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JAN 12 2009

U. S. Nuclear Regulatory Commission
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**SUSQUEHANNA STEAM ELECTRIC STATION
UNITS 1 AND 2, LICENSE RENEWAL APPLICATION (LRA)
AMENDMENT TO ADDRESS AGING OF THE EMERGENCY
DIESEL GENERATOR EXHAUST PIPING
PLA-6472**

**Docket Nos. 50-387
and 50-388**

- References:*
- 1) PLA-6110, Mr. B. T. McKinney (PPL) to Document Control Desk (USNRC),
"Application for Renewed Operating License Numbers NPF-14 and NPF-22,"
dated September 13, 2006.
 - 2) PLA-6391, Mr. B. T. McKinney (PPL) to Document Control Desk (USNRC),
"Request for Additional Information for the Review of the Susquehanna Steam
Electric Station Units 1 and 2, License Renewal Application (LRA) Sections B.2.23,
B.2.24, B.2.26, B.2.27, B.2.28, B.2.31," dated July 25, 2008.
 - 3) PLA-6428, Mr. B. T. McKinney (PPL) to Document Control Desk (USNRC),
"Units 1 and 2, License Renewal Application (LRA) Amendments to Sections 2.1.1,
B.2.14, B.2.22, B.2.28, B.2.31, and B.2.46 in Response to NRC Regional Inspection,"
dated September 30, 2008.
 - 4) PLA-6435, Mr. B. T. McKinney (PPL) to Document Control Desk (USNRC),
"Units 1 and 2, License Renewal Application (LRA) Amendments to Sections B.2.13,
B.2.17, B.2.20, B.2.22, B.2.28, B.2.32, and B.2.48 in Response to NRC Regional
Inspection," dated October 21, 2008.
 - 5) PLA-6457, Mr. W. H. Spence (PPL) to Document Control Desk (USNRC),
"Units 1 and 2, License Renewal Application (LRA) Amendments to LRA
and RAI Responses," dated November 25, 2008.

In accordance with the requirements of 10 CFR 50, 51, and 54, PPL requested the
renewal of the operating licenses for the Susquehanna Steam Electric Station (SSES)
Units 1 and 2 in Reference 1.

A120
NRR

The enclosure to this letter provides an amendment to the SSES License Renewal Application (LRA). The information herein provides the resolution to a concern regarding the aging management review results for the emergency diesel generator (EDG) exhaust piping and components, which was discussed in two teleconferences between the NRC and PPL on December 18, 2008 and January 5, 2009.

There are no new regulatory commitments contained herein. However, License Renewal Commitment # 24 is revised as shown in the enclosure to include a one-time inspection of the EDG exhaust piping and components.

If you have any questions, please contact Mr. Duane L. Filchner at (610) 774-7819.

I declare, under penalty of perjury, that the foregoing is true and correct.

Executed on: 1-12-09

Richard D. Pogoda for W.H. Spence

W. H. Spence

Enclosure: Amendment to SSES License Renewal Application (LRA)

Copy: NRC Region I

Ms. E. H. Gettys, NRC Project Manager, License Renewal, Safety

Mr. R. Janati, DEP/BRP

Mr. F. W. Jaxheimer, NRC Sr. Resident Inspector

Mr. A. L. Stuyvenberg, NRC Project Manager, License Renewal, Environmental

**Enclosure to PLA-6472
Amendment to SSES
License Renewal Application (LRA)**

LRA Amendment

The NRC staff identified a concern with the results of the aging management review (AMR) for the emergency diesel generator (EDG) exhaust piping and components, as presented in LRA Table 3.3.2.9, during a teleconference between NRC and PPL on December 18, 2008. Discussion during a follow-up teleconference between the NRC and PPL on January 5, 2009, established the need to amend the LRA to address the concern.

