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U.S. Nuclear Regulatory Commission
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Clinton Power Station, Unit 1
Facility Operating License No. NPF-62
NRC Docket No. 50-461

Subject: Supplement No. 3 - Changes to the Clinton Power Station, Unit 1, License Renewal Application

- References:
1. Letter from Christopher D. Wilson (Constellation Energy Generation, LLC) to U.S. NRC, "Application for Renewed Operating License," dated February 14, 2024 (ML24045A024)
 2. Letter from Christopher D. Wilson (Constellation Energy Generation, LLC) to U.S. NRC, "Supplement No. 1 – Changes to the Clinton Power Station, Unit 1, License Renewal Application," dated November 27, 2024 (ML24332A051)
 3. Letter from Christopher D. Wilson (Constellation Energy Generation, LLC) to U.S. NRC, "Supplement No. 2 – Changes to the Clinton Power Station, Unit 1, License Renewal Application," dated December 20, 2024 (ML24355A050)

In Reference 1, Constellation Energy Generation, LLC (CEG) submitted a License Renewal Application (LRA) for Clinton Power Station, Unit 1 (CPS). In References 2 and 3, CEG submitted Supplement Nos. 1 and 2, respectively to the LRA for CPS. The purpose of this letter is to provide Supplement No. 3 to the LRA for CPS. Supplement No. 3 includes three changes to the LRA which provide additional information and clarification to address NRC Safety Review Audit information needs and minor changes identified by CEG.

Enclosure A to this letter provides a description of each change, and corresponding mark-ups to affected portions of the LRA, thereby supplementing the CPS LRA.

There are no new regulatory commitments contained in this letter.

This submittal has been discussed with the NRC License Renewal Project Manager for the CPS License Renewal project.

Should you have any questions regarding this submittal, please contact Ms. Lydia S. Dworakowski, Licensing Lead, CPS License Renewal Project, by email at Lydia.Dworakowski@constellation.com.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 30th day of January 2025.

Respectfully,

Christopher D. Wilson
License Renewal Director
Constellation Energy Generation, LLC

Enclosure:

A. Changes to the Clinton Power Station, Unit 1, License Renewal Application

cc: NRC Regional Administrator, Region III
NRC Senior Resident Inspector - Clinton Power Station
NRC Project Manager (Safety Review), NRR-DNRL
NRC Project Manager (Environmental Review), NRR-DNRL
NRC Project Manager, NRR-DORL - Clinton Power Station
Illinois Emergency Management Agency – Division of Nuclear Safety

Enclosure A

Changes to the Clinton Power Station, Unit 1, License Renewal Application

Introduction

This enclosure contains three changes that are being made to the License Renewal Application (LRA) that were identified after submittal of the LRA. For each item, the change is described and the affected page number(s) and portion(s) of the LRA are provided. For clarity, entire sentences or paragraphs from the LRA are provided. Previously submitted information is shown in normal font. Additions due to this submittal are highlighted with ***bolded italics*** for inserted text, and ~~strikethroughs~~ for deleted text. Revisions to LRA tables are shown by providing excerpts from the affected tables.

Change #1 – Clarification of Further Evaluation Discussions in Aging Management of Structures and Component Supports

Affected LRA Sections: Section 3.5.2.2.1.9, Section 3.5.2.2.2.1, and Section 3.5.2.2.2.3

LRA Page Numbers: 3.5-26, 3.5-27, 3.5-29, 3.5-33, and 3.5-34

Description of Change:

The Further Evaluation discussions in LRA Section 3.5.2.2.2.1, Item 1 and Section 3.5.2.2.2.3, Item 1 are being revised to conclude that inconsequential loss of material and cracking due to freeze-thaw does not impact the intended functions of concrete structures.

Additionally, typographical errors in LRA Sections 3.5.2.2.1.9, 3.5.2.2.2.1, and 3.5.2.2.2.3 are being corrected to reference the applicable Appendix B Clinton Program number.

Accordingly, LRA Sections 3.5.2.2.1.9, 3.5.2.2.2.1 and 3.5.2.2.2.3 are revised.

LRA Section 3.5.2.2.1.9, Increase in Porosity and Permeability due to Leaching of Calcium Hydroxide and Carbonation, fourth paragraph on page 3.5-26, is revised as shown below.

3.5.2.2.1.9 Increase in Porosity and Permeability due to Leaching of Calcium Hydroxide and Carbonation

[Fourth Paragraph]

The ASME Section XI, Subsection IWL (B.2.1.30) program will manage the increase in porosity and permeability and loss of strength due to leaching of calcium hydroxide and carbonation for the inaccessible containment foundation. In addition, the containment foundation is a concrete basemat shared with the Auxiliary and Fuel Buildings, therefore the Structures Monitoring (B.2.1.34) program will inspect below-grade portions of the common foundation basemat if made accessible by excavation for any reason. The condition of accessible concrete associated with non-Primary Containment structures inspected in accordance with the Structures Monitoring program (B.2.1.354) provides reasonable assurance that degradation of inaccessible structural components will be detected before a loss of an intended function. In the event that unacceptable conditions due to this mechanism are identified in the accessible areas of non-Primary Containment structures, procedures require that extent of condition be determined, and additional inspections or evaluations would address inaccessible and below grade portions of any affected structure, therefore a plant-specific AMP is not required.

