 206, to be implemented by eight months from the approval date, i.e. September 13, 2014. Scope differences between the approved NFPA 805 License Amendment and the License Renewal Application currently under review were assessed using the License Renewal Application through Amendment 32 (ULNRC-06090 dated March 13, 2014) and the NFPA 805 License Amendment Request through ULNRC-06031 dated September 24, 2013. The NFPA 805 and License Renewal programs are dynamic programs that will be maintained current to reflect changes to the plant and incorporation of site and industry operating experience.

The following is a gap analysis of the two programs as they relate to License Renewal. The purpose of this gap analysis is to:

1) identify systems, structures, and components (SSCs) required by the NFPA 805 program which are not currently within the scope of License Renewal; and
2) identify SSCs previously within the scope of License Renewal for fire protection, but which are no longer required by the NFPA 805 program.

This gap analysis compares License Renewal scope differences and does not address areas outside the scope of License Renewal, such as personnel requirements, administrative controls, analysis methodology, or procedure requirements.

This Gap Analysis focused on:

1) Nuclear Safety Capability Assessment (safe shutdown equipment list), and
2) Other fire protection systems and components required to meet the NFPA 805 Nuclear Safety Capability Assessment for each fire area.

OVERALL RESULTS

The following LRA scoping and screening results have been revised to include or delete components to be consistent with the NFPA 805 program. Specific License Renewal changes are included in the NFPA 805 fire area summaries later in this gap analysis.

Condensate Storage and Transfer System (LRA Section 2.3.4.6 and LRA Table 2.3.4-6)

- Added a generic tubing component for the Condensate Storage Tank level transmitter (APLT0004) sensing line to LRA Table 2.3.4-6.
- Added a pump component and related flow orifice for the non-safety auxiliary feedwater pump (PAP01) to LRA Table 2.3.4-6.

Service Water System (LRA Section 2.3.3.5 and LRA Table 2.3.3-5)

- Added a flow orifice for the piping associated with valves EAHV0005 and EAHV0006 to LRA Table 2.3.3-5.

Circulating Water System (LRA Section 2.3.3.29 and LRA Table 2.3.3-29)

- Added steel piping, concrete piping, expansion joints, valves, and closure bolting which are used to return service water to the cooling tower basin.

Compressed Air System (LRA Section 2.3.3.8 and LRA Table 2.3.3-8)

- Noted that portions of the compressed air system are also within the scope of license renewal to support fire protection requirements based on the criteria of 10CFR54.4(a)(3). Specifically a backup supply of nitrogen gas from the outdoor nitrogen storage tanks (service gas subsystem) is also provided for the auxiliary feedwater control valves and main steam atmospheric relief valves.

In-Scope Tank Foundations and Structures (LRA Section 2.4.7)

- Added the nitrogen storage tank foundation and pipe trench to provide support, shelter, and protection for the compressed air system additions.

Radwaste Building HVAC System (LRA Section 2.3.3.17 and LRA Table 2.3.3-17)

- Deleted this LRA system from the scope of License Renewal due to the removal of the fire barrier function from the dampers and removal of a charcoal filter spray line. These components had no other License Renewal intended functions.

Fire Protection System (LRA Section 2.3.3.20 and Table 2.3.3-20)

- Removal of the fire protection (pressure boundary) function from fire protection components in NFPA 805 fire areas with safety related components required the addition of leakage boundary (spatial) as a function for the component.

The following systems and components were added to or removed from the scope of License Renewal for each fire area. Specific License Renewal changes are included in the NFPA 805 fire area summaries later in this gap analysis.

All Stand Pipe & Hose Stations added to the Scope of License Renewal in:

- Turbine Building

Fire Suppression System Changes to the Scope of License Renewal:

- Diesel Generator Building: The fire protection function for two fire suppression systems removed
- Auxiliary Building: The fire protection function for two fire suppression systems removed
- Laundry Decontamination Facility: One fire suppression system removed
- Radioactive Material (RAM) Storage Building: One fire suppression system removed
- Fuel Building: The fire protection function for one fire suppression system removed
- Radwaste Building: One fire suppression system removed
- Turbine Building: Four fire suppression systems removed
- Auxiliary Boiler Room: One fire suppression system removed
- Yard: Three fire suppression systems removed

Structures / Rated Fire Barriers Changes to the Scope of License Renewal:

- Fuel Building is one fire area: Rated fire barriers associated with interior areas removed
- Radwaste Building is one fire area: Rated fire barriers associated with interior areas removed

Gaseous Suppression Changes to the Scope of License Renewal:

- Control Building: One gaseous suppression system removed

Nuclear Safety Capability Assessment Equipment

The nuclear safety goals, objectives, and performance criteria of NFPA 805 are different from the deterministic regulations and guidance of BTP APCSB 9.5-1, Appendix A, and 10 CFR 50 Appendix R. NFPA 805 requires the reactor fuel be maintained in a safe and stable condition rather than achieving and maintaining cold shutdown. In addition, it is necessary to maintain the nuclear fuel safe and stable if a fire occurs while the plant is shut down (Modes 4, 5, 6, and defueled). If the performance goals cannot be met by using deterministic analysis, NFPA 805 allows the use of a risk informed performance-based approach. Due to the difference in methodology, some equipment was required to meet the NFPA 805 performance goals which were not previously credited.

Callaway maintains the NFPA 805 list of required equipment to meet the Nuclear Safety Capability Assessment in a database. This list of equipment was compared to the list of equipment in scope for License Renewal. Electrical equipment in the NFPA 805 list, such as switchgear, transmitters, indicators, and solenoid valves, is within the scope of License Renewal and screened out as active. This includes components associated with communication and detection. All the mechanical equipment in the Nuclear Safety Capability Assessment equipment list is within the scope of License Renewal with the exception of the following, which are being added to the scope of License Renewal since

the NRC Safety Evaluation Report for the NFPA 805 license amendment request has been issued.

Nuclear Safety Capability Assessment Components Added to Scope of License Renewal

ID	Description	Comments
NA	A level transmitter (APLT0004) sensing line for the Condensate Storage Tank	Added a generic component representing this line
EAHV0005	Service Water Return to Circulating Water System Valve.	Included associated piping and piping components (including the circulating water system, which returns the service water to the cooling tower basin)
EAHV0006	Service Water Return to Circulating Water System Valve.	Included associated piping and piping components (including the circulating water system, which returns the service water to the cooling tower basin)
PAP01	Non-safety Aux Feedwater Pump	Included associated piping and piping components
TKH2102A/B/C and PSEKH2101A/B/C	Nitrogen Storage Tanks and associated Rupture Discs	Included associated piping and piping components to connect the nitrogen storage tanks (service gas subsystem) to the compressed air system as a backup air supply.
N/A	Nitrogen Storage Tank Foundation and Pipe Trench	Included the nitrogen storage tank foundation and pipe trench to provide support, shelter, and protection for the compressed air system additions.

Comparison of BTP APCSB 9.5-1, Appendix A to NFPA 805

In addition to the Nuclear Safety Capability Assessment equipment, structures and components were put into the scope of License Renewal for fire protection based on the requirements of Branch Technical Position APCSB 9.5-1, Appendix A, and Callaway's commitments to them. NFPA 805 has similar requirements for this type of equipment. The table below provides a summary.

Comparison of BTP APCSB 9.5-1, Appendix A to NFPA 805

Equipment	APCSB 9.5-1, App. A, Section	NFPA 805 Section
Lighting	D.5	Not Applicable[1]
Communication	D.5	3.4.6
Detection	E.1	3.8
Suppression	E.2, E.3, E.4, E.5, E.6	3.5, 3.6, 3.7, 3.9, 3.10
Drains to remove fire fighting water	D.1(i)	4.3
Ventilation to remove smoke, etc.	D.1(i)	3.11.3(2)
Fire Barrier Floors, Walls, and Ceilings	D.1(j)	3.11.2
Fire Doors	D.1(j)	3.11.3(1)
Fire Dampers	D.1(j)	3.11.3(2)
Penetration Seals	D.1(j)	3.11.4
Coatings/Wraps	D.1, D.3	3.11.5

[1] NFPA 805 includes lighting in section 1.5.3 however, 10 CFR 50.48(c)(2)(i) excluded the Life Safety Goal, Objectives, and Criteria of NFPA 805 Chapter 1.5.3. Note, however, that emergency lighting in the control room is included in the scope of NFPA 805.

DETAILED RESULTS

In the original fire protection program, construction features, detection, suppression, and ventilation are discussed for each fire area in the Fire Hazards Analysis (FSAR Appendix 9.5B). In the NFPA 805 program, these are addressed in the Fire Safety Analysis for each fire area, which are documented in calculations rather than the FSAR. The following fire area descriptions identify changes to LRA tables based on NFPA 805 Fire Safety Analysis changes to the structural barriers (concrete elements or masonry walls), structural barrier features (fire rated doors, fire barrier penetration seals, etc.) and mechanical barrier features (dampers). A generic NFPA 805 barrier changes table has been provided in Attachment 1 to this gap analysis to demonstrate how different configurations of barriers and associated barrier features in fire areas were considered. Attachment 1 identifies and compares NFPA 805 functions and inspection/monitoring considerations with License Renewal functions and inspection/monitoring considerations.

Some License Renewal fire protection components are represented by generic components. These include fire barrier floors, walls, and ceilings, which are listed as concrete elements; fire barrier penetration seals; electrical raceways (wraps); and cementitious coatings. These were defined for all structures within the scope of License Renewal, and will be implemented at the Aging Management Program (AMP) level.