The NRC concern was that the AMR had only considered the internal environment of the EDG exhaust piping to be the “ventilation” environment, as defined in LRA Table 3.0-1. Since the diesel generators are run infrequently, PPL had concluded that any effects from the exhaust gas would be negligible. However, the NRC staff noted that the diesel exhaust could contain significant levels of moisture and contaminants that are not normally present in an indoor ventilation air environment and that these contaminants may be deposited on the internal surfaces of the EDG piping and components. Over time, these contaminants could promote certain aging effects, especially if moisture is present. Since PPL had only considered the “ventilation” environment (i.e., without considering the presence of moisture and contaminants), the AMR results in LRA Table 3.3.2.9 did not include all of the applicable aging effects for the EDG exhaust piping and components.

PPL revised the AMR results in LRA Table 3.3.2.9 to address the NRC concern. The revision includes the aging effects that could result from the presence of moisture and contaminants in the diesel exhaust, and a one-time inspection of the internal surfaces of the EDG exhaust piping and components is now credited to manage the potential aging effects.

The one-time inspection of the internal surfaces of the EDG exhaust piping and components will be performed as part of aging management program (AMP) B.2.28, “Supplemental Piping/Tank Inspection,” which is consistent with GALL AMP XI.M32, “One-Time Inspection.” AMP B.2.28 is appropriate because it requires the use of volumetric and/or VT-1 or enhanced VT-1 visual inspection techniques, which, according to ASME Section XI, IWA-2000 specifications, are valid inspection methods for the detection of loss of material and cracking. This AMP is also appropriate because, while the potential aging effects are not expected to occur due to the infrequent presence of diesel exhaust, there is insufficient operating experience to rule out the aging effects with reasonable confidence.

The following LRA Amendment provides the revised AMR results and the details for the inclusion of the EDG exhaust piping and components in AMP B.2.28.

3.3 AGING MANAGEMENT OF AUXILIARY SYSTEMS

- The following subsections in LRA Section 3.3.2.2, Further Evaluation of Aging Management as Recommended by NUREG-1801 (on LRA pages 3.3-42, 3.3-43, and 3.3-44), are revised by addition (*bold italics*) and deletion (~~strikethrough~~).

3.3.2.2.3.3 Diesel Engine Exhaust Piping, Piping Components, and Piping Elements

During normal plant operations, diesel exhaust piping, piping components, and piping elements are exposed to diesel exhaust only when the diesel engine is tested, which occurs infrequently and for short durations. *It is recognized that this diesel exhaust may contain moisture and contaminants.* ~~For the remaining time, these components are exposed internally to ambient air, and remain dry. As such, the Supplemental Piping/Tank Inspection is credited as a one-time inspection that will detect and characterize~~ Therefore, cracking due to SCC is ~~not identified as an aging effect requiring management~~ for stainless steel diesel engine exhaust *piping* components. ~~Loss of material due to general corrosion is managed by the System Walkdown Program, which is credited for internal surfaces, because the internal environment is essentially the same as the external environment.~~

3.3.2.2.7.3 Diesel Exhaust Piping, Piping Components, and Piping Elements

The Supplemental Piping/Tank Inspection is a one-time inspection that will detect and characterize ~~Loss of material due to general, pitting, and crevice corrosion for stainless steel, steel, and cast iron piping, piping components, and turbocharger casings exposed to diesel exhaust. is managed by the System Walkdown Program. Loss of material due to corrosion was not identified as an applicable aging effect for the stainless steel diesel exhaust piping flexible connections and tubing which are located inside the diesel generator buildings. The diesel exhaust system is normally in standby mode, and the inside surfaces of the components are dry and not subject to any type of wetting.~~ *however, the piping is periodically exposed to diesel exhaust that may contain moisture and contaminants.*

- The following rows in LRA Table 3.3.1 (on LRA pages 3.3-50 and 3.3-58) are revised by addition (*bold italics*) and deletion (~~strikethrough~~).