LRA Section 3.5.2.2.2.1, Aging Management of Inaccessible Areas, Item 1 response, fourth paragraph on page 3.5-27, and Item 2 response, fourth paragraph on page 3.5-29, are revised as shown below. This LRA markup includes changes submitted in Supplement 1, dated November 27, 2024, via Change #12 which revised the Further Evaluation discussion to clarify that the concrete degradation related to freeze-thaw cycles is inconsequential and is duplicated here as an aid to the reviewer.

3.5.2.2.2.1 Aging Management of Inaccessible Areas

1. *Loss of material (spalling, scaling) and cracking due to freeze-thaw could occur in below-grade inaccessible concrete areas of Groups 1-3, 5 and 7-9 structures. The GALL Report recommends further evaluation of this aging effect for inaccessible areas of these Groups of structures for plants located in moderate to severe weathering conditions.*

[Fourth Paragraph]

Structural reinforced concrete has exhibited inconsequential loss of material (spalling, scaling) and cracking due to freeze-thaw in accessible areas of in scope reinforced concrete structures. This operating experience provides objective evidence that the design and construction of external reinforced concrete has provided concrete with good freeze-thaw resistance. The Structures Monitoring (B.2.1.34) program includes inspection for loss of material and cracking due to freeze-thaw in the accessible areas. ***The inconsequential loss of material (spalling, scaling) and cracking due to freeze-thaw does not impact the intended functions of concrete structures.***

2. *Cracking due to expansion and reaction with aggregates could occur in below-grade inaccessible concrete areas for Groups 1-5 and 7-9 structures. The GALL Report recommends further evaluation of inaccessible areas of these Groups of structures if concrete was not constructed in accordance with the recommendations in the GALL Report.*

[Fourth Paragraph]

Clinton Power Station examines exposed portions of the below-grade concrete, when excavated for any reason, in accordance with the Structures Monitoring (B.2.1.354) program.

LRA Section 3.5.2.2.3, Aging Management of Inaccessible Areas for Group 6 Structures, Item 1 response, pages 3.5-33 and 3.5-34, is revised as shown below. This LRA markup includes changes submitted in Supplement 1, dated November 27, 2024, via Change #12 which revised the Further Evaluation discussion to clarify that the concrete degradation related to freeze-thaw cycles is inconsequential and is duplicated here as an aid to the reviewer.

3.5.2.2.3 Aging Management of Inaccessible Areas for Group 6 Structures

1. *Loss of material (spalling, scaling) and cracking due to freeze-thaw could occur in below-grade inaccessible concrete areas of Group 6 structures. The GALL Report recommends further evaluation of this aging effect for inaccessible areas for plants located in moderate to severe weathering conditions.*

Table 3.5.1 Item Number 3.5.1-49: This aging effect and mechanism, the loss of material (spalling, scaling) and cracking due to freeze-thaw, is applicable to reinforced concrete structures. This aging effect is applicable to both above and below grade reinforced concrete in air-outdoor and groundwater/soil environments. Clinton Power Station is located in a region where weathering conditions are considered severe as shown in ASTM C33, "Standard Specification for Concrete Aggregates." The RG 1.127, Inspection of Water-Control Structures Associated with Nuclear Power Plants (B.2.1.365) program will be used to manage loss of material (spalling, scaling) and cracking in both accessible and inaccessible areas of Group 6 structures. The Group 6 structures consist of the Screen House and Cooling Lake. The Cooling Lake structure that is in scope is submerged eight feet below the normal lake level and is not subject to freezing conditions. There are significant portions of the Screen House structure that are accessible to provide indications of reinforced concrete conditions in the inaccessible areas.

The original designs and construction of these structures conformed to ACI 318, "Building Code Requirements for Structural Concrete and Commentary," and ACI 301, "Specifications for Structural Concrete." The concrete mix design provides for low permeability, by incorporating fly ash and water reducing agents, and adequate air entrainment (3% plus or minus 1%) in the air-outdoor environment such that the concrete has good freeze-thaw resistance.

Structural reinforced concrete has exhibited inconsequential loss of material (spalling, scaling) and cracking due to freeze-thaw in accessible areas of in scope reinforced concrete structures. This operating experience provides objective evidence that the design and construction of external reinforced concrete at Clinton Power Station has provided concrete with good freeze-thaw resistance. The RG 1.127, Inspection of Water-Control Structures Associated with Nuclear Power Plants (B.2.1.365) program includes inspection for loss of material and cracking due to freeze-thaw in the accessible areas. ***The inconsequential loss of material (spalling, scaling) and cracking due to freeze-thaw does not impact the intended functions of concrete structures.***

In addition, Clinton Power Station examines exposed portions of the below-grade concrete, when excavated for any reason, in accordance with the Structures Monitoring (B.2.1.34) program.

The visual inspections of reinforced concrete identify concrete damage in accordance with the requirements of the RG 1.127, Inspection of Water-Control Structures Associated with Nuclear Power Plants (B.2.1.365) program. If unacceptable conditions due to freeze thaw are identified in the accessible areas of structures, the conditions are evaluated and depending upon the initial conditions and evaluation, corrective actions are developed that may include additional inspections to determine the extent of degraded conditions as part of the corrective action program.

If freeze thaw damage were to occur, it would occur at the surface of concrete with significant moisture levels and sudden drops in temperature to below freezing. In general, these areas are exposed at the ground surface and are accessible for inspection.

The condition of accessible and above grade concrete is used as an indicator for the condition of the inaccessible and below grade structural components and provides reasonable assurance that degradation of inaccessible structural components will be detected before a loss of an intended function.