1. Reactor Building

The Reactor Building is a single fire area in both programs. There were no differences in the fire areas between the original fire protection program and the NFPA 805 program. No components were identified which must be added to or removed from the scope of License Renewal for the NFPA 805 program in the Reactor Building. The only fire barrier door, which is between the tendon access gallery and the Auxiliary Building, was reassigned from the Reactor Building to the Auxiliary Building.

Reactor Building Fire Barrier LRA Changes

Table 2.4-1 and Table 3.5.2-1 Reactor Building – Fire Barrier Doors				
Removed From License Renewal	Added to License Renewal	Fire Barrier Function Removed	Fire Barrier Function Added	Notes
		Yes		1
LRA Table 3.5.2-1 Reactor Building – Concrete Elements				
Removed From License Renewal	Added to License Renewal	Fire Barrier Function Removed	Fire Barrier Function Added	Notes
		Yes		2

Notes:

1. The License Renewal fire barrier intended function was removed from the emergency airlock hatch because it no longer has an NFPA 805 rated fire barrier

function. It remains within the scope of License Renewal based on other License Renewal intended functions. In addition, one Reactor Building door (the tendon gallery fire barrier door) was shown deleted in LRA Table 2.4-1 and Table 3.5.2-1. This door retained its fire barrier function, but was reassigned to the Auxiliary Building.

2. All Reactor Building exterior concrete elements in an environment of atmosphere/weather no longer have an NFPA 805 rated fire barrier function and therefore no longer have a License Renewal fire barrier intended function. These components remain within the scope of License Renewal based on other License Renewal intended functions.

2. Control Building

There are no differences in the fire areas between the original fire protection program and the NFPA 805 program. The Halon suppression subsystem for the control room cable trenches, SKC07, is not required by the NFPA 805 program. The components comprising SKC07 were removed from the scope of License Renewal. One damper was identified which was added to the scope of License Renewal. Several dampers and doors were identified which are not credited in the NFPA 805 program, and were removed from the scope of License Renewal or remained in scope but have their fire barrier function removed. The dampers and doors that were removed are associated with several small rooms housing DC batteries and chargers. In the original fire protection program, each room was treated as a separate fire area. In the NFPA 805 program, these rooms were analyzed as a single area, so the internal barriers were not credited. The following tables summarize the changes to components in the Control Building.

Control Building Halon System Changes

ID	Description	Comments
SKC07	Control Room Cable Trenches and Trays Halon System	Remove Halon cylinders TKC11, TKC12, TKC17, and TKC18, and all valves and piping associated with these cylinders from the scope of License Renewal

Control Building Damper and Fire Barrier Door License Renewal Scope Changes

ID	Description	Notes
GKD0245	Control Bldg Supply Air Unit to Switchgear Room 1 Upstream Fire Damper	1
GKD0042	Control Bldg Switchgear Room 3/Elec Equip Room Supply Air Fire Damper	2
GKD0043	Control Bldg Switchgear Room 4/Elec Equip Room Supply Air Fire Damper	2
GKD0044	Control Bldg Switchgear Room 1/Switchgear Room 3 Supply Air Fire Damper	2
GKD0045	Control Bldg Switchgear Room 1/Elec Equip Room Supply Air Fire Damper	2

GKD0046	Control Bldg Battery Room 4/Elec Equip Room Exhaust Air Fire Damper	2
GKD0048	Control Bldg Battery Room 1/Elec Equip Room Exhaust Air Fire Damper	2
GKD0050	Control Bldg Switchgear Room 4/Battery Room 4 Air Xfr Fire Damper	2
GKD0051	Control Bldg Switchgear Room 2/Battery Room 2 Air Xfr Fire Damper	2
GKD0052	Control Bldg Switchgear Room 1/Battery Room 1 Air Xfr Fire Damper	2
GKD0053	Control Bldg Switchgear Room 3/Battery Room 3 Air Xfr Fire Damper	2
GKD0055	Control Bldg Battery Room 1/Room 3 Elec Equipment A/C A Return Fire Damper	3
GKD0056	Control Bldg Battery Room 3/Cor Air Return Fire Damper	3
GKD0058	Control Bldg Switchgear Room 3/Elec Equipment Room A/C Unit Return Fire Damper	3
GKD0062	Elec Equipment Room/Battery Room 3 A/C Unit A Supply Air Fire Damper	3
GKD0063	Elec Equipment Room/Battery Room 1 A/C Unit A Supply Air Fire Damper	3
GKD0064	Elec Equipment Room & Switchgear Room 3 Supply Air Fire Damper	3
GKD0069	Control Bldg Switchgear Room 2/Elec Equipment Room A/C Return Fire Damper	3
GKD0070	Control Bldg Battery Room 4/Room 2 Elec Equipment A/C Unit B Return Fire Damper	3
GKD0071	Control Bldg Battery Room 2/Cor Air Return Fire Damper	3
GKD0075	Elec Equipment Room & Switchgear Room 2 Supply Air Fire Damper	3
GKD0077	Elec Equipment Room/Battery Room 2 A/C Unit B Supply Air Fire Damper	3
GKD0078	Elec Equipment Room/Battery Room 4 A/C Unit B Supply Air Fire Damper	3
GKD0240	Control Room Press Fan B Discharge Fire Damper	3
GKD0242	Control Room Press Fan A Discharge Fire Damper	3
GKD0247	Control Bldg Supply Air to Switchgear Room Fire Damper	2
GKD0289	HP Audio/Video Storage Room Fire Damper	2
GKD0290	Control Bldg Cor/Decon Sink Area Wall Fire Damper	2
GKD0291	Control Bldg Cor/Laundry & Respro Decon Area Wall Fire Damper	2
GKD0302	Count Room/Control Bldg Cor Air in Damper	2
DSK31032	Door from Corridor #2 to Stair CC-1	4
DSK31033	Door from Corridor to Stair CC-1	4
DSK31034	Door from Corridor to Stair CC-1	4
DSK31035	Door from Corridor #3 to Stair CC-1	4
DSK31036	Door from Com Corridor Lobby to Stair CC-1	4

DSK31037	Door from Corridor #2 to Stair CC-1	4
DSK31038	Door from Stair CC-1 to Stair CC-2	4
DSK31039	Door from Stair CC-1 to Corridor	4
DSK32011	Door from ALARA Briefing Room to Stairs C-1	4
DSK33041	Door from Com Corridor General Floor Area to Corridor	4
DSK33071	Fire Door to Combustible Liquid Storage Room	4
DSK34032	Door from S. Non Vital AC SWGR to SWBD Room 4	4
DSK34033	Door from Non Vital AC SWGR to SWBD Room 2	4
DSK34042	Door from SWBD Room 2 to SWBD Room 4	4
DSK34051	Door from Battery Room 4 to SWBD Room 4	4
DSK34072	Door from Battery Room 1 to SWBD Room 1	4
DSK34082	Door from SWBD Room 1 to SWBD Room 3	4
DSK34092	Door from N. Non Vital SWGR to SWBD Room 1	4
DSK34093	Door from N. Non Vital AC SWGR to SWBD Room 3	4
DSK34101	Door from SWBD Room 2 to Battery Room 2	4
DSK34141	Door from Battery Room 3 to SWBD Room 3	4
DSK36141	Door from Corridor #3 to Com Corridor General Floor Area	4

Notes:

1. Dampers added to the scope of License Renewal
2. Dampers removed from the scope of License Renewal
3. Dampers with the License Renewal fire barrier function removed
4. Doors with the License Renewal fire barrier function removed

Control Building Fire Barrier LRA Changes

LRA Table 3.3.2-11 Control Building HVAC System – Dampers				
Removed From License Renewal	Added to License Renewal	Fire Barrier Function Removed	Fire Barrier Function Added	Notes
				1
Table 3.5.2-2 Control Building – Fire Barrier Doors				
Removed From License Renewal	Added to License Renewal	Fire Barrier Function Removed	Fire Barrier Function Added	Notes
				2
LRA Table 3.5.2-2 Control Building – Concrete Elements				
Removed From License Renewal	Added to License Renewal	Fire Barrier Function Removed	Fire Barrier Function Added	Notes
		Yes		3

LRA Table 3.5.2-2 Control Building – Fire Barrier Penetration Seals				
Removed From License Renewal	Added to License Renewal	Fire Barrier Function Removed	Fire Barrier Function Added	Notes
Yes		Yes		4

Notes:

1. The License Renewal fire barrier intended function was removed from several dampers because they no longer have an NFPA 805 rated fire barrier function. This resulted in some dampers being removed from the scope of License Renewal and some remaining in the scope of License Renewal. Therefore, no LRA changes were required for the Control Building HVAC system.
2. The License Renewal fire barrier intended function was removed from several doors because they no longer have an NFPA 805 rated fire barrier function. This resulted in some doors being removed from the scope of License Renewal and some remaining in the scope of License Renewal for other intended functions. Therefore, no LRA changes were required for the Control Building fire barrier doors.
3. All Control Building exterior concrete elements in an environment of atmosphere/weather no longer have an NFPA 805 rated fire barrier function and therefore no longer have a License Renewal fire barrier intended function. These components remain within the scope of License Renewal based on other License Renewal intended functions.
4. All Control Building fire barrier penetration seals in an environment of atmosphere/weather no longer have an NFPA 805 rated fire barrier function and therefore no longer have a License Renewal fire barrier intended function. These seals were removed from the scope of License Renewal.

