Entergy

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Fred Dacimo
Vice President
License Renewal

March 12, 2008

Re: Indian Point Units 2 & 3
Docket Nos. 50-247 & 50-286

NL-08-051

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

SUBJECT: **Reply to Request for Additional Information Regarding License Renewal Application – Balance of Plant, Fire Protection, and Nickel Alloy**

Reference: NRC letter dated February 13, 2008; "Request for Additional Information for the Review of the Indian Point Nuclear Generating Unit Nos. 2 and 3, – Balance Of Plant, Fire Protection And Nickel Alloy"

Dear Sir or Madam:

Entergy Nuclear Operations, Inc is providing, in Attachment I, the additional information requested in the referenced letter pertaining to NRC review of the License Renewal Application for Indian Point 2 and Indian Point 3. The additional information provided in this transmittal addresses staff questions for Balance of Plant, Fire Protection, and Nickel Alloy.

There are no new commitments identified in this submittal. If you have any questions or require additional information, please contact Mr. R. Walpole, Manager, Licensing at (914) 734-6710.

I declare under penalty of perjury that the foregoing is true and correct. Executed on 3/12/08

Sincerely,

Fred R. Dacimo
Vice President
License Renewal

A128
NRR

Attachment:

1. Reply to NRC Request for Additional Information Regarding License Renewal Application – Balance of Plant, Fire Protection, and Nickel Alloy

cc: Mr. Bo M. Pham, NRC Environmental Project Manager
Ms. Kimberly Green, NRC Safety Project Manager
Mr. John P. Boska, NRC NRR Senior Project Manager
Mr. Samuel J. Collins, Regional Administrator, NRC Region I
Mr. Sherwin E. Turk, NRC Office of General Counsel, Special Counsel
IPEC NRC Senior Resident Inspectors Office
Mr. Paul D. Tonko, President, NYSERDA
Mr. Paul Eddy, New York State Dept. of Public Service

ATTACHMENT I TO NL-08-051

REPLY TO NRC REQUEST FOR ADDITIONAL INFORMATION

REGARDING

LICENSE RENEWAL APPLICATION

Balance of Plant, Fire Protection, and Nickel Alloy

ENTERGY NUCLEAR OPERATIONS, INC
INDIAN POINT NUCLEAR GENERATING UNIT NOS. 2 and 3
DOCKETS 50-247 and 50-286

INDIAN POINT NUCLEAR GENERATING UNIT NOS. 2 AND 3
LICENSE RENEWAL APPLICATION (LRA)
REQUESTS FOR ADDITIONAL INFORMATION (RAI)
BALANCE OF PLANT, FIRE PROTECTION, AND NICKEL ALLOY

The U.S. Nuclear Regulatory Commission (NRC or staff) has reviewed the information related to RCS and Structures provided by the applicant in the Indian Point Nuclear Generating Unit Nos. 2 and 3 (IP2 and IP3) LRA. The staff has identified that additional information is needed to complete the review as addressed below.

Balance of Plant

RAI 2.3A.2.2-1 Containment Spray

The aging management review (AMR) boundary for a system is typically highlighted on license renewal drawings. However, the license renewal drawings provided to the staff did not contain a depiction of (a)(2) boundaries or components. Section 2.3.2.2 of the license renewal application (LRA) states: "The containment spray system has no intended function for 10 CFR 54.4(a)(2)."

On Unit 2 license renewal drawing LRA-9321-2735 (containment spray system), the piping line #187, including valve 872D 3/4"-T58 was not highlighted, but it appears to be directly connected to safety-related spray piping. This piping is located downstream of the safety class boundary on the suction piping, 12"-SI-151R- #181, from the refueling water storage tank (RWST) to the containment spray pump at branch connection, 2"-SI-151R- #588, ending at valve 873B 2"-T58. Similarly, there is a non-highlighted mini-flow recirculation line from the pump. Piping downstream of the safety class boundary may not be required to perform the safety-related function, but may need to be included in scope under 10 CFR 54.4(a)(2).

Indicate whether portions of the above system(s) were evaluated for inclusion within the scope of license renewal in accordance with 10 CFR 54.4(a)(2). Identify all other instances, whereby a safety-related system, which has nonsafety-related components, was scoped in per 10 CFR 54.4(a)(1), but those nonsafety-related components were not identified as in scope for 10 CFR 54.4(a)(2).

Response for RAI 2.3A.2.2-1

The containment spray system (CSS) is in scope for 10 CFR 54.4(a)(1) and is shown primarily on drawing LRA-9321-2735. During the initial review of the CSS, piping line #187 and valve 872D 3/4"-T58 downstream of valve 873B as well as a ¾-inch mini-flow recirculation line downstream of valves 1806A and 1806B were not considered to be in scope based on the criterion of 10 CFR 54.4(a)(2). It has since been determined that the nonsafety-related CSS components listed above have an intended function to maintain integrity such that no physical interaction with safety-related components could prevent satisfactory accomplishment of a safety function. Therefore, this portion of the CSS system is in scope for 10 CFR 54.4(a)(2).

The 10 CFR 54.4(a)(2) scoping evaluation was reexamined and three instances were identified where a system that performs a safety function was in scope per 10 CFR 54.4(a)(1), but the nonsafety-related components were not identified as in scope for 10 CFR 54.4(a)(2). As a

result, the IP2 component cooling water system (CCW), IP3 building vent sampling system (BVS), and IP3 component cooling water system (CCW) also have an intended function to maintain integrity of nonsafety-related components such that no physical interaction with safety-related components could prevent satisfactory accomplishment of a safety function and will be included in scope for 10 CFR 54.4(a)(2). LRA revisions to include portions of these systems and the IP2 CSS in scope for 54.4(a)(2) are provided below. (added text underlined, strikethroughs deleted)

LRA Table 2.3.3-19-A-IP2, Miscellaneous Systems within the Scope of License Renewal for 10 CFR 54.4(a)(2), is revised to add the following line items.

System Number	System Name	LRA Section Describing System
CCW	Component Cooling Water	Section 2.3.3.3, Component Cooling Water
CSS	Containment Spray System	Section 2.3.2.2, Containment Spray System

LRA Table 2.3.3-19-A-IP3, Miscellaneous Systems within the Scope of License Renewal for 10 CFR 54.4(a)(2), is revised to add the following line items.