As a result, the RG 1.127, Inspection of Water-Control Structures Associated with Nuclear Power Plants (B.2.1.365) program is expected to adequately manage the loss of material (spalling, scaling) and cracking due to freeze-thaw could occur in below grade inaccessible concrete areas of Group 6 structures. Therefore, a plant-specific AMP is not required to manage this aging effect.

Change #2 – Update AMR Tables to Include NUREG-1801 Items II.B3.2.CP-84 and III.A#.TP-28

Affected LRA Sections: Table 3.5.1, Table 3.5.2-1, Table 3.5.2-3, Table 3.5.2-5, Table 3.5.2-6, Table 3.5.2-8, Table 3.5.2-9, Table 3.5.2-10, Table 3.5.2-12, Table 3.5.2-13, Table 3.5.2-14, and Table 3.5.2-15

LRA Page Numbers: 3.5-47, 3.5-70, 3.5-85, 3.5-86, 3.5-105, 3.5-107, 3.5-114, 3.5-116, 3.5-119, 3.5-121, 3.5-128, 3.5-141, 3.5-143, 3.5-148, 3.5-150, 3.5-162, 3.5-163, 3.5-164, 3.5-168, 3.5-171, 3.5-173, 3.5-177, 3.5-178, and 3.5-179

Description of Changes:

LRA Table 3.5.1 Items 3.5.1-24 and 3.5.1-67 are associated with numerous NUREG-1801 items for management of increase in porosity and permeability; cracking; and loss of material (spalling, scaling) due to aggressive chemical attack. NUREG-1801 items, II.B3.2.CP-84, III.A1.TP-28, III.A3.TP-28, and III.A5.TP-28 are for accessible concrete areas which were not utilized in the Clinton LRA. For consistency with NUREG-1801, the applicable AMR tables are being revised to include these items.

Also, the Discussion in LRA Table 3.5.1 Items 3.5.1-24 and 3.5.1-67 is being revised for clarification.

Accordingly, LRA Tables 3.5.1, 3.5.2-1, 3.5.2-3, 3.5.2-5, 3.5.2-6, 3.5.2-8, 3.5.2-9, 3.5.2-10, 3.5.2-12, 3.5.2-13, 3.5.2-14, and 3.5.2-15 are revised.

LRA Table 3.5.1, Summary of Aging Management Evaluations for the Containments, Structures and Component Supports, pages 3.5-47 and 3.5-70 are revised as shown below:

Table 3.5.1 Summary of Aging Management Evaluations for the Containments, Structures and Component Supports					
Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.5.1-24	Concrete (inaccessible areas): dome; wall; basemat; ring girders; buttresses, Concrete (inaccessible areas): basemat, Concrete (accessible areas): dome; wall; basemat	Increase in porosity and permeability; cracking; loss of material (spalling, scaling) due to aggressive chemical attack	Chapter XI.S2, "ASME Section XI, Subsection IWL," or Chapter XI.S6, "Structures Monitoring"	No	Consistent with NUREG-1801. The ASME Section XI, Subsection IWL (B.2.1.30) program will be used to manage increase in porosity and permeability, cracking, loss of material (spalling, scaling) of the concrete (accessible) dome, wall, and basemat exposed to a the air-indoor, uncontrolled environment and concrete (inaccessible) basemat exposed to groundwater/soil environment in the Primary Containment. Increase in porosity and permeability, cracking, and loss of material due to aggressive chemical attack is not an aging mechanism likely to occur as the concrete is not exposed to acidic solutions with a pH < 5.5, chloride solutions > 500ppm, or sulfate solutions > 1500ppm.

Table 3.5.1 Summary of Aging Management Evaluations for the Containments, Structures and Component Supports					
Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.5.1-67	Groups 1-5, 7, 9: Concrete: interior; above-grade exterior, Groups 1-3, 5, 7-9 – concrete (inaccessible areas): below-grade exterior; foundation, Group 6: concrete (inaccessible areas): all	Increase in porosity and permeability; cracking; loss of material (spalling, scaling) due to aggressive chemical attack	Chapter XI.S6, "Structures Monitoring"	No	<p>Consistent with NUREG-1801.</p> <p>The Structures Monitoring (B.2.1.34) program will be used to manage increase in porosity and permeability, cracking, loss of material (spalling, scaling) for the following components for Group 1, 3, 5, and 6 structures.</p> <p>Concrete (accessible) interior exposed to the air-indoor uncontrolled.</p> <p>Concrete (accessible) above-grade exterior, foundations, and manholes, handholes and duct banks, exposed to the air-outdoor environments.</p> <p>Concrete (inaccessible) below-grade exterior, foundations, equipment supports and foundations, and manholes, handholes, and duct banks, exposed to the groundwater/soil environment for Group 1, 3, 5, and 6 structures.</p> <p>Group 2 and 9 structures are not applicable to Clinton Power Station and the only Group 7 structure is the missile barrier component associated with the Control Building.</p>

LRA Table 3.5.2-1, Auxiliary Building, Summary of Aging Management Evaluation, pages 3.5-85 and 3.5-86 are revised as shown below.