Table 3.3.1 Summary of Aging Management Programs for Auxiliary Systems Evaluated in Chapter VII of the GALL Report					
Item Number	Component/Commodity	Aging Effect/Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.3.1-06	Stainless steel diesel engine exhaust piping, piping components, and piping elements exposed to diesel exhaust	Cracking due to stress corrosion cracking	A plant specific aging management program is to be evaluated.	Yes, plant specific	<p><i>The Supplemental Piping/Tank Inspection will detect and characterize</i> Cracking was not identified as an aging effect requiring management for the internal surfaces of stainless steel diesel exhaust components that are normally exposed to ambient air, <i>but are also exposed to diesel exhaust gases during periodic diesel testing</i> because they remain relatively dry during normal plant operations.</p> <p>Further evaluation is documented in Section 3.3.2.2.3.3.</p>

Table 3.3.1 Summary of Aging Management Programs for Auxiliary Systems Evaluated in Chapter VII of the GALL Report					
Item Number	Component/Commodity	Aging Effect/Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.3.1-18	Stainless steel and steel diesel engine exhaust piping, piping components, and piping elements exposed to diesel exhaust	Loss of material/ general (steel only), pitting and crevice corrosion	A plant specific aging management program is to be evaluated.	Yes, plant specific	<p>The Supplemental Piping/Tank Inspection System Walkdown Program will detect and characterize is credited to manage loss of material for the internal surfaces of <i>stainless steel</i>, and steel, and <i>cast iron</i> diesel exhaust components that are normally exposed to ambient air, but are also exposed to exhaust gases during periodic diesel testing. Loss of material was not identified as an aging effect requiring management for stainless steel diesel exhaust components (flexible connections), because they remain relatively dry during normal plant operations.</p> <p>Further evaluation is documented in Section 3.3.2.2.7.3.</p>

- The following rows in LRA Table 3.3.2-9, under the Diesel Generators System – Intake / Exhaust heading (on LRA pages 3.3-197 through 3.3-207) are revised by addition (*bold italics*) and deletion (~~strikethrough~~).

Table 3.3.2-9 Aging Management Review Results – Diesel Generators System								
Component / Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Diesel Generators System – Intake / Exhaust								
<i>Flexible Connections (Expansion Joints)</i>	<i>Pressure Boundary</i>	<i>Stainless Steel</i>	<i>Ventilation (Exhaust) (Internal)</i>	<i>Loss of Material</i>	<i>Supplemental Piping/Tank Inspection</i>	<i>VII.H2-2</i>	<i>3.3.1-18</i>	<i>E</i>
				<i>Cracking</i>	<i>Supplemental Piping/Tank Inspection</i>	<i>VII.H2-1</i>	<i>3.3.1-06</i>	<i>E</i>
			<i>Indoor Air (External)</i>	<i>None Identified</i>	<i>None Required</i>	<i>VII.J-15</i>	<i>3.3.1-94</i>	<i>A</i>
Flexible Connections OG501E (Seal Boot)	Pressure Boundary	Carbon Steel	Ventilation (Exhaust) (Internal)	Loss of Material	<i>Supplemental Piping/Tank Inspection System Walkdown Program</i>	<i>VII.H2-2</i> VII.I-8	<i>3.3.1-18</i> 3.3.1-58	<i>E</i> C, 0302
				Indoor Air (External)	Loss of Material	System Walkdown Program	VII.I-8	3.3.1-58
Flexible Connections OG501E (Seal Boot)	Pressure Boundary	Stainless Steel	Ventilation (Exhaust) (Internal)	Loss of Material <i>None Identified</i>	<i>Supplemental Piping/Tank Inspection</i> None Required	<i>VII.H2-2</i> VII.J-15	<i>3.3.1-18</i> 3.3.1-94	<i>E</i> A, 0302
				<i>Cracking</i>	<i>Supplemental Piping/Tank Inspection</i>	<i>VII.H2-1</i>	<i>3.3.1-06</i>	<i>E</i>
			Indoor Air (External)	None Identified	None Required	VII.J-15	3.3.1-94	A