3. Diesel Generator Building

There are two fire areas in the Diesel Generator Building, one for each diesel generator. There were no differences in the fire areas between the original fire protection program and the NFPA 805 program. No components were identified which must be added to the scope of License Renewal for the NFPA 805 program in the Diesel Generator Building. However, the SKC26 suppression subsystem, East Diesel Generator Preaction Sprinkler System, and the SKC27 suppression subsystem, West Diesel Generator Preaction Sprinkler System, are not required by the NFPA 805 program. The fire protection (pressure boundary) function was removed from these components, but they remain in the scope of License Renewal for (a)(2). The following table summarizes the components currently in the scope of License Renewal but which are not required by the NFPA 805 program.

Diesel Generator Building Preaction Sprinkler System Changes

ID	Description	Comments
SKC26	East Diesel Generator Preaction Sprinkler System	Remove fire protection (pressure boundary) function from all components downstream of valve KCXV0561; add (a)(2) function for spatial interaction
SKC27	West Diesel Generator Preaction Sprinkler System	Remove fire protection (pressure boundary) function from all components downstream of valve KCXV0562; add (a)(2) function for spatial interaction

Diesel Generator Building Fire Barrier LRA Changes

LRA Table 3.3.2-16 Diesel Generator Building HVAC System - Dampers				
Removed From License Renewal	Added to License Renewal	Fire Barrier Function Removed	Fire Barrier Function Added	Notes
				1
LRA Table 3.5.2-5 Diesel Generator Building – Concrete Elements				
Removed From License Renewal	Added to License Renewal	Fire Barrier Function Removed	Fire Barrier Function Added	Notes
		Yes		2
LRA Table 3.5.2-5 Diesel Generator Building – Fire Barrier Penetration Seals				
Removed From License Renewal	Added to License Renewal	Fire Barrier Function Removed	Fire Barrier Function Added	Notes
		Yes		3

Notes:

1. There were no changes to the Diesel Generator Building HVAC system.
2. All Diesel Generator Building exterior concrete elements in an environment of atmosphere/weather no longer have an NFPA 805 rated fire barrier function and therefore no longer have a License Renewal fire barrier intended function. These components remain within the scope of License Renewal based on other License Renewal intended functions.
3. All Diesel Generator Building exterior fire barrier penetration seals in an environment of atmosphere/weather no longer have an NFPA 805 rated fire barrier function and therefore no longer have a License Renewal fire barrier intended function. The Diesel Generator Building exterior fire barrier penetration seals were removed from the scope of License Renewal. The Diesel Generator Building interior fire barrier penetration seals remain within the scope of License Renewal.

4. Auxiliary Building

The only change to the Auxiliary Building fire areas is the Auxiliary Shutdown Panel room. In the original program, this room comprises one fire area. In the NFPA 805 program, it is divided into two fire areas: one for train A equipment and one for train B equipment. In the current fire protection program, the two halves of the room are divided by a rated fire wall with fire doors, as is the case in the NFPA 805 program. Thus, this difference has no impact on components within the scope of License Renewal. No components were identified which must be added to the scope of License Renewal for the NFPA 805 program in the Auxiliary Building. Two suppression subsystems, SKC22, Auxiliary Feedwater Pump Manual Water Spray System, and SKC36, South Cable Chase Wet Pipe Sprinkler System, are not credited in the NFPA 805 program. The fire protection (pressure boundary) function was removed from these components, but remains in the scope of License Renewal for (a)(2). This change required the addition of leakage boundary (spatial) as a function of the Fire Protection System in LRA Section 2.3.3.20 and Table 2.3.3-20. One damper and several doors were identified which had a fire barrier function added. Several dampers which are not credited in the NFPA 805 program were removed from the scope of License Renewal. The following tables summarize the component changes in the Auxiliary Building.

Auxiliary Building Suppression System Changes

ID	Description	Comments
SKC22	Auxiliary Feedwater Pump Manual Water Spray System	Remove fire protection (pressure boundary) function from all components downstream of valve KCV0730; add (a)(2) function for spatial interaction
SKC36	South Cable Chase Wet Pipe Sprinkler System	Remove fire protection (pressure boundary) function from all components downstream of valve KCV0437; add (a)(2) function for spatial interaction

Auxiliary Building Damper and Fire Barrier Door License Renewal Scope Changes

ID	Description	Notes
GTD0014	Containment S/D Purge Exhaust Outer Containment Damper	1
GLD0016	Aux Bldg Pen Room A Exhaust to Filter Adsorber Unit Damper	2
GLD0017	MG Set Room Fan Coil Discharge Downstream Damper	2
GLD0018	MG Set Room Fan Coil Unit Suction Damper	2
GLD0019	Aux Bldg Pen Room A Air Supply Damper	2
GLD0028	Aux Bldg Pen Room B Exhaust to Filter	2
GLD0029	Aux Bldg Pen Room B Air Supply Damper	2
GLD0068	Aux Bldg El 1974 to Filter Adsorber Unit in Fire Damper	2
DSK11195	Door from Aux Bldg to Outside	3
DSK11231	Door from Passage to Letdown Heat Exchanger Room	3

DSK14132	Door from Aux Shutdown Panel Room to Back of ASP Room	4
DSK14133	Door from Aux Shutdown Panel Room	4
DSK31041	Door from AB Corridor to Stairs from Health Physics	4
DSK33044	Door from Com Corridor Gen Floor to AB	4
DSK36091	Door from Control Room to SAS Room	4

Notes:

1. Dampers with fire barrier function added
2. Dampers removed from the scope of License Renewal
3. Doors with fire barrier function removed
4. Doors with fire barrier function added

Auxiliary Building Fire Barrier LRA Changes

LRA Table 3.3.2-13 Auxiliary Building HVAC System – Dampers				
Removed From License Renewal	Added to License Renewal	Fire Barrier Function Removed	Fire Barrier Function Added	Notes
Yes		Yes		1
LRA Table 2.3.2-4 and LRA Table 3.2.2-4 Containment Purge System – Dampers				
Removed From License Renewal	Added to License Renewal	Fire Barrier Function Removed	Fire Barrier Function Added	Notes
			Yes	1
LRA Table 2.4-3 and Table 3.5.2-3 Auxiliary Building – Fire Barrier Doors				
Removed From License Renewal	Added to License Renewal	Fire Barrier Function Removed	Fire Barrier Function Added	Notes
		Yes	Yes	2
LRA Table 3.5.2-3 Auxiliary Building – Concrete Elements, Hatches, and Hatches and Plugs				
Removed From License Renewal	Added to License Renewal	Fire Barrier Function Removed	Fire Barrier Function Added	Notes
		Yes		3
LRA Table 3.5.2-3 Auxiliary Building – Fire Barrier Penetration Seals				
Removed From License Renewal	Added to License Renewal	Fire Barrier Function Removed	Fire Barrier Function Added	Notes
		Yes		4

Notes:

1. The License Renewal fire barrier intended function was removed from several dampers because they no longer have an NFPA 805 rated fire barrier function. This resulted in some dampers being removed from the scope of License Renewal. The License Renewal fire barrier intended function was added to one damper in the Containment Purge system in the Auxiliary Building.
2. All Auxiliary Building exterior fire barrier doors in an environment of atmosphere/weather no longer have an NFPA 805 rated fire barrier function and therefore no longer have a License Renewal fire barrier intended function. These Auxiliary Building components remain within the scope of License Renewal based on other License Renewal intended functions. The License Renewal fire barrier intended function was added to several other doors currently within the scope of License Renewal.
3. All Auxiliary Building exterior concrete elements, hatches, and hatches and plugs in an environment of atmosphere/weather no longer have an NFPA 805 rated fire barrier function and therefore no longer have a License Renewal fire barrier intended function. These Auxiliary Building components remain within the scope of License Renewal based on other License Renewal intended functions.
4. All Auxiliary Building fire barrier penetration seals in an environment of atmosphere/weather no longer have an NFPA 805 rated fire barrier function and therefore no longer have a License Renewal fire barrier intended function. The external fire barrier penetration seals were removed from the scope of License Renewal. The Auxiliary Building interior fire barrier penetration seals remain within the scope of license renewal.

5. Laundry Decontamination Facility

The Laundry Decontamination Facility, which is treated as part of the Auxiliary Building in LRA Section 2.4.3, consists of only one fire area. The NFPA 805 program does not consider the Laundry Decontamination Facility to be a power block structure. There are no differences between the original fire protection program and the NFPA 805 program. No components were identified which must be added to the scope of License Renewal for the NFPA 805 program in the Laundry Decontamination Facility. The suppression components in the Laundry Decontamination Facility are not required by the NFPA 805 program. These components were removed from the scope of License Renewal. The following table summarizes the components currently in the scope of License Renewal but which are not required by the NFPA 805 program.

Laundry Decontamination Facility Suppression System Changes

ID	Description	Comments
NA	Laundry Decontamination Facility Suppression System	Remove all components downstream of valve KCV0580 from the scope of License Renewal.

6. RAM Storage Building

The RAM Storage Building, which is treated as part of the Auxiliary Building in LRA Section 2.4.3, consists of one fire area. The NFPA 805 program does not consider the RAM Storage Building to be a power block structure. There are no differences in the fire areas between the original fire protection program and the NFPA 805 program. No components were identified which must be added to the scope of License Renewal for the NFPA 805 program in the RAM Storage Building. The fire suppression components in the RAM Storage Building are not required by the NFPA 805 program. These components were removed from the scope of License Renewal. The following table summarizes the components currently in the scope of License Renewal but which are not required by the NFPA 805 program.