Table 3.5.2-1 Auxiliary Building (Continued)

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Item	NUREG-1800 Table 1 Item	Notes
Concrete: Above grade exterior (accessible)	Flood Barrier Missile Barrier Shelter/Protection Shielding Structural Pressure Barrier Structural Support	Reinforced concrete	Air - Outdoor	Cracking, Loss of Bond, and Loss of Material (Spalling, Scaling)	Structures Monitoring (B.2.1.34)	III.A3.TP-26	3.5.1-66	A
				Increase in Porosity and Permeability, Cracking, Loss of Material (Spalling, Scaling)	Structures Monitoring (B.2.1.34)	III.A3.TP-28	3.5.1-67	A
				Loss of Material (Spalling, Scaling) and Cracking	Structures Monitoring (B.2.1.34)	III.A3.TP-23	3.5.1-64	A
			Water - Flowing	Increase in Porosity and Permeability, Loss of Strength	Structures Monitoring (B.2.1.34)	III.A3.TP-24	3.5.1-63	A

Table 3.5.2-1 Auxiliary Building (Continued)

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Item	NUREG-1800 Table 1 Item	Notes
Concrete: Interior	Flood Barrier Missile Barrier Shelter/Protection Shielding Structural Pressure Barrier Structural Support	Reinforced concrete	Air – Indoor, Uncontrolled	Cracking, Loss of Bond, and Loss of Material (Spalling, Scaling)	Structures Monitoring (B.2.1.34)	III.A3.TP-26	3.5.1-66	A
				<i>Increase in Porosity and Permeability, Cracking, Loss of Material (Spalling, Scaling)</i>	<i>Structures Monitoring (B.2.1.34)</i>	<i>III.A3.TP-28</i>	<i>3.5.1-67</i>	<i>A</i>

LRA Table 3.5.2-3, Control Building, Summary of Aging Management Evaluation, pages 3.5-105 and 3.5-107 are revised as shown below:

Table 3.5.2-3 Control Building (Continued)

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Item	NUREG-1800 Table 1 Item	Notes
Concrete: Above grade exterior (accessible)	Flood Barrier Missile Barrier Shelter/Protection Shielding Structural Pressure Barrier Structural Support	Reinforced concrete	Air - Outdoor	Cracking, Loss of Bond, and Loss of Material (Spalling, Scaling)	Structures Monitoring (B.2.1.34)	III.A1.TP-26	3.5.1-66	A
				<i>Increase in Porosity and Permeability, Cracking, Loss of Material (Spalling, Scaling)</i>	<i>Structures Monitoring (B.2.1.34)</i>	<i>III.A1.TP-28</i>	<i>3.5.1-67</i>	<i>A</i>
				Loss of Material (Spalling, Scaling) and Cracking	Structures Monitoring (B.2.1.34)	III.A1.TP-23	3.5.1-64	A
			Water - Flowing	Increase in Porosity and Permeability, Loss of Strength	Structures Monitoring (B.2.1.34)	III.A1.TP-24	3.5.1-63	A

Table 3.5.2-3 Control Building (Continued)

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Item	NUREG-1800 Table 1 Item	Notes
Concrete: Interior	Flood Barrier Missile Barrier Shelter/Protection Shielding Structural Pressure Barrier Structural Support	Reinforced concrete	Air – Indoor, Uncontrolled	Cracking, Loss of Bond, and Loss of Material (Spalling, Scaling)	Structures Monitoring (B.2.1.34)	III.A1.TP-26	3.5.1-66	A
				<i>Increase in Porosity and Permeability, Cracking, Loss of Material (Spalling, Scaling)</i>	<i>Structures Monitoring (B.2.1.34)</i>	<i>III.A1.TP-28</i>	<i>3.5.1-67</i>	<i>A</i>

LRA Table 3.5.2-5, Diesel Generator Building, Summary of Aging Management Evaluation, pages 3.5-114 and 3.5-116 are revised as shown below:

Table 3.5.2-5 Diesel Generator Building (Continued)

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Item	NUREG-1800 Table 1 Item	Notes
Concrete: Above grade exterior (accessible)	Flood Barrier Missile Barrier Shelter/Protection Structural Support	Reinforced concrete	Air - Outdoor	Cracking, Loss of Bond, and Loss of Material (Spalling, Scaling)	Structures Monitoring (B.2.1.34)	III.A3.TP-26	3.5.1-66	A
				<i>Increase in Porosity and Permeability, Cracking, Loss of Material (Spalling, Scaling)</i>	<i>Structures Monitoring (B.2.1.34)</i>	<i>III.A3.TP-28</i>	<i>3.5.1-67</i>	<i>A</i>
				Loss of Material (Spalling, Scaling) and Cracking	Structures Monitoring (B.2.1.34)	III.A3.TP-23	3.5.1-64	A
			Water - Flowing	Increase in Porosity and Permeability, Loss of Strength	Structures Monitoring (B.2.1.34)	III.A3.TP-24	3.5.1-63	A

Table 3.5.2-5 Diesel Generator Building (Continued)

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Item	NUREG-1800 Table 1 Item	Notes
Concrete: Interior	Shelter/Protection Structural Support	Reinforced concrete	Air – Indoor, Uncontrolled	Cracking, Loss of Bond, and Loss of Material (Spalling, Scaling)	Structures Monitoring (B.2.1.34)	III.A3.TP-26	3.5.1-66	A
				<i>Increase in Porosity and Permeability, Cracking, Loss of Material (Spalling, Scaling)</i>	<i>Structures Monitoring (B.2.1.34)</i>	<i>III.A3.TP-28</i>	<i>3.5.1-67</i>	<i>A</i>