System Number	System Name	LRA Section Describing System
BVS	Building Vent Sampling	Section 2.3.2.5, Containment Penetrations
CCW	Component Cooling Water	Section 2.3.3.3, Component Cooling Water

LRA Section 2.3.3.19, Miscellaneous Systems in Scope for (a)(2), Components Subject to Aging Management Review, is revised as follows.

The following tables provide additional information concerning areas or components excluded.

IP3 System Code	Area or Components Excluded
~~BVS (Building Vent Sampling)~~	~~A review of the liquid-filled components that were not included in other aging management reviews identified that these components are located where they cannot affect equipment with safety functions.~~

The following IP2 systems were not reviewed for 54.4(a)(2) for spatial interaction because all of their passive mechanical components were already included because of (a)(1), (a)(3), or other (a)(2) functions.

- AFW (Auxiliary Feedwater)
- CCF (Containment Cooling and Filtration)
- ~~CCW (Component Cooling Water)~~
- CRD (Control Rod Drive)
- ~~CSS (Containment Spray System)~~
- EP (Electrical Penetrations)
- FCCH (Fuel and Core Component Handling)
- ICI (In-Core Instrumentation)
- IVSW (Isolation Valve Seal Water)
- RHR (Residual Heat Removal)

The following IP3 systems were not reviewed for 54.4(a)(2) for spatial interaction because all of their passive mechanical components were already included because of other (a)(1), (a)(3), or other (a)(2) functions.

- AFW (Auxiliary Feedwater)
- CBHV (Control Building HVAC)
- ~~CCW (Component Cooling Water)~~
- CRD (Control Rod Drive)
- CRHV (Control Room HVAC)
- ESS (Engineered Safeguards Initiation Logic)
- IVSW (Isolation Valve Seal Water)
- RHR (Residual Heat Removal)
- RPC (Reactor Protection and Control)
- SG (Steam Generator)
- SGLC (Steam Generator Level Control)
- SPG (Security Propane Generator)

LRA Section Table 2.3.3-19-B-IP2, 10 CFR 54.4(a)(2) Aging Management Review Tables, is revised to add the following line items.

Table 2.3.3-19-B-IP2
10 CFR 54.4(a)(2) Aging Management Review Tables

System Name	Series 2.3.3-19-xx-IP2 Table	Series 3.3.2-19-xx-IP2 Table
Component Cooling Water	Table 2.3.3-19-45-IP2	Table 3.3.2-19-45-IP2
Containment Spray System	Table 2.3.3-19-46-IP2	Table 3.3.2-19-46-IP2

LRA Section Table 2.3.3-19-B-IP3, 10 CFR 54.4(a)(2) Aging Management Review Tables, is revised to add the following line items.

Table 2.3.3-19-B-IP3
10 CFR 54.4(a)(2) Aging Management Review Tables

System Name	Series 2.3.3-19-xx-IP3 Table	Series 3.3.2-19-xx-IP3 Table
Building Vent Sampling	Table 2.3.3-19-63-IP3	Table 3.3.2-19-63-IP3
Component Cooling Water	Table 2.3.3-19-64-IP3	Table 3.3.2-19-64-IP3

The following tables are added to LRA Section 2.3.3-19 for IP2 and IP3.

Table 2.3.3-19-45-IP2
Component Cooling Water System
Nonsafety-Related Components Potentially Affecting Safety Functions
Subject to Aging Management Review

Component Type	Intended Function
Bolting	Pressure boundary
Heat exchanger (shell)	Pressure boundary
Piping	Pressure boundary
Thermowell	Pressure boundary
Valve body	Pressure boundary

Table 2.3.3-19-46-IP2
Containment Spray System
Nonsafety-Related Components Potentially Affecting Safety Functions
Subject to Aging Management Review

Component Type	Intended Function
Bolting	Pressure boundary
Flow indicator	Pressure boundary
Piping	Pressure boundary
Tubing	Pressure boundary
Valve body	Pressure boundary

Table 2.3.3-19-63-IP3
Building Vent Sampling System
Nonsafety-Related Components Potentially Affecting Safety Functions
Subject to Aging Management Review

Component Type	Intended Function
Bolting	Pressure boundary
Filter housing	Pressure boundary
Tubing	Pressure boundary
Valve body	Pressure boundary

Table 2.3.3-19-64-IP3
Component Cooling Water System
Nonsafety-Related Components Potentially Affecting Safety Functions
Subject to Aging Management Review

Component Type	Intended Function
Bolting	Pressure boundary
Flow element	Pressure boundary
Heat exchanger housing	Pressure boundary
Piping	Pressure boundary
Strainer housing	Pressure boundary
Valve body	Pressure boundary

LRA Section 3.3, Conclusion, is revised to add the following tables.

Table 3.3.2-19-45-IP2: Component Cooling Water System

Comp 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
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
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 3.3.2-19-45-IP2: Component Cooling Water System

Comp 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	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
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

Table 3.3.2-19-46-IP2: Containment Spray System

Comp Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Bolting	Pressure boundary	Stainless steel	Air-indoor (ext)	None	None	V.F-13 (EP-19)	3.2.1-57	C
Flow indicator	Pressure boundary	Stainless steel	Air-indoor (ext)	None	None	V.F-13 (EP-19)	3.2.1-57	A
Flow indicator	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water chemistry control – primary & secondary	V.A-27 (EP-41)	3.2.1-49	A
Piping	Pressure boundary	Stainless steel	Air-indoor (ext)	None	None	V.F-13 (EP-19)	3.2.1-57	A

Table 3.3.2-19-46-IP2: Containment Spray System

Comp 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 & secondary	V.A-27 (EP-41)	3.2.1-49	A
Tubing	Pressure boundary	Stainless steel	Air-indoor (ext)	None	None	V.F-13 (EP-19)	3.2.1-57	A
Tubing	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water chemistry control – primary & secondary	V.A-27 (EP-41)	3.2.1-49	A
Valve body	Pressure boundary	Stainless steel	Air-indoor (ext)	None	None	V.F-13 (EP-19)	3.2.1-57	A
Valve body	Pressure boundary	Stainless steel	Treated water (int)	Loss of material	Water chemistry control – primary & secondary	V.A-27 (EP-41)	3.2.1-49	A

Table 3.3.2-19-63-IP3: Building Vent Sampling System

Comp Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
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
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 3.3.2-19-63-IP3: Building Vent Sampling System

Comp 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 3.3.2-19-64-IP3: Component Cooling Water System

Comp 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
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	B
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	C
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	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
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 3.3.2-19-64-IP3: Component Cooling Water System								
Comp 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	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

RAI 2.3A.4.2-2 Auxiliary Feedwater

Section 2.3.4.3 of the license LRA states: "The AFW system has no intended function for 10 CFR 54.4(a)(2)."