RAM Storage Building Suppression System Changes

ID	Description	Comments
NA	RAM Storage Building Suppression System	Remove all components downstream of valve KCV0579 from the scope of License Renewal

7. Fuel Building

In the NFPA 805 program, there is now only one fire area for the entire Fuel Building. The Nuclear Safety Capability Assessment assumed a whole-room burnup level; i.e., all components and cables were assumed to fail. Thus, the fire barrier function for all the interior fire doors, dampers, walls, and seals were removed. In an evaluation of the potential for radiological release due to firefighting activities, it was determined that radioactive release performance criterion was met. Dampers that had only a fire barrier function and were no longer credited in NFPA 805 were removed from the scope of License Renewal. Dampers which have a pressure boundary function in addition to the fire barrier function remain in the scope of License Renewal, but had the fire barrier function removed. All the interior doors were removed from the scope of License Renewal as they no longer have a fire barrier function or any other license renewal intended function. No components were identified which must be added to the scope of License Renewal for the NFPA 805 program in the Fuel Building. One suppression subsystem, SKC25, Fuel Building Railroad Bay Preaction Sprinkler System, is not required by the NFPA 805 program. The fire protection (pressure boundary) function was removed from these components, but they remain in the scope of License Renewal for (a)(2). The following tables summarize the changes in the Fuel Building.

Fuel Building Suppression System Changes

ID	Description	Comments
SKC25	Fuel Building Railroad Bay Preaction Sprinkler System	Remove fire protection (pressure boundary) function from all components downstream of valve KCV0076; add (a)(2) function for spatial interaction

Fuel Building Damper and Fire Barrier Door License Renewal Scope Changes

ID	Description	Notes
GGD0007	FB Air Supply Header Electrical Equip Room Fire Damper	1
GGD0008	SFP Cooling Pump Rooms A&B Main Air Supply Fire Damper	1
GGD0009	SFP Cooling Pump Rooms A/B Main Air Supply Fire Damper	1
GGD0010	FB Air Supply Sys Supply Header SFP Area Fire Damper	1
GGD0011	Emergency Exhaust Filter Adsorber Room A Out Fire Damper	2
GGD0012	FB Elec Equip Room/Cask Shipping & Receiving Area Fire Damper	1
GGD0013	FB Elec Equip Room/HVAC Equipment Room Fire Damper	1
GGD0014	SFP Pump Room A/Cask Shipping & Receiving Area Fire Damper	1
GGD0016	SFP Pump Room B/Cask Shipping & Receiving Area Fire Damper	1
GGD0047	FB Air Sys Supply Header Emergency Exhaust Room B Fire Damper	1
GGD0048	FB Air Sys Suction Header SFP Area Fire Damper	1
GGD0049	FB Normal Exhaust Air Sys Suction Header Equip Drain Sump Fire Damper	1
GGD0050	FB Normal Exhaust Air Sys Suction Header Floor Drain Sump Fire Damper	1
GGD0051	FB Normal Exhaust Air Sys Suction Header Equip Drain Sump Fire Damper	1
GGD0052	FB Normal Exhaust Air Sys Suction Header Floor Drain Sump Fire Damper	1
GGD0053	FB Normal Exhaust Air Sys Suction Header Equip Drain Sump Fire Damper	1
GGD0054	FB Normal Exhaust Air Sys Suction Header Floor Drain Sump Fire Damper	1
GGD0055	FB Normal Exhaust Air Sys Suction Header Equip Drain Sump Fire Damper	1
GGD0056	FB Emergency Filter ADS Units A&B Cross Connect Fire Damper	2
GGD0057	FB Emergency Filter ADS Units A&B Cross Connect Fire Damper	2
GGD0058	FB Air Sys Supply Header Emergency Exhaust Room A Fire Damper	1
GGD0061	Emergency Exhaust Filter Adsorber Room B Out Fire Damper	2
GGD0062	FB Air Sys Return Header SFP Area Fire Damper	1
GGD0063	FB Air Sys Supply Header SFP Area Fire Damper	1
GGD0064	FB Air Sys Supply Header SFP Area Fire Damper	1
GGD0065	FB Air Sys Supply Header SFP Area Fire Damper	1
GGD0066	FB Air Sys Supply Header SFP Area Fire Damper	1
GGD0067	Emergency Exhaust Air Sys B Suction Header Aux/FB Fire Damper	2
GGD0068	Emergency Exhaust Air Sys Suction Header Aux/FB Fire Damper	2
DSK6104	FB Door From West Fuel Pool Heat Exchanger Room to	3

1	Laydown	
DSK61051	FB Door From East Fuel Pool Heat Exchanger Room to Laydown	3
DSK62021	FB Door From Electric Equip Room to Passage	3
DSK62022	FB Door From Electric Equip Room to FB Supply Air	3
DSK63031	Door From Emergency Exhaust Filter Absorber B to Gen Floor	3
DSK63041	Door From Emergency Exhaust Filter Absorber A to Gen Floor	3

Notes:

1. Dampers removed from the scope of License Renewal
2. Dampers which had the fire barrier function removed
3. Doors removed from the scope of License Renewal

Fuel Building Fire Barrier LRA Changes

LRA Table 3.3.2-14 Fuel Building HVAC System - Dampers				
Removed From License Renewal	Added to License Renewal	Fire Barrier Function Removed	Fire Barrier Function Added	Notes
				1
LRA Table 2.4-10 and Table 3.5.2-10 Fuel Building – Fire Barrier Doors				
Removed From License Renewal	Added to License Renewal	Fire Barrier Function Removed	Fire Barrier Function Added	Notes
Yes		Yes		2, 3
LRA Table 3.5.2-10 Fuel Building – Concrete Elements				
Removed From License Renewal	Added to License Renewal	Fire Barrier Function Removed	Fire Barrier Function Added	Notes
		Yes		4

Notes:

1. The License Renewal fire barrier intended function was removed from several dampers because they no longer have an NFPA 805 rated fire barrier function. This resulted in some dampers being removed from the scope of License Renewal and some remaining in the scope of License Renewal. No LRA changes were required for the Fuel Building HVAC system.
2. All Fuel Building fire barrier doors were removed from the scope of License Renewal because they no longer have an NFPA 805 rated fire barrier function and therefore no longer have a License Renewal fire barrier intended function. Some doors remain in the scope of License Renewal with other intended functions.

3. All fire barrier doors between the Fuel Building and the Auxiliary Building with a fire barrier License Renewal intended function are assigned to the Auxiliary Building.
4. All Fuel Building exterior concrete elements in an environment of atmosphere/weather no longer have an NFPA 805 rated fire barrier function and therefore no longer have a License Renewal fire barrier intended function. These Fuel Building exterior concrete elements remain within the scope of License Renewal based on other License Renewal intended functions.

8. Radwaste Building

The Radwaste Building consists of only one fire area. In the original fire protection program, only the Radwaste Tunnel is included in this fire area. In the NFPA 805 program, this fire area includes the tunnel and the entire Radwaste Building. The Radwaste Building contains no equipment required to meet the Nuclear Safety Capability Assessment. The fire suppression system and internal fire barriers are not required in the NFPA 805 program. In an evaluation of the potential for radiological release due to firefighting activities, it was determined that radioactive release performance criterion was met. Therefore, the fire barrier function for all the interior fire barrier doors, dampers, walls, and fire barrier penetration seals was removed. The six dampers which have only a fire barrier function were no longer required for NFPA 805 and therefore removed from the scope of License Renewal. In addition, generic components such as pipe caps and fire hose fittings associated with the filter adsorber units in the Radwaste Building were removed from the scope of License Renewal. No components were identified which must be added to the scope of License Renewal for the NFPA 805 program in the Radwaste Building. The SKC33 suppression subsystem in the Radwaste Building is not required by the NFPA 805 program. These components were removed from the scope of License Renewal. The following tables summarize the changes in the Radwaste Building.

Radwaste Building Components Removed From the Scope of License Renewal.

ID	Description	Comments
SKC33	Radwaste Building Suppression System	Remove all components downstream of valve KCV0347 from the scope of License Renewal.
NA	Generic components associated with the Radwaste Building Exhaust Filter Adsorber Unit	Components include a fire hose fitting, pipe cap, piping, and a reducer.

