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LR-N10-0291

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

Hope Creek Generating Station
Facility Operating License No. NPF-57
NRC Docket No. 50-354

Subject: Supplement to PSEG response to RAIs B.2.1.28-01, B.2.1.37-01 and B.2.1.37-02 associated with the Hope Creek Generating Station License Renewal Application

Reference: 1. Letter from Mr. Paul J. Davison (PSEG Nuclear, LLC) to USNRC "Response to NRC Request for Additional Information, dated May 14, 2010, Related to the Aging Management Program Audit Associated with the Hope Creek Generating Station License Renewal Application", dated June 14 2010
2. Telephone conference call conducted June 21, 2010 between representatives of PSEG Nuclear, LLC and USNRC to discuss clarifications of RAI responses
3. Telephone conference call conducted July 22, 2010 between representatives of PSEG Nuclear, LLC and USNRC to discuss clarifications of RAI responses

In the reference 1 letter, PSEG Nuclear, LLC responded to requests for additional information related to Aging Management Programs as a result of the Aging Management Program Audit conducted in February 2010 associated with the Hope Creek Generating Station License Renewal Application (LRA). Contained within the reference 1 letter are the responses to RAIs B.2.1.28-01, B.2.1.37-01 and B.2.1.37-02. In the reference 2 phone conference, the NRC requested clarifications and enhancements to the RAI B.2.1.28-01 response. In the reference 3 phone conference, the NRC requested clarifications to the responses to RAI B.2.1.37-01 and B.2.1.37-02.

In this letter, PSEG Nuclear, LLC is supplementing the responses to RAIs B.2.1.28-01, B.2.1.37-01 and B.2.1.37-02. The revised text is contained within the Enclosure.

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License Renewal commitment number 28 is modified as shown in the License Renewal Commitment List extract, which is on pages 5 and 6 of the Enclosure. There are no other new or revised regulatory commitments being made in this letter.

If you have any questions, please contact Mr. Ali Fakhar, PSEG Manager - License Renewal, at 856-339-1646.

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

Executed on 8/9/10

Sincerely,



Robert C. Braun
Senior Vice President Operations
PSEG Nuclear LLC

Enclosure: Supplement to RAI B.2.1.28-01, B.2.1.37-01 and B.2.1.37-02 responses

cc: Regional Administrator – USNRC Region I
B. Brady, Project Manager, License Renewal – USNRC
R. Ennis, Project Manager - USNRC
NRC Senior Resident Inspector – Hope Creek
P. Mulligan, Manager IV, NJBNE
L. Marabella, Corporate Commitment Tracking Coordinator
T. Devik, Hope Creek Commitment Tracking Coordinator

Enclosure

Supplement to RAI B.2.1.28-01, B.2.1.37-01 and B.2.1.37-02 responses

The original RAI B.2.1.28-01 response provided in the Reference 1 letter is modified as shown in this Enclosure. Specifically, the enhancement sections for Appendix A, Appendix B and the A.5 License Renewal Commitment List that were part of Enclosure B and Enclosure C of the reference 1 letter are being replaced. Added text is shown in ***Bold Italics***, and deletions are shown with ~~strikethrough text~~.

The original RAI B.2.1.37-01 and B.2.1.37-02 responses provided in the Reference 1 letter, Enclosure A, are completely rewritten to provide the additional clarity requested. As such, this is considered a complete replacement of the original RAI responses and is shown in normal text.

PSEG Supplement to RAI B.2.1.28-01 Response:

A.2.1.28 ASME Section XI, Subsection IWE

The program will be enhanced to include:

1. Install an internal moisture barrier at the junction of the drywell concrete floor and the steel drywell shell prior to the period of extended operation.
2. Revise the Hope Creek ASME Section XI, Subsection IWE implementing documents to require inspection of the moisture barrier for loss of sealing in accordance with IWE 2500, after it is installed. The original design for Hope Creek did not require an internal moisture barrier at the junction of the drywell concrete floor and steel drywell shell.
3. Verify that the reactor cavity seal rupture drain lines are clear from blockage and that the monitoring instrumentation is functioning properly once prior to the period of extended operation, and one additional time during the first 10 years of the period of extended operation.
4. Verify that drains at the bottom of the drywell air gap are clear from blockage once prior to the period of extended operation, and one additional time during the first 10 years of the period of extended operation.
5. Investigate the source of any leakage detected by the reactor cavity seal rupture drain line instrumentation and assess its impact on the drywell shell.
6. Monitor the drains at the bottom of the drywell air gap **daily** for leakage in the event leakage is detected by the reactor cavity seal rupture drain line instrumentation.
7. Monitor penetration sleeve J13 ~~periodically~~ **daily** for water leakage when the reactor cavity is flooded up until corrective actions are taken to prevent leakage through J13.
8. Monitor the lower drywell air gap drains ~~periodically~~ **daily** for water leakage when the reactor cavity is flooded up.
9. Perform one-time UT thickness measurements from inside the drywell in the accessible area of the drywell shell directly below penetration sleeve J13. Inspection and acceptance criteria will be in accordance with IWE-2000 and IWE-3000 respectively. In the event significant corrosion is detected, the condition will be entered in the corrective action process for evaluation and extent of condition determination.
10. The cause of the reactor cavity water leakage will be investigated and repaired, if practical, before PEO. If repairs cannot be made prior to the PEO, the program will be enhanced to incorporate the following aging management activities, as recommended in the Final Interim Staff Guidance LR-ISG-2006-01.
 - a) Identify drywell surfaces requiring examination and implement augmented inspections for the period of extended operation in accordance with IWE-1240, as identified in Table IWE-2500-1, Examination Category E-C.