The following components on safety-related system(s) are not highlighted, but may need to be considered for 10 CFR 54.4(a)(2):

- auxiliary feedwater pump bearing cooling line on license renewal drawing LRA-9321-2018-0 (Unit 2),
- chemical feed line to auxiliary feedwater between 3/4" -BFD-65-19 on license renewal drawing LRA-9321-2038-0 to 2-inch piping connected to BFD-1131 on license renewal drawing LRA-9321-2019-0 (typical) (Unit 2),
- piping and associated valve SS-189 off of the auxiliary feedwater supply header on license renewal drawing LRA-9321-20183-001 (at location D-7) (Unit 3).

Indicate whether portions of the above system(s) were evaluated for inclusion within the scope of license renewal in accordance with 10 CFR 54.4(a)(2). It is noted that in D-RAI 2.3A.2.2-1, above, the extent of condition has been requested.

Response for RAI 2.3A.4.2-2

The auxiliary feedwater pump bearing cooling piping and valves shown on license renewal drawing LRA-9321-2018-0 are assigned to the city water system (CYW) and subject to aging management review based on the criterion of 10 CFR 54.4(a)(2). The component types are reviewed in LRA Table 3.3.2-19-7-IP2.

Valves BFD-65-5, BFD-65-7, BFD-65-17, and BFD-65-19 are shown as hidden (dashed lines) on drawing LRA-9321-2038-0 and therefore not highlighted, but are highlighted at coordinates B-1, B-3, B-6 and B-4 respectively on drawing LRA-9321-2019. These components are in

scope and subject to aging management review based on the criterion of 10 CFR 54.4(a)(1) as part of the AFW system. Likewise, valves BFD-1131, BFD-1133, BFD-1135, and BFD-1137 are highlighted on LRA-9321-2019-0 at coordinates B-1, B-3, B-6, and B-4 respectively. The piping connected to these valves is shown on LRA-9321-2038 (coordinates C-4/5) and assigned to the chemical feed system (CF). The CF system is in scope for 10 CFR 54.4(a)(2) with component types reviewed in LRA Table 3.3.2-19-3-IP2.

Piping and associated valve SS-189 from the auxiliary feedwater supply header on license renewal drawing LRA-9321-20183-001 at location D-7 are assigned to the secondary plant sampling system (SS) and in scope and subject to aging management review based on the criterion of 10 CFR 54.4(a)(2). The component types are reviewed in LRA Table 3.3.2-19-55-IP3.

RAI 2.2B-2

Nonsafety-related SSCs directly connected to safety-related SSCs must be structurally sound in order to maintain the pressure boundary integrity of safety class piping. The nonsafety-related piping and supports up to and including the first seismic anchor beyond the safety/nonsafety interface may need to be in-scope in order to assure that the safety-related portion of the piping will be able to perform its intended function.

In the (a)(2) scoping document and LRA Table 2.2-2-IP3, the hydrogen gas system was labeled not in-scope. This system, along with the nitrogen system, has the function to provide the volume control tank (VCT) with gas for oxygen scavenging. Since the piping is directly connected to the VCT, the applicant should consider including the system in-scope for (a)(2) for potential physical interaction between the nonsafety and safety-related equipment.

Evaluate placing the hydrogen system and/or nitrogen system in-scope for (a)(2) and evaluate any other interfaces of gas system interaction with safety-related equipment.

Response for RAI 2.2B-2

The IP3 VCT, shown on drawing LRA-9321-27363, is in scope and subject to aging management review based on the criterion of 10 CFR 54.4(a)(1). The nitrogen system piping and valve components upstream of check valve 270 are in scope and subject to aging management review based on the criterion of 10 CFR 54.4(a)(2) with component types evaluated in LRA Table 3.3.2-19-37-IP3. In addition, the piping and valves connected to check valve 270 have an intended function to maintain integrity such that no physical interaction with safety-related components could prevent satisfactory accomplishment of a safety function due to structural support. Therefore, the H2 system should be in scope for 10 CFR 54.4(a)(2). LRA revisions to include the H2 system are as follows (added text underlined, strikethroughs deleted).

LRA Table 2.2.1a-IP3, Mechanical Systems within the Scope of License Renewal, is revised to add the following line item.

System Code	Unit 2 System Name	LRA Section Describing System
H2	Hydrogen	Section 2.3.3.19, Miscellaneous Systems in Scope for (a)(2)

LRA Table 2.2-2-IP3, Mechanical Systems Not Within the Scope of License Renewal, is revised to remove the following line items.

System Code	Unit 2 System Name	UFSAR Reference
~~H2~~	~~Hydrogen~~	~~Sections 10.2.2 and 11.1~~

LRA Table 2.3.3-19-A-IP3, Miscellaneous Systems within the Scope of License Renewal for 10 CFR 54.4(a)(2), is revised to add the following line item.

System Number	System Name	LRA Section Describing System
H2	Hydrogen	Section 2.3.3.19, Miscellaneous Systems in Scope for (a)(2)

LRA Section 2.3.3.19, Miscellaneous Systems in Scope for (a)(2), System Description, is revised to add the following IP3 system description for hydrogen.

Unit 3

Hydrogen

The purpose of the H2 system is to provide hydrogen to the main generator for cooling and to the CVCS for volume control tank cover gas. For the CVCS, cylinders of hydrogen supply the hydrogen manifold which in turn supplies the volume control tank. The system includes the piping and valves from the hydrogen cylinders to the CVCS. The system includes no safety-related components.

LRA Section Table 2.3.3-19-B-IP3, 10 CFR 54.4(a)(2) Aging Management Review Tables, is revised to add the following line items.

Table 2.3.3-19-B-IP3
10 CFR 54.4(a)(2) Aging Management Review Tables

System Name	Series 2.3.3-19-xx-IP3 Table	Series 3.3.2-19-xx-IP3 Table
Hydrogen	Table 2.3.3-19-65-IP3	Table 3.3.2-19-65-IP3

The following table is added to Section 2.3.3-19 for IP3.