LRA Table 3.5.2-6, Fuel Building, Summary of Aging Management Evaluation, pages 3.5-119 and 3.5-121 are revised as shown below:

Table 3.5.2-6 Fuel Building (Continued)

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Item	NUREG-1800 Table 1 Item	Notes
Concrete: Above grade exterior (accessible)	Flood Barrier Missile Barrier Shelter/Protection Shielding Structural Pressure Barrier Structural Support	Reinforced concrete	Air - Outdoor	Cracking, Loss of Bond, and Loss of Material (Spalling, Scaling)	Structures Monitoring (B.2.1.34)	III.A5.TP-26	3.5.1-66	A
				<i>Increase in Porosity and Permeability, Cracking, Loss of Material (Spalling, Scaling)</i>	<i>Structures Monitoring (B.2.1.34)</i>	<i>III.A5.TP-28</i>	<i>3.5.1-67</i>	<i>A</i>
				Loss of Material (Spalling, Scaling) and Cracking	Structures Monitoring (B.2.1.34)	III.A5.TP-23	3.5.1-64	A
			Water - Flowing	Increase in Porosity and Permeability, Loss of Strength	Structures Monitoring (B.2.1.34)	III.A5.TP-24	3.5.1-63	A

Table 3.5.2-6 Fuel Building (Continued)

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Item	NUREG-1800 Table 1 Item	Notes
Concrete: Interior	Flood Barrier Missile Barrier Shelter/Protection Shielding Structural Pressure Barrier Structural Support	Reinforced concrete	Air – Indoor, Uncontrolled	Cracking, Loss of Bond, and Loss of Material (Spalling, Scaling)	Structures Monitoring (B.2.1.34)	III.A5.TP-26	3.5.1-66	A
				<i>Increase in Porosity and Permeability, Cracking, Loss of Material (Spalling, Scaling)</i>	<i>Structures Monitoring (B.2.1.34)</i>	<i>III.A5.TP-28</i>	<i>3.5.1-67</i>	<i>A</i>

LRA Table 3.5.2-8, Primary Containment, Summary of Aging Management Evaluation, page 3.5-128 is revised as shown below:

Table 3.5.2-8 Primary Containment (Continued)

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Item	NUREG-1800 Table 1 Item	Notes
Concrete: Dome; wall; basemat; reinforcing steel (accessible)	Flood Barrier Missile Barrier Shelter/Protection Shielding Structural Pressure Barrier Structural Support	Reinforced concrete	Air – Indoor, Uncontrolled	Cracking, Loss of Bond, and Loss of Material (Spalling, Scaling)	ASME Section XI, Subsection IWL (B.2.1.30)	II.B3.2.CP-88	3.5.1-21	A
				Cracking	ASME Section XI, Subsection IWL (B.2.1.30)	II.B3.2.CP-60	3.5.1-19	A
				<i>Increase in Porosity and Permeability, Cracking, Loss of Material (Spalling, Scaling)</i>	<i>ASME Section XI, Subsection IWL (B.2.1.30)</i>	<i>II.B3.2.CP-84</i>	<i>3.5.1-24</i>	<i>A</i>

LRA Table 3.5.2-9, Radwaste Building, Summary of Aging Management Evaluation, pages 3.5-141 and 3.5-143 are revised as shown below:

Table 3.5.2-9 Radwaste Building (Continued)

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Item	NUREG-1800 Table 1 Item	Notes
Concrete: Above grade exterior (accessible)	Flood Barrier Shelter/Protection Shielding Structural Support	Reinforced concrete	Air - Outdoor	Cracking, Loss of Bond, and Loss of Material (Spalling, Scaling)	Structures Monitoring (B.2.1.34)	III.A3.TP-26	3.5.1-66	A
				<i>Increase in Porosity and Permeability, Cracking, Loss of Material (Spalling, Scaling)</i>	<i>Structures Monitoring (B.2.1.34)</i>	<i>III.A3.TP-28</i>	<i>3.5.1-67</i>	<i>A</i>
				Loss of Material (Spalling, Scaling) and Cracking	Structures Monitoring (B.2.1.34)	III.A3.TP-23	3.5.1-64	A
			Water - Flowing	Increase in Porosity and Permeability, Loss of Strength	Structures Monitoring (B.2.1.34)	III.A3.TP-24	3.5.1-63	A

Table 3.5.2-9 Radwaste Building (Continued)

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Item	NUREG-1800 Table 1 Item	Notes
Concrete: Interior	Flood Barrier Shelter/Protection Shielding Structural Support Water Retaining Boundary	Reinforced concrete	Air – Indoor, Uncontrolled	Cracking, Loss of Bond, and Loss of Material (Spalling, Scaling)	Structures Monitoring (B.2.1.34)	III.A3.TP-26	3.5.1-66	A
				<i>Increase in Porosity and Permeability, Cracking, Loss of Material (Spalling, Scaling)</i>	<i>Structures Monitoring (B.2.1.34)</i>	<i>III.A3.TP-28</i>	<i>3.5.1-67</i>	<i>A</i>

LRA Table 3.5.2-10, Screen House, Summary of Aging Management Evaluation, pages 3.5-148 and 3.5-150 are revised as shown below:

Table 3.5.2-10 Screen House (Continued)