Table 3.3.2-9 Aging Management Review Results – Diesel Generators System								
Component / Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Piping	Pressure Boundary	Carbon Steel	Ventilation (Internal)	Loss of Material	System Walkdown Program	VII.I-8 VII.H2-2	3.3.1-58 3.3.1-18	C E, 0329
			Indoor Air (External)	Loss of Material	System Walkdown Program	VII.I-8	3.3.1-58	A
Piping	Pressure Boundary	Carbon Steel	Ventilation (Internal)	Loss of Material	System Walkdown Program	VII.I-8 VII.H2-2	3.3.1-58 3.3.1-18	C E, 0329
			Outdoor Air (External)	Loss of Material	System Walkdown Program	VII.I-9	3.3.1-58	A
Piping	Pressure Boundary	Carbon Steel	<i>Ventilation (Exhaust) (Internal)</i>	<i>Loss of Material</i>	<i>Supplemental Piping/Tank Inspection</i>	<i>VII.H2-2</i>	<i>3.3.1-18</i>	<i>E</i>
			<i>Indoor Air (External)</i>	<i>Loss of Material</i>	<i>System Walkdown Program</i>	<i>VII.I-8</i>	<i>3.3.1-58</i>	<i>A</i>
Piping	Pressure Boundary	Carbon Steel	<i>Ventilation (Exhaust) (Internal)</i>	<i>Loss of Material</i>	<i>Supplemental Piping/Tank Inspection</i>	<i>VII.H2-2</i>	<i>3.3.1-18</i>	<i>E</i>
			<i>Outdoor Air (External)</i>	<i>Loss of Material</i>	<i>System Walkdown Program</i>	<i>VII.I-9</i>	<i>3.3.1-58</i>	<i>A</i>
Silencers (Exhaust)	Pressure Boundary	Carbon Steel	Ventilation (Exhaust) (Internal)	Loss of Material	<i>Supplemental Piping/Tank Inspection System Walkdown Program</i>	VII.H2-2	3.3.1-18	E 0329

Table 3.3.2-9 Aging Management Review Results – Diesel Generators System								
Component / Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
<i>Tubing (and Fittings)</i>	<i>Pressure Boundary</i>	<i>Stainless Steel</i>	<i>Ventilation (Exhaust) (Internal)</i>	<i>Loss of Material</i>	<i>Supplemental Piping/Tank Inspection</i>	<i>VII.H2-2</i>	<i>3.3.1-18</i>	<i>E</i>
				<i>Cracking</i>	<i>Supplemental Piping/Tank Inspection</i>	<i>VII.H2-1</i>	<i>3.3.1-06</i>	<i>E</i>
			<i>Indoor Air (External)</i>	<i>None Identified</i>	<i>None Required</i>	<i>VII.J-15</i>	<i>3.3.1-94</i>	<i>A</i>
<i>Tubing (and Fittings)</i>	<i>Pressure Boundary</i>	<i>Carbon Steel</i>	<i>Ventilation (Exhaust) (Internal)</i>	<i>Loss of Material</i>	<i>Supplemental Piping/Tank Inspection</i>	<i>VII.H2-2</i>	<i>3.3.1-18</i>	<i>E</i>
			<i>Indoor Air (External)</i>	<i>Loss of Material</i>	<i>System Walkdown Program</i>	<i>VII.I-8</i>	<i>3.3.1-58</i>	<i>A</i>
<i>Turbocharger Casings (0G501A-D)</i>	<i>Pressure Boundary</i>	<i>Cast Iron</i>	<i>Ventilation (Exhaust) (Internal)</i>	<i>Loss of Material</i>	<i>Supplemental Piping/Tank Inspection</i>	<i>VII.H2-2</i>	<i>3.3.1-18</i>	<i>E</i>
			<i>Indoor Air (External)</i>	<i>Loss of Material</i>	<i>System Walkdown Program</i>	<i>VII.I-8</i>	<i>3.3.1-58</i>	<i>A</i>
<i>Turbocharger Casings (0G501A-D)</i>	<i>Pressure Boundary</i>	<i>Carbon Steel</i>	<i>Ventilation (Exhaust) (Internal)</i>	<i>Loss of Material</i>	<i>Supplemental Piping/Tank Inspection</i>	<i>VII.H2-2</i>	<i>3.3.1-18</i>	<i>E</i>
			<i>Indoor Air (External)</i>	<i>Loss of Material</i>	<i>System Walkdown Program</i>	<i>VII.I-8</i>	<i>3.3.1-58</i>	<i>A</i>

Table 3.3.2-9 Aging Management Review Results – Diesel Generators System								
Component / Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
<i>Turbocharger Casings (0G501E)</i>	<i>Pressure Boundary</i>	<i>Cast Iron</i>	<i>Ventilation (Exhaust) (Internal)</i>	<i>Loss of Material</i>	<i>Supplemental Piping/Tank Inspection</i>	<i>VII.H2-2</i>	<i>3.3.1-18</i>	<i>E</i>
			<i>Indoor Air (External)</i>	<i>Loss of Material</i>	<i>System Walkdown Program</i>	<i>VII.I-8</i>	<i>3.3.1-58</i>	<i>A</i>

- The following row in the Plant-Specific Notes table for LRA Section 3.3 (on LRA page 3.3-348) is revised by addition (*bold italics*) and deletion (~~strike through~~).