Table 2.3.3-19-65-IP3
Hydrogen System
Nonsafety-Related Components Potentially Affecting Safety Functions
Subject to Aging Management Review

Component Type	Intended Function
Bolting	Pressure boundary
Piping	Pressure boundary
Valve body	Pressure boundary

LRA Section 3.3, Conclusion, is revised to add the following table.

Table 3.3.2-19-65-IP3: Hydrogen System

Comp 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

Table 3.3.2-19-65-IP3: Hydrogen System								
Comp Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
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	Gas (int)	None	None	VII.J-19 (AP-22)	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

No additional changes are required due to other gas system interaction with safety-related equipment.

RAI 2.3.0-2

Several LRA drawings identify various components as "Not A Long Lived Component," i.e., the component is not subject to an aging management review (AMR).

- Drawing LRA-9321-2720 and LRA-9321-27203 for Unit 2 and Unit 3, respectively, show several components for the component cooling water system to the reactor coolant pumps 21, 22, 23, and 24.
- Drawing LRA-9321-2028 and LRA-9321-20283 show the pump for the Unit 2 and Unit 3 emergency diesel generator (EDG) water jacket cooling system.

In NUREG-1800, Rev. 1, Section 2.1.3.2.2 describes long-lived structures and components as those that are not subject to periodic replacement based on a qualified life or specified time period. Furthermore, it states that replacement programs may be based on vendor recommendations, plant experience, or any means that establishes a specific replacement frequency under a controlled program.

Other license renewal applications typically have not designated pumps, motors, and heat exchangers as "not long lived," i.e., these components, or portions thereof, are subject to an AMR.

a) Identify the component types serviced by the component cooling water system indicated in the above mentioned drawings that are shown as not long lived.

b) Provide a basis for designating these components as "not long lived" to include details on how the "qualified life" of the components was established and describe the program under which aging management activities for the components are performed, and any available plant-specific operating experience confirming the effectiveness of management activities.

Response for RAI 2.3.0-2

The components shown on drawings LRA-9321-2720/27203 identified as not long-lived are the reactor coolant pump (RCP) motor upper and lower bearing heat exchangers. Upon further review of the documentation that specified the RCP motor upper and lower bearing heat exchangers were short-lived, it was determined that these components are actually only inspected and rebuilt as required but not replaced. Therefore, these components are subject to aging management review and the LRA is revised as follows (added text underlined).

LRA Section 3.3.2.1.3, Component Cooling Water, Environment, is revised as follows.

> Component cooling water system components are exposed to the following environments.
>
> - air – indoor
> - condensation
> - <u>lube oil</u>
> - raw water
> - treated borated water
> - treated borated water > 140°F
> - treated water
> - treated water > 140°F

LRA Section 3.3.2.1.3, Component Cooling Water, Aging Management Programs, is revised as follows.

> 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
- Oil Analysis
- Selective Leaching
- Service Water Integrity
- Water Chemistry Control – Closed Cooling Water
- Water Chemistry Control – Primary and Secondary

LRA Table 3.3.2-3-IP2, Component Cooling Water, is revised to add the following line items.

Table 3.3.2-3-IP2: Component Cooling Water

Comp 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.I-8 (A-77)	3.3.1-58	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	A
Heat exchanger (tubes)	Pressure boundary	Copper alloy	Lube oil (ext)	Loss of material	Oil Analysis Program	VII.C2-5 (AP-47)	3.3.1-26	D
Heat exchanger (tubes)	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

LRA Table 3.3.2-3-IP3, Component Cooling Water, is revised to add the following line items.

Table 3.3.2-3-IP3: Component Cooling Water

Comp 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.I-8 (A-77)	3.3.1-58	A

Table 3.3.2-3-IP3: Component Cooling Water								
Comp 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	A
Heat exchanger (tubes)	Pressure boundary	Copper alloy	Lube oil (ext)	Loss of material	Oil Analysis Program	VII.C2-5 (AP-47)	3.3.1-26	D
Heat exchanger (tubes)	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

The components shown on drawings LRA-9321-2028/20283 identified as not long-lived are the emergency diesel generator (EDG) jacket cooling water flexible connections and pump casings. In accordance with vendor recommendations, EDG jacket cooling water flexible connections are replaced every eight years and pumps are replaced every sixteen years. Therefore, these components are not subject to aging management review. A review of plant-specific operating experience did not identify any instances of EDG jacket cooling water flexible connection or pump failures which confirms the effectiveness of the replacement activities.

Nonsafety-Related Components

LRA Sections 2.1.1.2 and 2.1.2.1.2 describe the specific details for applying the methodology for identifying nonsafety-related portions of systems with a potential for adversely affecting safety-related functions in accordance with 10 CFR 54.4(a)(2). LRA Section 2.1.2.1.3 states that license renewal drawings were prepared to indicate portions of systems that support system intended functions with the exception of those systems in-scope for 10 CFR 54.4(a)(2) for physical interactions.

Because nonsafety-related system portions meeting 10 CFR 54.4(a)(2) for physical interactions are not indicated on the license renewal drawings, further information is required by the staff to complete its review to confirm that the licensee has adequately identified components in-scope for (a)(2).

For each of the following license renewal drawings identified below, describe the specific portions of the system piping that are within the scope of license renewal for meeting 10 CFR 54.4(a)(2) for physical interactions, or justify their exclusion.

RAI 2.3A.3.1-1. Spent Fuel Pit Cooling System (Unit 2)

1. Drawing LRA-9321-2720 (sheet 2) - piping within the spent fuel storage building co-located with safety-related component cooling system piping in the spent fuel building between locations D1 and A3.

2. Drawing LRA-227781 - refueling water purification piping outside the spent fuel storage building co-located with safety-related piping outside the spent fuel building between locations D1 and H1 associated with the spent fuel demineralizers.

Response for RAI 2.3A.3.1-1

1. All piping, piping components, and piping elements in the spent fuel storage building shown on drawing LRA-9321-2720 between locations D1 and A3 are assigned to the spent fuel pit cooling system (SFPC) and are in scope and subject to aging management review based on the criterion of 10 CFR 54.4(a)(2). The component types are evaluated in LRA Table 3.3.2-19-35-IP2.