Radwaste Building (RWB) Damper and Fire Barrier Door License Renewal Scope Changes

ID	Description	Notes
GHD0002	RWB EL 2000 Air Supply Fire Damper	1
GHD0003	RWB EL 1976 Air Supply Fire Damper	1
GHD0009	RWB EL 2000 Air Return Fire Damper	1
GHD0010	RWB EL 1976 Air Return Fire Damper	1
GHD0011	RWB Access Tunnel XFR Fan Out Fire Damper	1

GHD0012	Rad Pipe Tunnel Air Return Fire Damper	1
DSK71131	Door from Tunnel to General Area	2
DSK71141	RWB Door From Gen. Area to Central Stairs	2
DSK71142	RWB Door From Central Stairs to Gen. Floor Area	2
DSK71144	RWB Door From Central Stair to Vestibule	2
DSK71321	RWB Door From East Stairs to Corridor	2
DSK71322	RWB Door From East Stairs to Corridor	2
DSK71324	RWB Door From East Stair to Gen. Floor Area	2
DSK72281	RWB Door From Drywaste Compactor to Corridor	2
DSK72311	RWB Door From Subcoolers Condenser Room to Stairs	2

Notes:

1. Dampers removed from the scope of License Renewal
2. Fire Barrier Doors removed from the scope of License Renewal

Radwaste Building Fire Barrier LRA Changes

LRA Table 2.3.3-17 and Table 3.3.2-17 Radwaste Building HVAC System – Dampers and Piping				
Removed From License Renewal	Added to License Renewal	Fire Barrier Function Removed	Fire Barrier Function Added	Notes
Yes		Yes		1
LRA Table 2.4-9 and Table 3.5.2-9 Radwaste Building – Fire Barrier Doors				
Removed From License Renewal	Added to License Renewal	Fire Barrier Function Removed	Fire Barrier Function Added	Notes
Yes		Yes		2
LRA Table 2.4-9 and Table 3.5.2-9 Radwaste Building – Coatings/Wraps				
Removed From License Renewal	Added to License Renewal	Fire Barrier Function Removed	Fire Barrier Function Added	Notes
Yes		Yes		2
LRA Table 2.4-9 and Table 3.5.2-9 Radwaste Building – Fire Barrier Penetration Seals				
Removed From License Renewal	Added to License Renewal	Fire Barrier Function Removed	Fire Barrier Function Added	Notes
Yes		Yes		2

LRA Table 2.4-9 and Table 3.5.2-9 Radwaste Building – Concrete Elements				
Removed From License Renewal	Added to License Renewal	Fire Barrier Function Removed	Fire Barrier Function Added	Notes
		Yes		3

Notes:

1. The Radwaste Building HVAC system was removed from the scope of License Renewal.
2. All Radwaste Building fire barrier doors, coatings/wraps, and fire barrier penetration seals were removed from the scope of License Renewal because they no longer have an NFPA 805 rated fire barrier function and therefore no longer have a License Renewal fire barrier intended function. Some doors remain in the scope of License Renewal with other intended functions.
3. All Radwaste Building concrete elements no longer have an NFPA 805 rated fire barrier function and therefore no longer have a License Renewal fire barrier intended function. These Radwaste Building concrete elements remain within the scope of License Renewal based on other License Renewal intended functions.

9. Turbine Building and Communications Corridor

Two fire areas are defined for the Turbine Building in the original fire protection program. The first is a stairwell adjacent to the Auxiliary Building, and the second encompasses the area from the Auxiliary Building wall to 50 feet north of the Auxiliary Building wall. The remaining area in the Turbine Building is not included in the original FSAR fire hazards analysis. The Communications Corridor consists of one fire area, separate from the Turbine Building.

Under the NFPA 805 program, the entire Turbine Building is a single fire area, and includes the Communications Corridor.

The only components identified for the NFPA 805 program in the Turbine Building and Communications Corridor which were added to the scope of License Renewal are the standpipe and hose stations in the Turbine Building. This change resulted from the addition of the Turbine Building and Communications Corridor as a power block structure.

Some fire suppression components in the Turbine Building which were originally in the scope of License Renewal are not required by the NFPA 805 program. These include SKC47, BOP Computer Room Sprinkler System; SKC08, Lube Oil Storage Tank Wet Pipe Sprinkler System; SKC10, Lube Oil Reservoir Room Wet Pipe Sprinkler System, and SKC11, the deluge system for the Hydrogen Seal Oil Unit. These were removed from the scope of License Renewal.

Only three dampers in the Turbine Building which were originally in the scope of License Renewal are required by the NFPA 805 program. The rest were removed from the scope of License Renewal. Five dampers in the Turbine Building HVAC system are located in the Auxiliary Building and are safety-related. These five dampers remain in scope, but do not have a fire barrier function.

Only one door in the Turbine Building remains in the scope of License Renewal as a fire barrier. The remaining doors are not required by the NFPA 805 program. These remaining doors, except for two generic doors with a Shelter, Protection function, were removed from the scope of License Renewal.

The following tables summarize the License Renewal changes to components in the Turbine Building due to adoption of the NFPA 805 program.

Turbine Building Components Added to the Scope of License Renewal

ID	Description	Comments
	All standpipe and hose stations in the Turbine Building	KCHR0070, KCHR0073, KCHR0074, KCHR0075, KCHR0076, KCHR0077, KCHR0080, KCHR0081, KCHR0082, KCHR0083, KCHR0084, KCHR0085, KCHR0086, KCHR0087, KCHR0088, KCHR0089, KCHR0090, KCHR0091, KCHR0092, KCHR0093, KCHR0096, KCHR0097, KCHR0098, and KCHR0099, and associated piping and valves - add to the scope of License Renewal

Turbine Building Components Removed From the Scope of License Renewal

ID	Description	Comments
SKC08	Lube Oil Storage Tank Wet Pipe Sprinkler System	Remove all components downstream of valve KCV0038 from the scope of License Renewal
SKC10	Lube Oil Reservoir Room Wet Pipe Sprinkler System	Remove all components downstream of valve KCV0029 from the scope of License Renewal
SKC47	BOP Computer Room Sprinkler System	Remove all components downstream of valve KCV0479 from the scope of License Renewal
SKC11	Hydrogen Seal Oil Deluge System	Remove all components downstream of valve KCV0063 from the scope of License Renewal

Turbine Building Damper and Fire Barrier Door License Renewal Scope Changes

ID	Description	Notes
GED0023	TB Computer Room Fan Coil Units Air Return Fire Damper	1
GED0024	TB Computer Rm Fan Coil Units To Computer Rm Fire Damper	1
GED0025	TB Communications Corridor / Conference Room Fire Damper	1
GED0026	TB Conference Room / Work Control Area Fire Damper	1
GED0031	TB PK Battery Room/Turbine Building Fire Damper	1
GED0032	TB PJ Battery Room Fire Damper	1
GED0053	TB Lube Oil Room Supply Fire Damper	1
GED0054	TB Lube Oil Room Roof Exhaust Fan Suction Fire Damper	1
GED0055	TB PJ Battery Rm Chilled Wtr Coil to Battery Rm Fire Damper	1
GED0056	TB PK Battery Rm Chilled Wtr Coil to Battery Rm Fire Damper	1
GED0058	Field Office/Communications Corridor Air Return Fire Damper	1
GED0059	Comp Rm/Communications Corridor Air Return Fire Damper	1
GED0060	TB Elevator Mach Room EL 2078 Air Supply Fire Damper	1
GED0061	TB Elevator Mach Room EL 2078 Air Return Fire Damper	1
GED0062	TB Elevator Mach Room Air Supply Fire Damper	1
GED0071	TB Lube Oil Room Supply Air Unit Discharge Fire Damper	1
GED0072	TB Lube Oil Room Exhaust Fan Suction Fire Damper	1
GED0073	Communications Corridor EL 2000 Air Supply Fire Damper	1
GED0074	TB Elevator Mach Room Exhaust Fan Suction Fire Damper	1
GED0076	Communications Corridor EL 2032 Air Supply Fire Damper	1
GED0077	Comm Cor Supply Unit To Comm Cor EL 2032 Fire Damper	1
GED0078	Comm Cor Supply Unit To Comm Cor EL 2032 Fire Damper	1
GED0126	TB Radio Room/Battery Room Air Supply Fire Damper	1
GED0129	TB Battery Room Duct Heater Discharge Fire Damper	1
GED0130	TB Radio Room Air Return Fire Damper	1
GED0133	TB Battery Room Exhaust Fan Suction Fire Damper	1
GED0138	Communications Corridor/Restroom Fire Damper	1
GED0142	TB Battery Room No 1 Exhaust Fan Suction Fire Damper	1
GED0143	TB Battery Room 1 Air Supply Fire Damper	1
GED0144	TB Battery Room 1 Air Return Fire Damper	1
GED0148	TB Battery Room 1 Air Supply Fire Damper	1
DSK41012	TB Door from Gen. Floor To Southwest Stairs	2
DSK41013	Door from Communications Corridor to Southwest stairs	2
DSK41014	TB Door to the T-1 Stairs (South)	2
DSK41016	TB Door from S. West Stairs to Gen Floor Area	2
DSK41018	TB Door from Northwest Stairs to CC Gen. Floor	2
DSK41019	TB Door from CC Gen Floor to S. West Stairs	2
DSK43081	TB Door from Truck Bay to Lube Oil Tanks	2
DSK43091	TB Door from Gen. Floor to West Stair	2
DSK43093	TB Door from West Stairs to Gen Floor Area	2
DSK43094	TB Door to Stairwell T-2	2
DSK43101	TB Door from Gen. Floor to Northwest Stair	2
DSK43103	TB Door from General Floor to North West Stairs	2
DSK43104	TB Door from Gen. Floor to West Stairs	2

DSK43121	TB Door from R/R Bay to NE Stairwell	2
DSK43123	TB Door from Gen. Floor to NE Stairs	2
DSK43124	TB Door from Gen Floor to East Stairs	2
DSK43131	TB Door from Gen. Floor to East Stairs	2
DSK43133	TB Door from Gen. Floor to SE Stairs	2
DSK43134	TB Door from Gen. Floor to East Stairs	2
DSK43141	TB Door from Truck Bay to Southeast Stairs	2
DSD43143	TB Door from Southeast Stairs to Gen Floor	2
DSK43144	TB Door from Gen. Floor to South Stairs	2
DSK43145	TB Door from Gen. Floor to SE Stairs	2
DSK43171	TB Door from Process Sample Lab to Gen Floor	2
DSK44021	TB Door from East Battery Room to Gen. Floor	2
DSK44022	TB Door from East Battery Room to Gen Floor	2
DSK44031	TB Door from Lube Oil Res. Room to Gen. Floor	2
DSK44041	TB Door from West Battery Room to Gen Floor Area	2
DSK45041	Door from EHC Control Cabinet Room to General Floor A	2
DSK45042	TB Door from EHC Control Cab Room to Gen Floor	2