Plant-Specific Notes:	
0329	<i>Not used.</i> This environment is different than the GALL environment for this item. The diesel exhaust piping is exposed to diesel exhaust gases infrequently and for short durations. Therefore, the normal internal environment for the exhaust piping is ambient air, without exposure to condensation or wetting other than humidity.

APPENDIX A FINAL SAFETY ANALYSIS REPORT SUPPLEMENT

- LRA Section A.1.2.46 (on LRA page A-20) is revised by addition (*bold italics*) and deletion (~~strikethrough~~) as follows:

A.1.2.46 Supplemental Piping/Tank Inspection

The Supplemental Piping/Tank Inspection detects and characterizes the condition of carbon *steel*, ~~and~~ stainless steel, *and cast iron* components that are exposed to moist air environments, particularly the aggressive alternate wet/dry environment that exists at air-water interfaces, *and for the internal surfaces of diesel exhaust components due to periodic exposure to exhaust gases containing moisture and contaminants*. The inspection provides direct evidence as to whether, and to what extent, a loss of material *or cracking (of stainless steel exposed to diesel exhaust)* has occurred or is likely to occur that could result in a loss of intended function.

The Supplemental Piping/Tank Inspection is a new one-time inspection that will be implemented prior to the period of extended operation. The inspection activities will be conducted within the 10-year period prior to the period of extended operation.

➤ LRA Table A-1 (on LRA page A-42) is revised by addition (*bold italics*) as follows:

(Note that the changes made previously in Reference 5 are shown but not highlighted.)

Table A-1			
SSES License Renewal Commitments			
Item Number	Commitment	FSAR Supplement Location (LRA App. A)	Enhancement or Implementation Schedule
24) Supplemental Piping/Tank Inspection	<p>Program is a new one-time inspection.</p> <p>The Supplemental Piping/Tank Inspection is credited for managing loss of material due to crevice and pitting corrosion on carbon steel surfaces at air-water interfaces. The inspection is also credited for managing loss of material due to microbiologically influenced corrosion (MIC) at the air-water interface with the mist eliminator loop seal, which is filled with raw water from the Service Water System, and galvanic corrosion at points of contact between the mist eliminator housing and the SGTS filter enclosure, where condensation and water pooling may occur. Additionally, the Supplemental Piping/Tank Inspection detects and characterizes whether, and to what extent, a loss of material due to crevice and pitting corrosion is occurring (or is likely to occur) for stainless steel surfaces at air-water interfaces. The Supplemental Piping/Tank Inspection also detects and characterizes loss of material due to crevice, galvanic, general, and pitting corrosion on internal carbon steel surfaces within the scram discharge volume (piping and valve bodies) of the Control Rod Drive Hydraulic System, within the air space of the condensate storage tanks and within the Diesel Generator starting air receiver tanks and E diesel compressor skid air receiver tanks to determine whether, and to what extent, degradation is occurring (or is likely to occur).</p> <p><i>In addition, the Supplemental Piping/Tank Inspection is credited to detect and characterize loss of material due to general, crevice, and pitting corrosion on the internal surfaces of carbon steel and cast iron diesel exhaust piping, piping components, and turbocharger casings. The inspection is also credited to detect and characterize cracking and loss of material due to crevice and pitting corrosion on the internal surfaces of stainless steel diesel exhaust piping components.</i></p>	A.1.2.46	Within the 10-year period prior to the period of extended operation.

APPENDIX B AGING MANAGEMENT PROGRAMS

- LRA Section B.2.28 (on LRA pages B-87 through B-90) is revised by addition (*bold italics*) and deletion (~~striketrough~~) as follows:

(Note that the changes made previously in References 2, 3, and 4 are shown but not highlighted.)