2. All piping, piping components, and piping elements outside the spent fuel storage building shown on drawing LRA-227781 between locations D1 and H1 are assigned to the spent fuel pit cooling system (SFPC) and are in scope and subject to aging management review based on the criterion of 10 CFR 54.4(a)(2). The component types are evaluated in LRA Table 3.3.2-19-35-IP2.

RAI 2.3B.3.1-2. Spent Fuel Pit Cooling System (Unit 3)

1. Drawing LRA-9321-27513 (sheet 2) - piping within the spent fuel storage building co-located with safety-related component cooling system piping in the spent fuel storage building between locations E1 and H6.

2. Drawing LRA-9321-27513 (sheet 2) - piping outside the spent fuel storage building co-located with safety-related safety injection system piping outside the spent fuel storage building at locations F6 and G6 associated with the spent fuel demineralizers.

Response for RAI 2.3B.3.1-2

1. All piping, piping components, and piping elements in the IP3 spent fuel storage building shown on drawing LRA-9321-27513-002 between locations E1 and H6 are assigned to the spent fuel pit and cooling system (SFPC) and are in scope and subject to aging management review based on the criterion of 10 CFR 54.4(a)(2). The component types are evaluated in LRA Table 3.3.2-19-49-IP3.

2. All piping, piping components, and piping elements outside the spent fuel storage building shown on drawing LRA-9321-27513-002 between locations F6 and G6 are assigned to the spent fuel pit and cooling system (SFPC) and are in scope and subject to aging management review based on the criterion of 10 CFR 54.4(a)(2). The component types are evaluated in LRA Table 3.3.2-19-49-IP3.

RAI 2.3A.3.2-1 Service Water System (Unit 2)

1. Drawing LRA-9321-2028 - 8-inch line #1502 city water to the three emergency diesel generator 40 gallon jacket water expansion tanks.

2. Drawing LRA-9321-2722 - instrument air compressor cooling water piping inside the control building that is co-located with the service water system piping between locations G1 and I6.

3. Drawing LRA-9321-2722 - 10-inch piping (at location B5) supplying service water to the main turbine lube oil coolers.

4. Drawing LRA-9321-2722 - 16-inch piping (at location A4) supplying service water to various conventional plant services.

5. Drawing LRA-9321-2722 - 8-inch piping (at location A3) between valves SWN-4 and SWN-5.

6. Drawing LRA-9321-2722 - 8-inch piping header # 472 between locations A2 to E2, downstream of valves SWN-591, SWN-593, SWN-595, SWN-597, and SWN-599.

7. Drawing LRA-9321-2722 - 6-inch piping header downstream of valves SWN-501, SWN-502, SWN-503, SWN-504, SWN-505, and SWN-506, including connecting piping to and near SWN-507 (at location F1).

8. Drawing LRA-209762 - 2-inch piping upstream of RCV-018 from waste condensate pump discharge via line #260 and #261, (at location H2) inside the Primary Auxiliary Building (PAB).

9. Drawing LRA-235117 - 2-inch line #12 inside the service water tunnel (at location C4).

10. Drawing LRA-235117 - 3/4-inch line #1578 from the blowdown tank room to radiation monitor R-49 (at location D4).

11. Drawing LRA-235117 - 3/4-inch line #1577 containing valves MW-594, MW-600, MW-596, together with 3/4-inch line #1577 from radiation monitors R-46 (at location B2) to R-49.

12. Drawing LRA-235117 - 1-inch line #1580 from radiation monitors R-46 to R-49 up to sump pump #25 (at location E4).

13. Drawing LRA-235122 - 1-inch and 3/4-inch line #1593 between radiation monitors R-47(at location B4), R-39 (at location D4), R-40 (at location B3), and R-48 (at location B2) and from location D2.

14. Drawing LRA-235122 - 3/4-inch line #1592 and 3/4-inch line #1611 from D2 to B1.

15. Drawing LRA-226037 - 2 lines to the Victoreen radiation monitor labeled purge water in, and purge water out including valves FCV-46-2 and FCV-46-3 (at locations D4 and E3, respectively).

16. Drawing LRA-226038 - sample line "B" to and from heat exchanger HTX-49-1 from location A4 to C4.

17. Drawing LRA-226038 - purge water out line "D" and purge water In line "E", and purge water out including valves FCV-49-2 and FCV-49-3 (at locations D4 and E3, respectively).

18. Drawing LRA-242687 - purge water out line "D" and purge water in line "E".

Response for RAI 2.3A.3.2-1

1. The 8-inch city water line #1502 and valve JW-5 shown at coordinates H-6 on drawing LRA-9320-2028 are also shown on at coordinates B-6 on drawing LRA-9321-2018. The piping and valve are in scope and subject to aging management review and evaluated in LRA Table 3.3.2-17-IP2, City Water.

2. All instrument air compressor cooling water piping, piping components, and piping elements inside the control building shown on drawing LRA-9321-2722 between locations G1 and I6 are assigned to the instrument air closed cooling system (IACC) and are in scope and subject to aging management review based on the criterion of 10 CFR 54.4(a)(2). The component types are evaluated in LRA Table 3.3.2-19-19-IP2.

3. The 10-inch piping shown on drawing LRA-9321-2722 at location B5 supplying service water to the main turbine lube oil coolers is assigned to the service water system (SW) and is in scope and subject to aging management review based on the criterion of 10 CFR 54.4(a)(2). The component types are evaluated in LRA Table 3.3.2-19-39-IP2.

4. The 16-inch piping shown on drawing LRA-9321-2722 at location A4 supplying service water to various conventional plant services is assigned to the service water system (SW) and is in scope and subject to aging management review based on the criterion of 10 CFR 54.4(a)(2). The component types are evaluated in LRA Table 3.3.2-19-39-IP2.

5. The 8-inch piping shown on drawing LRA-9321-2722 at location A3 between valves SWN-4 and SWN-5 is assigned to the service water system (SW) and subject to aging management review based on the criterion of 10 CFR 54.4(a)(2). The component types are evaluated in LRA Table 3.3.2-19-39-IP2.

6. The 8-inch piping header #472 shown on drawing LRA-9321-2722 between locations A2 to E2 downstream of valves SWN-591, SWN-593, SWN-595, SWN-597, and SWN-599 is assigned to the service water system (SW) and is in scope and subject to aging management review based on the criterion of 10 CFR 54.4(a)(2). The component types are evaluated in LRA Table 3.3.2-19-39-IP2.