Notes:

1. Dampers removed from the scope of License Renewal
2. Doors removed from the scope of License Renewal

Turbine Building Fire Barrier LRA Changes

LRA Table 3.3.2-18 Turbine Building HVAC System - Dampers				
Removed From License Renewal	Added to License Renewal	Fire Barrier Function Removed	Fire Barrier Function Added	Notes
		Yes		1
LRA Table 3.5.2-4 Turbine Building – Fire Barrier Doors				
Removed From License Renewal	Added to License Renewal	Fire Barrier Function Removed	Fire Barrier Function Added	Notes
				2
LRA Table 2.4-4 and Table 3.5.2-4 Turbine Building – Coatings/Wraps				
Removed From License Renewal	Added to License Renewal	Fire Barrier Function Removed	Fire Barrier Function Added	Notes
Yes		Yes		3

LRA Table 2.4-4 and 3.5.2-4 Turbine Building – Concrete Elements				
Removed From License Renewal	Added to License Renewal	Fire Barrier Function Removed	Fire Barrier Function Added	Notes
		Yes		4
LRA Table 2.4-4 and Table 3.5.2-4 Turbine Building – Hatches and Plugs				
Removed From License Renewal	Added to License Renewal	Fire Barrier Function Removed	Fire Barrier Function Added	Notes
		Yes		5
LRA Table 2.4-4 and Table 3.5.2-4 Turbine Building – Metal Siding				
Removed From License Renewal	Added to License Renewal	Fire Barrier Function Removed	Fire Barrier Function Added	Notes
		Yes		5

Notes:

1. The License Renewal fire barrier intended function was removed from several dampers because they no longer have an NFPA 805 rated fire barrier function. This resulted in some dampers being removed from the scope of License Renewal and some remaining in the scope of License Renewal for other license renewal intended functions.
2. All but one Turbine Building fire barrier doors were removed from the scope of License Renewal because they no longer have an NFPA 805 rated fire barrier function and therefore no longer have a License Renewal fire barrier intended function. The one remaining fire barrier door is the door between the Turbine Building and the Auxiliary Boiler Room.
3. All Turbine Building fire barrier coatings/wraps were removed from the scope of License Renewal because they no longer have an NFPA 805 rated fire barrier function and therefore no longer have a License Renewal fire barrier intended function.
4. All turbine building exterior concrete elements in environment of atmosphere/weather no longer have a rated fire barrier intended function. The one remaining rated fire barrier is the masonry block wall between the Turbine Building and the Auxiliary Boiler Room.
5. All Turbine Building hatches and plugs and metal siding no longer have an NFPA 805 rated fire barrier function and therefore no longer have a License Renewal fire barrier intended function. These hatches and plugs and metal siding remain within the scope of License Renewal based on other License Renewal intended functions.

10. Auxiliary Boiler Room

The Auxiliary Boiler Room, which is treated as part of the Turbine Building in LRA Section 2.4.4, consists of one fire area. There were no differences in the fire areas between the original fire protection program and the NFPA 805 program. This room contains no

equipment required for the Nuclear Capability Safety Assessment. The SKC09 fire suppression subsystem is not required by the NFPA 805 program. The suppression system was removed from the scope of License Renewal as a result of the NFPA 805 program.

Auxiliary Boiler Room Suppression System Changes

ID	Description	Comments
SKC09	Auxiliary Boiler Room Suppression Systems	Remove all components downstream of valve KCV0028 from the scope of License Renewal.

11. ESW Pump House

In the original fire protection program, the ESW Pump House is a single fire area with two fire zones. For License Renewal, the ESW Pump House is treated as part of ESW Structures. In the NFPA 805 program, it is divided into two areas, one for each room (train), which correspond to the original fire zones. The two rooms are divided by a fire wall. This difference has no impact on License Renewal because the wall was already in scope as a fire barrier. All ESW Pump House exterior fire barrier doors, exterior concrete elements, and exterior fire barrier penetration seals in an environment of atmosphere/weather no longer have an NFPA 805 rated fire barrier function and therefore no longer have a License Renewal fire barrier intended function. No components were identified which must be added to or removed from the scope of License Renewal for the NFPA 805 program in the ESW Pump House.

ESW Structures Fire Barrier Door License Renewal Scope Changes

ID	Description	Notes
Generic	Exterior ESW Structure Fire Barrier Doors	1

Notes:

1. Doors with fire barrier function removed.

ESW Structures Fire Barrier LRA Changes

LRA Table 2.4-11 and Table 3.5.2-11 ESW Structures – Fire Barrier Doors				
Removed From License Renewal	Added to License Renewal	Fire Barrier Function Removed	Fire Barrier Function Added	Notes
		Yes		1
LRA Table 3.5.2-11 ESW Structures – Concrete Elements				
Removed From License Renewal	Added to License Renewal	Fire Barrier Function Removed	Fire Barrier Function Added	Notes
		Yes		2

LRA Table 3.5.2-11 ESW Structures – Fire Barrier Penetration Seals				
Removed From License Renewal	Added to License Renewal	Fire Barrier Function Removed	Fire Barrier Function Added	Notes
		Yes		3

Notes:

1. All ESW Pump House exterior fire barrier doors in an environment of atmosphere/weather no longer have an NFPA 805 rated fire barrier function and therefore no longer have a License Renewal fire barrier intended function. These ESW Pump House exterior doors remain within the scope of License Renewal based on other License Renewal intended functions. The ESW Pump House interior fire barrier doors remain within the scope of license renewal.
2. All ESW Pump House exterior concrete elements in an environment of atmosphere/weather no longer have an NFPA 805 rated fire barrier function and therefore no longer have a License Renewal fire barrier intended function. These ESW Pump House exterior concrete elements remain within the scope of License Renewal based on other License Renewal intended functions.
3. All ESW Pump House exterior fire barrier penetration seals in an environment of atmosphere/weather no longer have an NFPA 805 rated fire barrier function and therefore no longer have a License Renewal fire barrier intended function. The ESW Pump House exterior fire barrier penetration seals were removed from the scope of license renewal. The ESW Pump House interior fire barrier penetration seals remain within the scope of license renewal.

12. Ultimate Heat Sink Cooling Tower

The Ultimate Heat Sink Cooling Tower, which is treated as part of ESW Structures, is a single fire area with two fire zones. In the NFPA 805 program, it is divided into two areas which correspond to the original fire zones, one for the north side of the cooling tower and the attached electrical equipment rooms, and one for the south side of the cooling tower and attached electrical equipment rooms. This difference has no impact on License Renewal because the wall between the rooms was already in scope as a fire barrier. All Ultimate Heat Sink Cooling Tower exterior fire barrier doors, exterior concrete elements, and exterior fire barrier penetration seals in an environment of atmosphere/weather no longer have an NFPA 805 rated fire barrier function and therefore no longer have a License Renewal fire barrier intended function. No components were identified which must be added to or removed from the scope of License Renewal for the NFPA 805 program in the Ultimate Heat Sink Cooling Tower.

13. Yard

The only Yard areas included in the original fire protection program are the areas around the Refueling Water Storage Tank, the Condensate Storage Tank, and the Emergency Diesel Fuel Oil Storage Tanks. In addition to these areas, the NFPA 805 program Yard fire area includes the Fire Water Pump House and the areas around the Circulating and Service Water Pump House, the ESF Transformer, the Main Transformers, the Main Switchyard, the Station Service Transformers, the Ultimate Heat Sink, and, generally, the

entire yard area. The fire barriers (such as the walls and doors in the Fire Water Pump House and the wall separating transformers) are already in scope. No components in the Yard were identified which must be added to the scope of License Renewal due to the transition to NFPA 805. The safety-related cable duct banks and access hatches had a fire barrier function added. The suppression components for XMR01, Startup Transformer; XNB01, ESF Transformer A; and XNB02, ESF Transformer B, are not required by the NFPA 805 program. These suppression subsystems are SKC16, SKC19, and SKC20, and were removed from the scope of License Renewal. The following tables summarize the changes in components in the Yard. The sump pumps in the Fire Water Pump House and for the Fire Water Storage Tanks are not required by the NFPA 805 program and were removed from the scope of License Renewal.

Yard Components which had a Fire Barrier Function Added

ID	Description	Comments
	Safety-Related Cable Duct Banks and Access Hatches	Added Fire Barrier function. The concrete element already had a fire barrier function, therefore no LRA change was required.

Yard Suppression System Components Changes

ID	Description	Comments
SKC16	Startup XFMR (XMR01) Water Spray System	Remove all components downstream of valve KCV0464 from the scope of License Renewal
SKC19	ESF XFMR A (XNB01) Water Spray System	Remove all components downstream of valve KCV0463 from the scope of License Renewal
SKC20	ESF XFMR B (XNB02) Water Spray System	Remove all components downstream of valve KCV0463 from the scope of License Renewal

Yard Components Removed from the Scope of License Renewal

ID	Description	Comments
PKC1006	Fire Water Storage Tank Sump Pump	Related components removed from scope as appropriate.
PKC1008A, PKC1008B	Fire Water Pump House Sump Pumps	Related components removed from scope as appropriate.