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Item	NUREG-1800 Table 1 Item	Notes
Concrete: Above grade exterior (accessible)	Flood Barrier Missile Barrier Shelter/Protection Structural Support	Reinforced concrete	Air - Outdoor	Cracking, Loss of Bond, and Loss of Material (Spalling, Scaling)	RG 1.127, Inspection of Water-Control Structures Associated with Nuclear Power Plants (B.2.1.35)	III.A6.TP-38	3.5.1-59	A
				<i>Increase in Porosity and Permeability, Cracking, Loss of Material (Spalling, Scaling)</i>	<i>Structures Monitoring (B.2.1.34)</i>	<i>III.A3.TP-28</i>	<i>3.5.1-67</i>	<i>A</i>
				Loss of Material (Spalling, Scaling) and Cracking	RG 1.127, Inspection of Water-Control Structures Associated with Nuclear Power Plants (B.2.1.35)	III.A6.TP-36	3.5.1-60	A
			Water - Flowing	Increase in Porosity and Permeability, Loss of Strength	RG 1.127, Inspection of Water-Control Structures Associated with Nuclear Power Plants (B.2.1.35)	III.A6.TP-37	3.5.1-61	A, 1

Table 3.5.2-10 Screen House (Continued)

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Item	NUREG-1800 Table 1 Item	Notes
Concrete: Interior (accessible)	Flood Barrier Missile Barrier Shelter/Protection Structural Support	Reinforced concrete	Air – Indoor, Uncontrolled	Cracking, Loss of Bond, and Loss of Material (Spalling, Scaling)	RG 1.127, Inspection of Water-Control Structures Associated with Nuclear Power Plants (B.2.1.35)	III.A6.TP-38	3.5.1-59	A
				<i>Increase in Porosity and Permeability, Cracking, Loss of Material (Spalling, Scaling)</i>	<i>Structures Monitoring (B.2.1.34)</i>	<i>III.A3.TP-28</i>	<i>3.5.1-67</i>	<i>A</i>
			Water - Flowing	Increase in Porosity and Permeability, Loss of Strength	RG 1.127, Inspection of Water-Control Structures Associated with Nuclear Power Plants (B.2.1.35)	III.A6.TP-37	3.5.1-61	A
				Loss of Material	RG 1.127, Inspection of Water-Control Structures Associated with Nuclear Power Plants (B.2.1.35)	III.A6.T-20	3.5.1-56	A

LRA Table 3.5.2-12, Switchyard Structures, Summary of Aging Management Evaluation, pages 3.5-162, 3.5-163 and 3.5-164 are revised as shown below:

Table 3.5.2-12 Switchyard Structures (Continued)

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Item	NUREG-1800 Table 1 Item	Notes
Concrete: Foundation (accessible)	Shelter/Protection Structural Support	Reinforced concrete	Air – Outdoor	Cracking, Loss of Bond, and Loss of Material (Spalling, Scaling)	Structures Monitoring (B.2.1.34)	III.A3.TP-26	3.5.1-66	A
				<i>Increase in Porosity and Permeability, Cracking, Loss of Material (Spalling, Scaling)</i>	<i>Structures Monitoring (B.2.1.34)</i>	<i>III.A3.TP-28</i>	<i>3.5.1-67</i>	<i>A</i>
				Loss of Material (Spalling, Scaling) and Cracking	Structures Monitoring (B.2.1.34)	III.A3.TP-23	3.5.1-64	A
			Water - Flowing	Increase in Porosity and Permeability, Loss of Strength	Structures Monitoring (B.2.1.34)	III.A3.TP-24	3.5.1-63	A

Table 3.5.2-12 Switchyard Structures (Continued)

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Item	NUREG-1800 Table 1 Item	Notes
Concrete: Interior	Shelter/Protection Structural Support	Reinforced concrete	Air – Indoor, Uncontrolled	Cracking, Loss of Bond, and Loss of Material (Spalling, Scaling)	Structures Monitoring (B.2.1.34)	III.A3.TP-26	3.5.1-66	A
				<i>Increase in Porosity and Permeability, Cracking, Loss of Material (Spalling, Scaling)</i>	<i>Structures Monitoring (B.2.1.34)</i>	<i>III.A3.TP-28</i>	<i>3.5.1-67</i>	<i>A</i>

Table 3.5.2-12 Switchyard Structures (Continued)

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Item	NUREG-1800 Table 1 Item	Notes
Manholes, Handholes & Duct Banks	Missile Barrier Shelter/Protection	Ductile Cast Iron	Air - Outdoor	Loss of Material	Structures Monitoring (B.2.1.34)	III.A3.TP-302	3.5.1-77	C
		Galvanized Steel	Air - Outdoor	Loss of Material	Structures Monitoring (B.2.1.34)	III.A3.TP-302	3.5.1-77	A
		Reinforced concrete	Air – Outdoor	Cracking, Loss of Bond, and Loss of Material (Spalling, Scaling)	Structures Monitoring (B.2.1.34)	III.A3.TP-26	3.5.1-66	A
				Increase in Porosity and Permeability, Cracking, Loss of Material (Spalling, Scaling)	Structures Monitoring (B.2.1.34)	III.A3.TP-28	3.5.1-67	A
				Loss of Material (Spalling, Scaling) and Cracking	Structures Monitoring (B.2.1.34)	III.A3.TP-23	3.5.1-64	A
				Groundwater/Soil	Cracking, Loss of Bond, and Loss of Material (Spalling, Scaling)	Structures Monitoring (B.2.1.34)	III.A3.TP-212	3.5.1-65
		Increase in Porosity and Permeability, Cracking, Loss of Material (Spalling, Scaling)	Structures Monitoring (B.2.1.34)		III.A3.TP-29	3.5.1-67	C	
		Water - Flowing	Increase in Porosity and Permeability, Loss of Strength	Structures Monitoring (B.2.1.34)	III.A3.TP-24	3.5.1-63	C	