7. The 6-inch piping header downstream of valves SWN-501, SWN-502, SWN-503, SWN-504, SWN-505, and SWN-506, including connecting piping to and near SWN-507 shown on drawing LRA-9321-2722 at location F1 is assigned to the service water system (SW) and is in scope and subject to aging management review based on the criterion of 10 CFR 54.4(a)(2). The component types are evaluated in LRA Table 3.3.2-19-39-IP2.

8. The 2-inch piping upstream of RCV-018 from waste condensate pump discharge via line #260 and #261 inside the Primary Auxiliary Building (PAB) shown on drawing LRA-209762 (H-2) and continued on LRA-9321-2719 (G-4) is assigned to the waste disposal system (WDS) and is in scope and subject to aging management review based on the criterion of 10 CFR 54.4(a)(2). The component types are evaluated in LRA Table 3.3.2-19-42-IP2.

9. The 2-inch piping line #12 inside the service water tunnel shown on drawing LRA-235117 (C-4) and continued on LRA-209762 (G-4) is assigned to the service water system (SW) and is in scope and subject to aging management review based on the criterion of 10 CFR 54.4(a)(1). The component types are evaluated in LRA Table 3.3.2-2-IP2.

10. The 3/4-inch line #1578 from the blowdown tank room to the radiation monitor R-49 shown on drawing LRA-235117 at location D4 is assigned to the service water system (SW) and is in scope and subject to aging management review based on the criterion of 10 CFR 54.4(a)(2). The component types are evaluated in LRA Table 3.3.2-19-39-IP2.

11. The 3/4-inch line #1577 containing valves MW-594, MW-600, MW-596, together with 3/4-inch line #1577 from radiation monitors R-46 to R-49 shown on drawing LRA-235117 at location B2 is assigned to the city water system (CYW) and is in scope and subject to aging management review based on the criterion of 10 CFR 54.4(a)(2). The component types are evaluated in LRA Table 3.3.2-19-7-IP2.

12. The 1-inch line #1580 from radiation monitors R-46 to R-49 up to sump pump #25 shown on drawing LRA-235117 at location E4 is assigned to the waste disposal system (WDS) and is in scope and subject to aging management review based on the criterion of 10 CFR 54.4(a)(2). The component types are evaluated in LRA Table 3.3.2-19-42-IP2.

13. The 1-inch and 3/4-inch line #1593 between radiation monitors R-47, R-39, R-40, and R-48 located at B4, D4, B3, and B2 respectively shown on drawing LRA-235122 is assigned to the radiation monitoring system (RMS) and is in scope and subject to aging management review based on the criterion of 10 CFR 54.4(a)(2). The component types are evaluated in LRA Table 3.3.2-19-31-IP2.

14. The 3/4-inch lines #1592 and #1611 from D2 to B1 shown on drawing LRA-235122 are assigned to the waste disposal system (WDS) and are in scope and subject to aging management review based on the criterion of 10 CFR 54.4(a)(2). The component types are evaluated in LRA Table 3.3.2-19-42-IP2.

15. The lines to the Victoreen radiation monitor labeled purge water in, and purge water out including valves FCV-46-2 and FCV-46-3 shown at locations D4 and E3, respectively on drawing LRA-226037 are assigned to the radiation monitoring system (RMS) and are in scope and subject to aging management review based on the criterion of 10 CFR 54.4(a)(2). The component types are evaluated in LRA Table 3.3.2-19-31-IP2.

16. Sample line "B" to and from heat exchanger HTX-49-1 from location A4 to C4 shown on drawing LRA-226038 is assigned to the steam generator blowdown system (SGBD) and is in scope and subject to aging management review based on the criterion of 10 CFR 54.4(a)(2). The component types are evaluated in LRA Table 3.3.2-19-36-IP2.

17. Purge line "D" and line "E" including valves FCV-49-2 and FCV-49-3 at locations D4 and E3 shown on drawing LRA-226038 are assigned to the steam generator blowdown system (SGBD) and are in scope and subject to aging management review based on the criterion of 10 CFR 54.4(a)(2). The component types are evaluated in LRA Table 3.3.2-19-36-IP2.

18. Purge line "D" shown on drawing LRA-242687 is assigned to the service water system (SW) and is in scope and subject to aging management review based on the criterion of 10 CFR 54.4(a)(2). The component types are evaluated in LRA Table 3.3.2-19-36-IP2. Purge line "E" shown on drawing LRA-242687 is assigned to the radiation monitoring system (RMS) and is in scope and subject to aging management review based on the criterion of 10 CFR 54.4(a)(2). The component types are evaluated in LRA Table 3.3.2-19-31-IP2.

RAI 2.3B.3.2-1. Service Water System (Unit 3)

1. Drawing LRA-9321-20283 - 3/4-inch line #1033 city water to the three emergency diesel generator 40 gallon jacket water expansion tanks.

2. Drawing LRA-9321-20333 - 10-inch and 16-inch lines originating at valves SWN-6 and SWN-7 (at location F4) and FCV-1111 and FCV-1112 (at location F4).

3. Drawing LRA-9321-20333 - piping associated with service water strainer blowdown valves SWN 64-1 (at location C2), SWN-64-2 (at location C3), SWN-64-3 (at location C4), SWN 64-4 (at location C5), SWN 64-5 (at location C6), and SWN 64-6 (at location C7) up to its anchor.

4. Drawing LRA-9321-20333 - 3-inch and 8-inch lines originating between valves SWN-4 and SWN-5 (at location D-5), in their entirety.

Response for RAI 2.3B.3.2-1

1. The 3/4-inch line #1033 city water to the three emergency diesel generator 40 gallon jacket water expansion tanks shown on drawing LRA-9321-20283 is assigned to the city water makeup system (CWM) and is in scope and subject to aging management review based on the criterion of 10 CFR 54.4(a)(2). The component types are evaluated in LRA Table 3.3.2-19-13-IP3.

2. The 10-inch and 16-inch lines originating at valves SWN-6 and SWN-7 and FCV-1111 and FCV-1112 shown on drawing LRA-9321-20333 at location F-4 are assigned to the service water system (SWS) and are in scope and subject to aging management review based on the criterion of 10 CFR 54.4(a)(2). The component types are evaluated in LRA Table 3.3.2-19-56-IP3.