ATTACHMENT 1
NFPA-805 Barrier Changes for License Renewal

Structural Barriers (Concrete Elements or Masonry Walls)					
Configuration	**NFPA-805 Functions**	**License Renewal Function (Note 1)**	**NFPA 805 Inspection/Monitoring**	**License Renewal Inspection/Monitoring**	**Notes**
Barrier Between Fire Areas	Rated Fire Barrier	Fire Barrier (Rated)	Existing Fire Protection Program	M26 Fire Protection and S6 Structures Monitoring	
Fire Area Exterior Barrier or Fire Modeling Credited Barrier	Non-Rated Fire Barrier	Shelter, Protection, Structural Support	Design Control / Periodic Inspection / Monitoring of Barrier	S6 Structures Monitoring (or S5 Masonry Walls)	6
Interior Barrier in Single Fire Area	None	None	None	None	2
Structural Barrier Features (Note 4)					
Configuration	**NFPA-805 Functions**	**License Renewal Function (Note 1)**	**NFPA 805 Inspection/Monitoring**	**License Renewal Inspection/Monitoring**	**Notes**
Feature Between Fire Areas	Rated Fire Feature	Fire Barrier (Rated)	Existing Fire Protection Program	M26 Fire Protection	
Feature in Fire Area Exterior Barrier or Fire Modeling Credited Barrier	No Specific Function (treated as part of the overall barrier)	Shelter, Protection, Structural Support	Addressed by overall non-rated fire barrier program.	S6 Structures Monitoring	3
Door/Seal in Interior Wall in Single Fire Area	None	None	None	None	3

Mechanical Barrier Features (Dampers)					
Configuration	**NFPA-805 Functions**	**License Renewal Function (Note 1)**	**NFPA 805 Inspection/Monitoring**	**License Renewal Inspection/Monitoring**	**Notes**
Feature Between Fire Areas	Rated Fire Feature	Fire Barrier (Rated)	Existing Fire Protection Program	M26 Fire Protection	
Feature in Fire Area Exterior Barrier or Fire Modeling Credited Barrier	No Specific Function (treated as part of the overall barrier)	Pressure Boundary	Addressed by overall non-rated fire barrier program.	M38 Inspection of Internal Surfaces in Miscellaneous Piping and Ducting	5
Damper/Seal in Interior Wall in Single Fire Area	None	None	None	None	5

Notes:

1. License renewal defines a fire barrier intended function as “provides rated fire barrier to confine or retard a fire from spreading to or from adjacent areas in the plant”
2. Interior barriers in single fire areas that do not have a fire rated function would require evaluation to determine if a license renewal intended function other than fire barrier (such as structural support or flood barrier) would apply.
3. Structural Fire Barrier Features that do not have a fire rated barrier function would require evaluation to determine if a license renewal intended function other than fire barrier (such as shelter/protection or structural support) would apply.
4. Structural barrier features include: fire barrier doors, fire barrier penetration seals and fire barrier coatings/wraps.
5. Mechanical Fire Barrier Features that do not have a fire rated barrier function would require evaluation to determine if a license renewal intended function other than fire barrier (such as pressure boundary) would apply.
6. Non-Rated Fire Barriers in a Fire Area Exterior Barrier or Fire Modeling Credited Barrier would require evaluation to determine if other license renewal intended functions would apply.

Amendment 33, LRA Changes

Enclosure 2 Summary Table

Affected LRA Section	LRA As-Submitted Page Number(s)
Table 2.2-1	2.2-6 through 2.2-8
Section 2.3.3.8	2.3-40 and 2.3-41
Table 2.3.3-8	2.3-42
Section 2.4.7	2.4-18 and 2.4-19
Section 3.3.2.1.8	3.3-11 and 3.3-12
Table 3.3.2-8	3.3-113 through 3.3-115

Callaway Plant
License Renewal Application
Amendment 33

Changes made to add nitrogen storage tanks foundation and pipe trenches to the scope of license renewal to support compressed air system component additions required for NFPA 805.

Table 2.2-1 (Pages 2.2-6 through 2.2-8) is revised as follows (new text shown underlined and deleted text shown in strikethrough):

Table 2.2-1 Callaway Plant Scoping Results

System/Structure	In-Scope	Section 2 Scoping and Screening Results
In-Scope Tank Foundations and Structures includes: Fire Water Storage Tanks Concrete Foundations Refueling Water Storage Tank Foundation and Valve House Condensate Storage Tank Foundation and Building Closure Nitrogen Storage Tank Foundation and Pipe Trench	Yes	2.4.7
Miscellaneous Out-of-Scope Structures includes: Auxiliary Oil Transfer Callaway Multipurpose Building Carbon Dioxide CO2 Storage Central Processing Facility Circulating Water Cooling Tower Cooling Water Chemical Control Demineralized Potable Water Building Demineralized Water Storage Tank Foundation Emergency Operations Facility Equalization Basin Fire Brigade Training Station Fitness for Duty Building Fuel Oil Storage Tank Foundation and Dike Gas Cylinder Storage Health Physics Calibration Facility Hydrogen Storage Intake Structure LCD Radwaste Storage Tank Foundation Lube Oil Storage Building Main Entrance Maintenance Shop Annex (Fab Shop) Maintenance Storage Facility Maintenance Training Annex ~~Nitrogen Storage~~	No	N/A

Table 2.2-1 Callaway Plant Scoping Results (Continued)

System/Structure	In-Scope	Section 2 Scoping and Screening Results
OCA Access Facility OCA Access Booth Oily Waste Treatment Area Outage Maintenance Facility Oxygen Storage Parking for Training Center Plant Support Facility Quality Control Building Reactor Makeup Water Storage Tank Foundation Remote Multiplex Unit A.B.C Secondary Access Facility Service Building Sewage Lift Station Site Cathodic Protection Anode Bed Site Switchgear Building Sludge Pump Station Solvent Storage Spare Main Transformer Steam Generator Storage Facility Stores I Building Stores II Building Switchyard Concrete Foundations Technical Training Facility/Callaway Learning Center Technical Support Center Training Center Vendor Liaison Building Vendor Offices Watchman Gatehouse Water Treatment Control Building Water Treatment Plant Water Treatment Plant Clearwell Well number 1 Well number 3 XMB01 Excitation Transformer		

Callaway Plant
License Renewal Application
Amendment 33

NFPA 805 changes made to identify that portions of the compressed air system are also within the scope of license renewal to support fire protection requirements based on the criteria of 10CFR54.4(a)(3). Specifically the backup supply of nitrogen gas for the auxiliary feedwater control valves and main steam atmospheric relief valves are also credited for fire protection.

Section 2.3.3.8 and Table 2.3.3-8 (Pages 2.3-40 through 2.3-42) are revised as follows (new text shown underlined):

2.3.3.8 Compressed Air System

System Description

The purpose of the compressed air system is to provide compressed air to the instrument air, service air, breathing air, and containment systems.

The compressed air system consists of the compressed air system, service gas system, and breathing air system.

Compressed air system

The purpose of the compressed air system is to provide a continuous supply of filtered, dry, and oil-free air for instrument and control operations. The system also provides station air at service outlets throughout the plant for operation of pneumatic tools and other service requirements. The compressed air system provides a reliable backup supply of nitrogen gas for the main feedwater control valves. The compressed air system also provides a safety-related backup supply of nitrogen gas for the auxiliary feedwater control valves and the main steam atmospheric relief valves.

The portion of the compressed air system within the scope of license renewal consists of accumulators for the main feedwater control valves, auxiliary feedwater control valves, and the main steam atmospheric relief valves to store nitrogen gas for use in the event there is a loss of operation of instrument air. The in-scope portion of the compressed air system also consists of instrument air and service gas containment penetration piping and associated isolation valves, components associated with air seals for the containment personnel airlock, and nonsafety piping and valves attached to safety-related components.

Service gas system

The purpose of the service gas system is to provide nitrogen, hydrogen, carbon dioxide, oxygen, and laboratory gases to plant systems, as required.

The portion of the service gas system within the scope of license renewal consists of nonsafety-related piping and valves attached to safety-related components and a backup supply of

nitrogen gas from the outdoor nitrogen storage tanks is provided for the auxiliary feedwater control valves and main steam atmospheric relief valves.

Breathing air system

The purpose of the breathing air system is to provide a dedicated source of respiratory air for use during maintenance operations within, and during abnormal entry into, areas having high or potentially high concentrations of airborne radioactive contaminants.

The portion of the breathing air system within the scope of license renewal consists of piping, containment isolation valves and the attached nonsafety-related piping and valves located in the reactor building and the auxiliary building.

The safety-related portions of the compressed air systems include the containment penetrations and their isolation valves, components associated with air seals for the containment personnel airlock, and components associated with the backup nitrogen gas supply for the auxiliary feedwater control valves and the main steam atmospheric relief valves.

System Intended Functions

Portions of the compressed air systems provide containment isolation for instrument air, service air, and breathing air penetrations. Portions of the compressed air systems provide air for the seals for the containment personnel airlock doors to support containment integrity. Portions of the compressed air system provide a backup supply of nitrogen gas for operation of the auxiliary feedwater control valves and the main steam atmospheric relief valves to provide capability to shutdown the reactor and maintain it in a safe shutdown condition. Therefore, the compressed air systems are within the scope of license renewal based on the criteria of 10 CFR 54.4(a)(1).

Portions of the compressed air systems are within the scope of license renewal as nonsafety-related affecting safety-related components based on the criterion of 10 CFR 54.4(a)(2) for spatial interaction and structural integrity.