LRA Table 3.5.2-13, Tank Foundations and Dikes, Summary of Aging Management Evaluation, page 3.5-168 is revised as shown below:

Table 3.5.2-13 Tank Foundations and Dikes (Continued)

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Item	NUREG-1800 Table 1 Item	Notes
Concrete: Foundation (accessible)	Shelter/Protection Structural Support	Reinforced concrete	Air - Outdoor	Cracking, Loss of Bond, and Loss of Material (Spalling, Scaling)	Structures Monitoring (B.2.1.34)	III.A3.TP-26	3.5.1-66	A
				<i>Increase in Porosity and Permeability, Cracking, Loss of Material (Spalling, Scaling)</i>	<i>Structures Monitoring (B.2.1.34)</i>	<i>III.A3.TP-28</i>	<i>3.5.1-67</i>	<i>A</i>
				Loss of Material (Spalling, Scaling) and Cracking	Structures Monitoring (B.2.1.34)	III.A3.TP-23	3.5.1-64	A
			Water - Flowing	Increase in Porosity and Permeability, Loss of Strength	Structures Monitoring (B.2.1.34)	III.A3.TP-24	3.5.1-63	A

LRA Table 3.5.2-14, Turbine Building, Summary of Aging Management Evaluation, pages 3.5-171 and 3.5-173 are revised as shown below:

Table 3.5.2-14 Turbine Building (Continued)

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Item	NUREG-1800 Table 1 Item	Notes
Concrete: Above grade exterior (accessible)	Flood Barrier Shelter/Protection Shielding Structural Support	Reinforced concrete	Air - Outdoor	Cracking, Loss of Bond, and Loss of Material (Spalling, Scaling)	Structures Monitoring (B.2.1.34)	III.A3.TP-26	3.5.1-66	A
				<i>Increase in Porosity and Permeability, Cracking, Loss of Material (Spalling, Scaling)</i>	<i>Structures Monitoring (B.2.1.34)</i>	<i>III.A3.TP-28</i>	<i>3.5.1-67</i>	<i>A</i>
				Loss of Material (Spalling, Scaling) and Cracking	Structures Monitoring (B.2.1.34)	III.A3.TP-23	3.5.1-64	A
			Water - Flowing	Increase in Porosity and Permeability, Loss of Strength	Structures Monitoring (B.2.1.34)	III.A3.TP-24	3.5.1-63	A

Table 3.5.2-14 Turbine Building (Continued)

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Item	NUREG-1800 Table 1 Item	Notes
Concrete: Interior	Flood Barrier Shelter/Protection Shielding Structural Support	Reinforced concrete	Air – Indoor, Uncontrolled	Cracking, Loss of Bond, and Loss of Material (Spalling, Scaling)	Structures Monitoring (B.2.1.34)	III.A3.TP-26	3.5.1-66	A
				<i>Increase in Porosity and Permeability, Cracking, Loss of Material (Spalling, Scaling)</i>	<i>Structures Monitoring (B.2.1.34)</i>	<i>III.A3.TP-28</i>	<i>3.5.1-67</i>	<i>A</i>

LRA Table 3.5.2-15, Yard Structures, Summary of Aging Management Evaluation, pages 3.5-177, 3.5-178 and 3.5-179 are revised as shown below:

Table 3.5.2-15 Yard Structures (Continued)

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Item	NUREG-1800 Table 1 Item	Notes
Concrete: Foundation (accessible)	Flood Barrier Shelter/Protection Structural Support	Reinforced concrete	Air – Outdoor	Cracking, Loss of Bond, and Loss of Material (Spalling, Scaling)	Structures Monitoring (B.2.1.34)	III.A3.TP-26	3.5.1-66	A
				<i>Increase in Porosity and Permeability, Cracking, Loss of Material (Spalling, Scaling)</i>	<i>Structures Monitoring (B.2.1.34)</i>	<i>III.A3.TP-28</i>	<i>3.5.1-67</i>	<i>A</i>
				Loss of Material (Spalling, Scaling) and Cracking	Structures Monitoring (B.2.1.34)	III.A3.TP-23	3.5.1-64	A
			Water - Flowing	Increase in Porosity and Permeability, Loss of Strength	Structures Monitoring (B.2.1.34)	III.A3.TP-24	3.5.1-63	A

Table 3.5.2-15 Yard Structures (Continued)

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Item	NUREG-1800 Table 1 Item	Notes
Concrete: Interior	Shelter/Protection Structural Support	Reinforced concrete	Air – Indoor, Uncontrolled	Cracking, Loss of Bond, and Loss of Material (Spalling, Scaling)	Structures Monitoring (B.2.1.34)	III.A3.TP-26	3.5.1-66	A
				<i>Increase in Porosity and Permeability, Cracking, Loss of Material (Spalling, Scaling)</i>	<i>Structures Monitoring (B.2.1.34)</i>	<i>III.A3.TP-28</i>	<i>3.5.1-67</i>	<i>A</i>

Table 3.5.2-15 Yard Structures (Continued)