3. The piping and valves associated with service water strainer blowdown valves SWN 64-1, SWN-64-2, SWN-64-3, SWN 64-4, SWN 64-5, and SWN 64-6 as shown on drawing LRA-9321-20333 are assigned to the service water system (SWS) and are in scope and subject to aging management review based on the criterion of 10 CFR 54.4(a)(2). The component types are evaluated in LRA Table 3.3.2-19-56-IP3.

4. The 3-inch and 8-inch lines originating between valves SWN-4 and SWN-5, in their entirety, shown on drawing LRA-9321-20333 are assigned to the service water system (SWS) and are in scope and subject to aging management review based on the criterion of 10 CFR 54.4(a)(2). The component types are evaluated in LRA Table 3.3.2-19-56-IP3.

RAI 2.3A.3.3-1 Component Cooling Water System (Unit 2)

Drawing LRA-9321-2730 - lines surrounding component cooling supply to #21 and #22 waste gas compressors.

Response for RAI 2.3A.3.3-1

The lines surrounding the component cooling supply to #21 and #22 waste gas compressors as shown on LRA-9321-2730 at coordinates B-4 and B-6 are assigned to the waste disposal system (WDS) and are in scope and subject to aging management review based on the criterion of 10 CFR 54.4(a)(2). The component types are evaluated in LRA Table 3.3.2-19-42-IP2.

RAI 2.3B.3.3-1 Component Cooling Water System (Unit 3)

Drawing LRA-9321-27303 - lines surrounding component cooling supply to #31 and #32 waste gas compressors.

Response for RAI 2.3B.3.3-1

The lines surrounding the component cooling supply to #31 and #32 waste gas compressors as shown on LRA-9321-27303 at coordinates D-7 and F-7 are assigned to the gaseous waste disposal system (GWD) and are in scope and subject to aging management review based on the criterion of 10 CFR 54.4(a)(2). The component types are evaluated in LRA Table 3.3.2-19-25-IP3.

RAI 2.3A.3.5-1 Gas System (Unit 2)

Drawing LRA-9321-2723-0 – line 1"-CH-151R-LINE#115 that is directly connected to the volume control tank.

Response for RAI 2.3A.3.5-1

Line 1"-CH-151R-LINE#115 directly connected to the volume control tank as shown on LRA-9321-2723 at coordinate B-6 is assigned to the gas system (GAS) and is in scope and subject to aging management review based on the criterion of 10 CFR 54.4(a)(2). The component types are evaluated in LRA Table 3.3.2-19-14-IP2.

RAI 2.3A.3.18-1 Plant Drains System - Waste Disposal System (Unit 2)

Drawing LRA-9321-2719 - containment penetrations Y and Z outside of the safety-related boundary that is structurally attached to the containment penetration piping both inside and outside containment at locations C1 and C2, respectively.

Response for RAI 2.3A.3.18-1
Piping, piping components, and piping elements connected to containment penetrations Y and Z outside of the safety-related boundary connected to the containment penetration piping both inside and outside containment as shown on drawing LRA-9321-2719 at locations C1 and C2 are conservatively assumed to be fluid-filled. These components are assigned to the waste disposal system (WDS) and are in scope and subject to aging management review based on the criterion of 10 CFR 54.4(a)(2). The component types are evaluated in LRA Table 3.3.2-19-42-IP2.

RAI 2.3B.3.18-1 Plant Drains System - Liquid Waste Disposal System (Unit 3)

Drawing LRA-9321-27193 (sheet 1) - containment penetrations Y and Z outside of the safety-related boundary that is structurally attached to the containment penetration piping both inside and outside containment (at locations C3 and D3, respectively).

Response for RAI 2.3B.3.18-1
Piping, piping components, and piping elements connected to containment penetrations Y and Z outside of the safety-related boundary that is structurally attached to the containment penetration piping both inside and outside containment as shown on drawing LRA-9321-27193-001 at locations C3 and D3 are conservatively assumed to be fluid-filled. These components are assigned to the liquid waste disposal system (LWD) and are in scope and subject to aging management review based on the criterion of 10 CFR 54.4(a)(2). The component types are evaluated in LRA Table 3.3.2-19-33-IP3.

RAI 2.3A.3.13-1 Fuel Oil System (Unit 2)

1. Drawing LRA-9321-2030 - 3/4-inch line from 21 diesel generator fuel oil drip tank drain pump 21 and associated valves structurally attached to fuel oil day tank No. 21 between locations G2 and G4.

2. Drawing LRA-9321-2030 - 3/4-inch line from 22 diesel generator fuel oil drip tank drain pump 22 and associated valves structurally attached to fuel oil day tank no. 22 between locations D2 and D4.

3. Drawing LRA-9321-2030 - 3/4-inch line from 23 diesel generator fuel oil drip tank drain pump 23 and associated valves structurally attached to fuel oil day tank no. 23 between locations B2 and B4.

Response for RAI 2.3A.3.13-1

The 3/4-inch lines from 21, 22, and 23 diesel generator fuel oil drip tank drain pumps and associated valves to fuel oil day tank No. 21, 22, and 23 shown on drawing LRA-9321-2030 are assigned to the emergency diesel generator system (EDG) and are in scope and subject to aging management review based on the criterion of 10 CFR 54.4(a)(2). The component types are evaluated in LRA Table 3.3.2-19-9-IP2.

RAI 2.3B.3.13-1 Fuel Oil System (Unit 3)

1. Drawing LRA-9321-20303 - 3/4-inch line # 1103 near 31 diesel generator fuel oil drip tank drain pump 31 discharge and associated valves structurally attached to fuel oil day tank no. 31 between locations B4 and E3.

2. Drawing LRA-9321-20303 - 3/4-inch line # 1106 near diesel generator fuel oil drip tank drain pump 32 discharge and associated valves structurally attached to fuel oil day tank no. 32 between locations B6 and E5.

3. Drawing LRA-9321-20303 - 3/4-inch line # 1106 near diesel generator fuel oil drip tank drain pump 33 discharge and associated valves structurally attached to fuel oil day tank no. 33 between locations B7 and E7.

Response for RAI 2.3B.3.13-1

The 3/4-inch lines from 31, 32, and 33 diesel generator fuel oil drip tank drain pumps and associated valves to fuel oil day tank No. 31, 32, and 33 shown on drawing LRA-9321-20303 are assigned to the emergency generator system (EG) and are in scope and subject to aging management review based on the criterion of 10 CFR 54.4(a)(2). The component types are evaluated in LRA Table 3.3.2-19-17-IP3.