B.2.28 Supplemental Piping/Tank Inspection

Program Description

The purpose of the Supplemental Piping/Tank Inspection is to detect and characterize the condition of carbon *steel*, ~~and~~ stainless steel, *and cast iron* components that are exposed to moist air environments, particularly the aggressive alternate wet/dry environment that exists at air-water interfaces, *and for the internal surfaces of diesel exhaust components due to periodic exposure to exhaust gases containing moisture and contaminants*. The inspection provides direct evidence as to whether, and to what extent, a loss of material due to crevice, galvanic, general, and pitting corrosion *or cracking (of stainless steel exposed to diesel exhaust)* has occurred or is likely to occur that could result in a loss of intended function. Implementation of the Supplemental Piping/Tank Inspection will ensure that the pressure boundary integrity of susceptible piping, *piping components*, tanks, *turbocharger casings*, and valve bodies is maintained consistent with the current licensing basis during the period of extended operation.

NUREG-1801 Consistency

The Supplemental Piping/Tank Inspection is a new one-time inspection for SSES that will be consistent with the 10 elements of an effective aging management program as described in NUREG-1801, Section XI.M32, "One-Time Inspection."

Exceptions to NUREG-1801

None.

Aging Management Program Elements

The results of an evaluation of each program element are provided below.

- **Scope of Program**

The Supplemental Piping/Tank Inspection is credited for managing loss of material due to crevice and pitting corrosion on carbon steel surfaces at air-water interfaces in the following systems:

- Condensate Transfer and Storage, Containment and Suppression, Control Structure Chilled Water, Diesel Generators System, High Pressure Coolant Injection (HPCI), Main Steam, Reactor Core Isolation Cooling (RCIC), Residual Heat Removal (RHR), and Residual Heat Removal Service Water systems
- Standby Gas Treatment System (SGTS) – For SGTS, the inspection is also credited for managing loss of material due to microbiologically influenced corrosion (MIC) at the air-water interface with the mist eliminator loop seal, which is filled with raw water from the Service Water System, and galvanic corrosion at points of contact between the mist eliminator housing and the SGTS filter enclosure, where condensation and water pooling may occur.

Additionally, the Supplemental Piping/Tank Inspection detects and characterizes whether, and to what extent, a loss of material due to crevice and pitting corrosion is occurring (or is likely to occur) for stainless steel surfaces at air-water interfaces in the following systems:

- Condensate Transfer and Storage, Diesel Generators System, Diesel Fuel Oil, Fuel Pool Cooling and Cleanup, and Standby Liquid Control systems

The Supplemental Piping/Tank Inspection also detects and characterizes relative to the following to determine whether, and to what extent, degradation is occurring (or is likely to occur):

- Loss of material due to crevice, galvanic, general, and pitting corrosion on internal carbon steel surfaces within the scram discharge volume (piping and valve bodies) of the Control Rod Drive Hydraulic System, and within the air space of the condensate storage tanks and the Diesel Generator starting air receiver tanks and E diesel compressor skid air receiver tanks.

The Supplemental Piping/Tank Inspection also detects and characterizes relative to the following whether, and to what extent, degradation is occurring (or is likely to occur) for components exposed to a ventilation (diesel exhaust) environment:

- *Loss of material due to crevice, general, and pitting corrosion on the internal surfaces of carbon steel and cast iron piping, piping components, and turbocharger casings in the diesel exhaust system.*

- *Cracking and loss of material due to crevice and pitting corrosion on the internal surfaces of stainless steel piping components in the diesel exhaust system.*

The Supplemental Piping/Tank Inspection focuses on a limited but representative sample population of subject components at susceptible locations to be defined in the implementing documents, to include external piping surfaces and internal tank and/or piping surfaces at air-water interfaces, *and internal surfaces exposed to diesel exhaust. Air-water interface* Sample locations will include both treated water and raw water interfaces. The inspections provide symptomatic evidence of loss of material *and cracking* at the other susceptible, but possibly inaccessible, locations (such as the internal surfaces of piping) due to the similarities in materials and environmental conditions.