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Item	NUREG-1800 Table 1 Item	Notes
Manholes, Handholes & Duct Banks	Missile Barrier Shelter/Protection	Galvanized Steel	Air - Outdoor	Loss of Material	Structures Monitoring (B.2.1.34)	III.A3.TP-302	3.5.1-77	A
		Reinforced concrete	Air – Outdoor	Cracking, Loss of Bond, and Loss of Material (Spalling, Scaling)	Structures Monitoring (B.2.1.34)	III.A3.TP-26	3.5.1-66	A
				Increase in Porosity and Permeability, Cracking, Loss of Material (Spalling, Scaling)	Structures Monitoring (B.2.1.34)	III.A3.TP-28	3.5.1-67	A
				Loss of Material (Spalling, Scaling) and Cracking	Structures Monitoring (B.2.1.34)	III.A3.TP-23	3.5.1-64	A
				Groundwater/Soil	Cracking, Loss of Bond, and Loss of Material (Spalling, Scaling)	Structures Monitoring (B.2.1.34)	III.A3.TP-212	3.5.1-65
		Increase in Porosity and Permeability, Cracking, Loss of Material (Spalling, Scaling)	Structures Monitoring (B.2.1.34)		III.A3.TP-29	3.5.1-67	A	
		Water - Flowing	Increase in Porosity and Permeability, Loss of Strength	Structures Monitoring (B.2.1.34)	III.A3.TP-24	3.5.1-63	A	

Change #3 – Correction of Changes Made in Previous Supplements for Clarity

Affected LRA Sections: Table 3.3.1 and Table 3.3.2-15

LRA Page Numbers: 3.3-60 and 3.3-210

Description of Change:

Two items in Supplement 1 and Supplement 2 are being corrected for clarity. The LRA markup for Table 3.3.1, Item 3.3.1-64 in Supplement 2, Change #8 is being replaced to include the changes made via Supplement 2, Change #3 which deleted reference to the Bolting Integrity program. Additionally, the Standby Gas Hi Range Rad Monitor Cooler tubes environment in Table 3.3.2-15 provided in Supplement 1, Change #1 is being revised to reflect the configuration of the cooler.

Accordingly, LRA Table 3.3.1 and Table 3.3.2-15 are revised.

This LRA markup replaces the markup in Supplement 2, Change #8 to include the changes made via Supplement 2, Change #3 which deleted reference to the Bolting Integrity program.

Table 3.3.1 Summary of Aging Management Evaluations for the Auxiliary Systems					
Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.3.1-64	Steel, Copper alloy Piping, piping components, and piping elements exposed to Raw water	Loss of material due to general, pitting, crevice, and microbiologically-influenced corrosion; fouling that leads to corrosion; flow blockage due to fouling	Chapter XI.M27, "Fire Water System"	No	<p>Consistent with NUREG-1801 with exceptions. The Fire Water System (B.2.1.17) program will be used to manage loss of material, fouling that leads to corrosion, and flow blockage of carbon steel, copper alloy with 15% zinc or less, copper alloy with greater than 15% zinc, ductile cast iron, galvanized steel, and gray cast iron piping, piping components, and piping elements and tanks exposed to raw water in the Fire Protection System and Open Cycle Cooling Water System.</p> <p>An exception applies to the NUREG-1801 recommendations for Fire Water System (B.2.1.17) program implementation.</p> <p>The Bolting Integrity (B.2.1.11) program has been substituted and will be used to manage loss of material of carbon and low alloy steel bolting exposed to raw water in the Fire Protection System.</p> <p>The Open Cycle Cooling Water (B.2.1.12) manages loss of material for the fire water suction screens which consist of the fixed screens and the traveling screens.</p>

LRA Table 3.3.2-15, Process Radiation Monitoring System, Summary of Aging Management Evaluation, page 3.3-210 is revised as shown below. This LRA markup incorporates changes submitted in Supplement 1, dated November 27, 2024, via Change #1 which changed the environment of the Standby Gas Hi Range Rad Monitor Cooler shell side components and tubes and is duplicated here as an aid to the reviewer.

**Table 3.3.2-15
 Process Radiation Monitoring System
 Summary of Aging Management Evaluation**

Table 3.3.2-15 Process Radiation Monitoring System

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Item	NUREG-1800 Table 1 Item	Notes
Heat Exchanger (Standby Gas Hi Range Rad Monitor Cooler) Shell Side Components	Pressure Boundary	Carbon Steel	Air - Indoor, Uncontrolled (External)	Loss of Material	External Surfaces Monitoring of Mechanical Components (B.2.1.24)	VII.I.A-77	3.3.1-78	A
			Raw Water (Internal)	Loss of Material	Open-Cycle Cooling Water Systems (B.2.1.12)	VII.C1.AP-183	3.3.1-38	A
Heat Exchanger (Standby Gas Hi Range Rad Monitor Cooler) Tube Side Components	Pressure Boundary	Stainless Steel	Air - Indoor, Uncontrolled (External)	None	None	VII.J.AP-17	3.3.1-120	C
			Condensation (Internal)	Loss of Material	Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components (B.2.1.25)	VII.E5.AP-273	3.3.1-95	A
Heat Exchanger (Standby Gas Hi Range Rad Monitor Cooler) Tubes	Heat Transfer	Nickel Alloy	Raw Water (Internal External)	Reduction of Heat Transfer	Open-Cycle Cooling Water Systems (B.2.1.12)			G, 1