RAI 2.3A.3.14-2 Emergency Diesel Generators (Unit 2)

Drawing LRA-9321-2028 - 3/4-inch line from city water system (for makeup) structurally attached to 21, 22, and 23 jacket water expansion tanks, including valves and LCV-5004, LCV-5005, and LCV-5006, located between B5/6 and H5/6 and in the EDG room.

Response for RAI 2.3A.3.14-2

The 3/4-inch piping and associated valves structurally attached to 21, 22, and 23 jacket water expansion tanks are assigned to the emergency diesel generator system (EDG) and are in scope and subject to aging management review based on the criterion of 10 CFR 54.4(a)(2). The component types are evaluated in LRA Table 3.3.2-19-9-IP2. Valves LCV-5004, LCV-5005, and LCV-5006 are in scope and subject to aging management review based on the criterion of 10 CFR 54.4(a)(1) and evaluated in LRA Table 3.3.2-14-IP2.

RAI 2.3B.3.14-2 Emergency Diesel Generators (Unit 3)

Drawing LRA-9321-20283 - 3/4-inch line #1033 from city water system (for makeup) structurally attached to 31 (3/4-inch line #1033), 32 (3/4-inch line #1034), and 33 (3/4-inch line #1035) jacket water expansion tanks, including valves and associated level control valves located between D2 and D7 and in the EDG room.

Response for RAI 2.3B.3.14-2

The 3/4-inch lines (#1033, #1034, #1035) supplying makeup water to each emergency diesel generator jacket water expansion tank shown on drawing LRA-9321-20283 are assigned to the city water makeup system (CWM) and are in scope and subject to aging management review based on the criterion of 10 CFR 54.4(a)(2). The component types are evaluated in LRA Table 3.3.2-19-13-IP3. The expansion tank level control valves are in scope and subject to aging management review based on the criterion of 10 CFR 54.4(a)(1) and evaluated in LRA Table 3.3.2-14-IP3.

Fire Protection

RAI 3.0.3.2.7-1

LRA Table 2.4-4 lists fire stops and fire wrap as bulk commodities that perform an intended function of fire barrier. LRA Table 3.5.2-4, "Bulk Commodities," identifies the material, environment and aging effect requiring aging management for these two commodities. The Fire Protection Program is identified as the aging management program along with Note J which indicates that neither the component nor the material and environment combination is evaluated in NUREG-1801. However, in LRA Section B.1.13, "Fire Protection," there is no indication that fire stops and fire wrap are included as commodities whose aging effects will be managed by the AMP. Describe how the aging effects of cracking/delamination, separation (for fire stops), and loss of material (for fire wrap) will be managed under the Fire Protection AMP.

Response for RAI 3.0.3.2.7-1

As stated in LRA Section B.1.13, the fire protection program is an existing program that includes fire barrier inspections. The commodities fire stops and fire wraps are considered to be fire barriers which are included in the scope of the Fire Protection Program. Fire stops (penetration seals) are visually inspected for cracking, delaminating, separation, and change in material properties at least once every seven operating cycles (15% every 24 months). Fire wraps are visually inspected at least once every 24 months for loss of material and any other indications of degradation or damage.

Nickel Alloy

RAI 3.0.3.3.5-1

The Nickel Alloy Inspection Program for the monitoring and trending program element states that records of the inspection program, examination and test procedures, examination/test data, and corrective actions taken or recommended are maintained in accordance with the requirements of ASME Section XI, Subsection IWA.

The Standard Review Plan for License Renewal (SRP-LR) Section A.1.2.3.5, and SRP-LR Table A.1-1 state that:

> Monitoring and trending activities should be described, and they should provide predictability of the extent of degradation and thus effect timely corrective or mitigative actions. Plant-specific and/or industry-wide operating experience may be considered in evaluating the appropriateness of the technique and frequency. This program element describes "how" the data collected are evaluated and may also include trending for a forward look. This includes an evaluation of the results against the acceptance criteria and a prediction regarding the rate of degradation in order to confirm that timing of the next scheduled inspection will occur before a loss of SC intended function. Although aging indicators may be quantitative or qualitative, aging indicators should be quantified, to the extent possible, to allow trending. The parameter or indicator trended should be described. The methodology for analyzing the inspection or test results against the acceptance criteria should be described. Trending is a comparison of the current monitoring results with previous monitoring results in order to make predictions for the future.

Please describe how the monitoring and trending program elements will be addressed in the Nickel Alloy Inspection Program.

Response for RAI 3.0.3.3.5-1

The Nickel Alloy Inspection Program manages the effects of aging on Alloy 600/82/182 components by utilizing elements of the Boric Acid Corrosion Control and ISI Programs.

Alloy 600/82/182 locations are documented with unique component identification numbers with applicable data maintained for monitoring and trending. Inspections are performed using industry guidance and site-specific operating experience and produce quantitative data through eddy current, ultrasonic, and visual inspections. Inspection findings are evaluated using previous inspection results through the corrective action program. If evidence of PWSCC is discovered, a repair is performed. Since unacceptable findings are repaired or replaced, use of past inspections to predict the extent of future degradation is not applicable.

The monitoring and trending element of the Nickel Alloy Inspection Program relies on the site corrective action program to assure timely corrective and mitigative actions.

RAI 3.0.3.3.5-2

LRA Table 3.1.1, Item 3.1.1-31 is applicable to NUREG-1801, Rev. 1, Items IV.A2-12, IV.A2-19, and IV.C2-13, which specify that an acceptable aging management program is to comply with applicable NRC Orders and provide a commitment in the FSAR supplement to implement applicable (1) Bulletins and Generic Letters and (2) staff-accepted industry guidelines.

The statement in the Nickel Alloy Inspection Program states that Indian Point will "continue to" implement commitments associated with (1) NRC Orders, Bulletins and Generic Letters associated with nickel alloys and (2) staff accepted industry guidelines.

The intent of this statement is unclear. Please clarify that the applicant commits to comply with applicable Bulletins, Generic Letters and staff-accepted industry guidelines.

Response for RAI 3.0.3.3.5-2

For clarification, IPEC commits to comply with future applicable (1) NRC Orders. In addition, IPEC commits to implement applicable (1) Bulletins and Generic Letters associated with nickel alloys and (2) staff accepted industry guidelines associated with nickel alloys.