- Preventive Actions

No actions are taken as part of the Supplemental Piping/Tank Inspection to prevent aging effects or to mitigate aging degradation.

- Parameters Monitored or Inspected

The parameters inspected by the Supplemental Piping/Tank Inspection include wall thickness and visual evidence as measures of loss of material *and enhanced visual and/or volumetric inspection to detect cracking of stainless steel that is periodically exposed to diesel exhaust.* Inspections will be performed by qualified personnel using established nondestructive examination (NDE) techniques appropriate to the system/location being inspected.

- Detection of Aging Effects

The Supplemental Piping/Tank Inspection will use a combination of established volumetric (RT or UT) and visual (VT-1 or VT-3 or equivalent) examination techniques performed by qualified personnel on a sample population of subject components, to be determined by engineering evaluation, to identify evidence of a loss of material *or cracking* or to confirm a lack thereof. The results of the inspection will be applied to all of the components within the scope of the inspection.

For components exposed to an aggressive environment due to alternate wetting and drying at air-water interfaces, both internal and external, the sample population should include at least one each of the following locations:

- An external carbon steel piping surface at the air-water interface in the suppression pool (e.g., Main Steam safety relief valve discharge pipes, RCIC and HPCI pump

turbine exhaust pipes, RHR heat exchanger thermal relief discharge pipes, containment downcomer pipes)

- An internal stainless steel tank surface at the air-water interface (e.g., Fuel Pool Cooling and Cleanup skimmer surge tanks, Standby Liquid Control storage tanks, Control Structure Chilled Water expansion tanks)
- Spray array piping in the Residual Heat Removal Service Water System

For components exposed to a moist air internal environment, the sample population should include the following locations:

- Scram discharge volume piping or valve bodies in the Control Rod Drive Hydraulic System
- Suppression chamber spray header piping in the RHR System
- Starting air receiver tanks and E diesel compressor skid air receiver tanks in the Diesel Generators System (the sample will include at least 2 of the starting air receiver tanks)

For components exposed to an internal ventilation (diesel exhaust) environment, the sample population will include cast iron, carbon steel, and stainless steel components.

The Supplemental Piping/Tank Inspection activities will be conducted after the issuance of the renewed licenses and prior to the end of the current operating licenses for SSES Unit 1 and Unit 2, with sufficient time to implement programmatic oversight for the period of extended operation, if necessary. The activities will be conducted no earlier than 10 years prior to the end of the current operating licenses, so that aging effects with long incubation periods have time to manifest.

- **Monitoring and Trending**

No actions are taken as part of the Supplemental Piping/Tank Inspection to monitor and/or trend inspection results. This is a one-time inspection activity used to determine if, and to what extent, further actions, including monitoring and trending, may be required.

- **Acceptance Criteria**

Any indications or relevant conditions of degradation detected during the inspections will be compared to pre-determined acceptance criteria. If the acceptance criteria are not met, then the indications/conditions will be evaluated under the SSES Corrective

Action Program to determine whether they could result in a loss of component intended function during the period of extended operation.

- **Corrective Actions**

This element is common to SSES programs and activities that are credited with aging management during the period of extended operation and is discussed in Section B.1.3.

- **Confirmation Process**

This element is common to SSES programs and activities that are credited with aging management during the period of extended operation and is discussed in Section B.1.3.

- **Administrative Controls**

This element is common to SSES programs and activities that are credited with aging management during the period of extended operation and is discussed in Section B.1.3.

- **Operating Experience**

The Supplemental Piping/Tank Inspection is a new one-time inspection activity for which there is no operating experience indicating the need for an aging management program. However, inspection methods are consistent with accepted industry practices.

Inspections of the internal surfaces of diesel exhaust piping in 2007 found the materials to be in good condition with no evidence of degradation.

Required Enhancements

None.

Conclusion

Implementation of the Supplemental Piping/Tank Inspection will verify that there are no aging effects requiring management for the subject components or will identify appropriate corrective actions, possibly including programmatic oversight, to be taken to ensure that the component intended functions will be maintained consistent with the current licensing basis during the period of extended operation.