Portions of the compressed air systems are within the scope of license renewal to support environmental qualification, fire protection, and station blackout requirements based upon the criteria of 10 CFR 54.4 (a)(3).

Callaway FSAR References

Additional details of the compressed air system are included in
FSAR Sections 9.3.1 SP, 9.3.5 SP, and 9.5.10 SP.

License Renewal Boundary Drawings

The license renewal boundary drawings for the compressed air system are listed below:
LR-CW-KA-M-22KA01
LR-CW-KA-M-22KA02
LR-CW-KA-M-22KA04
LR-CW-KA-M-22KA05
LR-CW-KA-M-22KB02
LR-CW-KB-M-22KB01

LR-CW-KH-M-22KH01
LR-CW-KH-X-89645

Component-Function Relationship Table

The component types subject to aging management review are indicated in Table 2.3.3-8 - *Compressed Air System*.

Table 2.3.3-8 Compressed Air System

Component Type	Intended Function
Closure Bolting	Pressure Boundary Structural Integrity (attached)
Flow Orifice	Structural Integrity (attached)
Heat Exchanger (Breathing Air Compressor)	Structural Integrity (attached)
Piping	Leakage Boundary (spatial) Pressure Boundary Structural Integrity (attached)
Rupture Disc	Pressure Boundary
Strainer	Structural Integrity (attached)
Tank	Pressure Boundary
Tubing	Pressure Boundary
Valve	Pressure Boundary Structural Integrity (attached)

The AMR results for these component types are provided in Table 3.3.2-8, *Auxiliary Systems – Summary of Aging Management Evaluation – Compressed Air System.*

Callaway Plant
License Renewal Application
Amendment 33

Changes made to add nitrogen storage tanks foundation and pipe trenches to the scope of license renewal to support compressed air system component additions required for NFPA 805.

Section 2.4.7 (Pages 2.4-18 and 2.4-19) is revised as follows (new text shown underlined):

2.4.7 In-Scope Tank Foundations and Structures

Structure Description

The purpose of the in-scope tank foundations is to provide support and shelter and protection to the seismic Category I safety-related refueling water storage tank (RWST) and valvehouse. The nonsafety-related condensate storage tank (CST), the CST trench, the nitrogen storage tank foundation and pipe trench, and the fire water storage tanks are also included.

The foundation for refueling water storage tank is a concrete mat founded on compacted fill and some lean concrete backfill under the interface of tank foundation and valvehouse. The RWST foundation scope includes the RWST slab foundation, and the RWST valvehouse. The ductbanks associated with the RWST valvehouse are evaluated separately with electrical foundations and structures in Section 2.4.8, *Electrical Foundations and Structures*. The condensate storage tank foundation is also concrete slab founded on compacted backfill. The CST foundation scope includes the CST slab foundation, the CST pipehouse, CST trench, and all associated structural components. The nitrogen storage tank foundation is a grade-level concrete slab, and the pipe trench is covered with grade-level precast concrete covers and steel access hatches. The fire water storage tanks are supported on reinforced concrete ring beams founded on compacted backfill. The tanks themselves are evaluated under their respective mechanical systems in Section 2.3, *Scoping and Screening Results: Mechanical Systems*.

The emergency diesel fuel oil storage tanks are evaluated under emergency diesel engine fuel oil storage and transfer system in Section 2.3.3.21, *Emergency Diesel Engine Fuel Oil Storage and Transfer System*. The access vaults to the emergency diesel fuel oil storage tanks are evaluated with the diesel generator building in Section 2.4.5, *Diesel Generator Building*.

Structure Intended Function

The in-scope tank foundations and structures provide structural support and shelter and protection for safety-related SSCs providing the capability to shutdown the reactor and maintain it in a safe shutdown condition. Therefore, the in-scope tank foundations and structures are within the scope of license renewal based on the criteria of 10 CFR 54.4(a)(1).

Portions of the in-scope tank foundations and structures provide structural support and shelter and protection for nonsafety-related SSCs whose failure could prevent performance of a safety-related function. Therefore, the in-scope tank foundations and structures are within the scope of license renewal based on the criterion of 10 CFR 54.4(a)(2).

Portions of the in-scope tank foundations and structures provide structural support and shelter and protection for SSCs that are within the scope of license renewal to support fire protection and station blackout requirements based upon criteria of 10 CFR 54.4(a)(3).

Callaway FSAR References

Additional details of the in-scope tank foundations and structures are included in FSAR Sections 1.2.2 SP, 2.2.1.2.3.2 SA, 3.8.4.1.5 SP, 3.8.5.1.5 SP, 8.3A.5.1 SP, and 10.4.9.1.2 SP.

Callaway Plant
License Renewal Application
Amendment 33

Materials, Environment, and Aging Management Program additions for NFPA 805 made to portions of the service gas subsystem that are credited by fire protection with providing the backup supply of nitrogen gas for the auxiliary feedwater control valves and main steam atmospheric relief valves.

Section 3.3.2.1.8 (Pages 3.3-11 and 3.3-12) is revised as follows (new text shown underlined):

3.3.2.1.8 Compressed Air System

Materials

The materials of construction for the compressed air system component types are:

- Carbon Steel
- Cast Iron (Gray Cast Iron)
- Copper Alloy
- Copper Alloy (>15% Zinc)
- Copper Alloy (Aluminum >8%)
- Stainless Steel

Environment

The compressed air system component types are exposed to the following environments:

- Atmosphere/Weather
- Borated Water Leakage
- Buried
- Condensation
- Dry Gas
- Plant Indoor Air
- Raw Water

Aging Effects Requiring Management

The following compressed air system aging effects require management:

- Loss of material
- Loss of material and cracking

- Loss of preload

Aging Management Programs

The following aging management programs manage the aging effects for the compressed air system component types:

- Bolting Integrity (B2.1.8)
- Boric Acid Corrosion (B2.1.4)
- Buried and Underground Piping and Tanks (B2.1.25)
- External Surfaces Monitoring of Mechanical Components (B2.1.21)
- Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components (B2.1.23)
- Selective Leaching (B2.1.19)

Callaway Plant
License Renewal Application
Amendment 33

NFPA 805 changes made to portions of the service gas subsystem that are credited by fire protection with providing the backup supply of nitrogen gas for the auxiliary feedwater control valves and main steam atmospheric relief valves.

Table 3.3.2-8 (Pages 3.3-113 through 3.3-115) is revised as follows (new text shown underlined):

Table 3.3.2-8 Auxiliary Systems - Summary of Aging Management Evaluation – Compressed Air System

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Item	Table 1 Item	Notes
Closure Bolting	PB	Carbon Steel	Atmosphere/ Weather (Ext)	Loss of material	Bolting Integrity (B2.1.8)	VII.I.AP-126	3.3.1.012	A
Closure Bolting	PB	Carbon Steel	Atmosphere/ Weather (Ext)	Loss of preload	Bolting Integrity (B2.1.8)	VII.I.AP-263	3.3.1.015	A
Piping	PB	Carbon Steel	Atmosphere/ Weather (Ext)	Loss of material	External Surfaces Monitoring of Mechanical Components (B2.1.21)	VII.I.A-78	3.3.1.078	A
Piping	PB	Carbon Steel	Buried (Ext)	Loss of material	Buried and Underground Piping and Tanks (B2.1.25)	VII.G.AP-198	3.3.1.106	A
Piping	PB	Copper Alloy (> 15% Zinc)	Atmosphere/ Weather (Ext)	Loss of material	External Surfaces Monitoring of Mechanical Components (B2.1.21)	VII.I.AP-159	3.3.1.081	A
Piping	PB	Copper Alloy (> 15% Zinc)	Dry Gas (Int)	None	None	VII.J.AP-9	3.3.1.114	A
Rupture Disc	PB	Copper Alloy (> 15% Zinc)	Atmosphere/ Weather (Ext)	Loss of material	External Surfaces Monitoring of Mechanical Components (B2.1.21)	VII.I.AP-159	3.3.1.081	A
Rupture Disc	PB	Copper Alloy (> 15% Zinc)	Dry Gas (Int)	None	None	VII.J.AP-9	3.3.1.114	A

Table 3.3.2-8 Auxiliary Systems - Summary of Aging Management Evaluation – Compressed Air System (continued)

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Item	Table 1 Item	Notes
Tank	PB	Carbon Steel	Atmosphere/ Weather (Ext)	Loss of material and cracking	External Surfaces Monitoring of Mechanical Components (B2.1.21)	VII.D.A-405	3.3.1.132	C
Valve	PB	Carbon Steel	Atmosphere/ Weather (Ext)	Loss of material	External Surfaces Monitoring of Mechanical Components (B2.1.21)	VII.I.A-78	3.3.1.078	A
Valve	PB	Copper Alloy (> 15% Zinc)	Atmosphere/ Weather (Ext)	Loss of material	External Surfaces Monitoring of Mechanical Components (B2.1.21)	VII.I.AP-159	3.3.1.081	A
Valve	PB	Copper Alloy (> 15% Zinc)	Dry Gas (Int)	None	None	VII.J.AP-9	3.3.1.114	A
Valve	PB	Copper Alloy (Aluminum > 8%)	Atmosphere/ Weather (Ext)	Loss of material	External Surfaces Monitoring of Mechanical Components (B2.1.21)	VII.I.AP-159	3.3.1.081	A
Valve	PB	Copper Alloy (Aluminum > 8%)	Dry Gas (Int)	None	None	VII.J.AP-9	3.3.1.114	A