- b) Demonstrate through the use of augmented inspections that corrosion is not occurring or that corrosion is progressing so slowly that the age-related degradation will not jeopardize the intended function of the drywell shell through the period of extended operation.
- c) Develop a corrosion rate that can be inferred from past UT examinations. If degradation has occurred, evaluate the drywell shell using the developed corrosion rate to demonstrate that the drywell shell will have sufficient wall thickness to perform its intended function through the period of extended operation.

These enhancements will be implemented prior to the period of extended operation, with the inspections performed in accordance with the schedule described above.

B.2.1.28 ASME Section XI, Subsection IWE

Enhancements

Prior to the period of extended operation, the following enhancements will be implemented in the following program elements:

1. Install an internal moisture barrier at the junction of the drywell concrete floor and the steel drywell shell prior to the period of extended operation. **Program Elements Affected: Scope of Program (Element 1)**
2. Revise the Hope Creek ASME Section XI, Subsection IWE implementing documents to require inspection of the moisture barrier for loss of sealing in accordance with IWE 2500 after it is installed. The original design for Hope Creek did not require an internal moisture barrier at the junction of the drywell concrete floor and steel drywell shell. **Program Elements Affected: Scope of Program (Element 1)**
3. Verify that the reactor cavity seal rupture drain lines are clear from blockage and that the monitoring instrumentation is functioning properly once prior to the period of extended operation, and one additional time during the first 10 years of the period of extended operation. **Program Elements Affected: Scope of Program (Element 1)**
4. Verify that drains at the bottom of the drywell air gap are clear from blockage once prior to the period of extended operation, and one additional time during the first 10 years of the period of extended operation. **Program Elements Affected: Scope of Program (Element 1)**
5. Investigate the source of any leakage detected by the reactor cavity seal rupture drain line instrumentation and assess its impact on the drywell shell. **Program Elements Affected: Scope of Program (Element 1)**
6. Monitor the drains at the bottom of the drywell air gap **daily** for leakage in the event leakage is detected by the reactor cavity seal rupture drain line instrumentation. **Program Elements Affected: Scope of Program (Element 1)**

7. Monitor penetration sleeve J13 ~~periodically~~ **daily** for water leakage when the reactor cavity is flooded up until corrective actions are taken to prevent leakage through J13. **Program Elements Affected: Scope of Program (Element 1)**
8. Monitor the lower drywell air gap drains ~~periodically~~ **daily** for water leakage when the reactor cavity is flooded up. **Program Elements Affected: Scope of Program (Element 1)**
9. Perform one-time UT thickness measurements from inside the drywell in the accessible area of the drywell shell directly below penetration sleeve J13. Inspection and acceptance criteria will be in accordance with IWE-2000 and IWE-3000 respectively. In the event significant corrosion is detected, the condition will be entered in the corrective action process for evaluation and extent of condition determination. **Program Elements Affected: Detection of Aging Effects (Element 4)**
10. The cause of the reactor cavity water leakage will be investigated and repaired, if practical, before PEO. If repairs cannot be made prior to the PEO, the program will be enhanced to incorporate the following aging management activities, as recommended in the Final Interim Staff Guidance LR-ISG-2006-01. **Program Elements Affected: Detection of Aging Effects (Element 4), Monitoring and Trending (Element 5), Acceptance Criteria (Element 6), and Corrective Actions (Element 7).**
 - a. Identify drywell surfaces requiring examination and implement augmented inspections for the period of extended operation in accordance with IWE-1240, as identified in Table IWE-2500-1, Examination Category E-C. Program Elements Affected: Detection of Aging Effects (Element 4), and Monitoring and Trending (Element 5)
 - b. Demonstrate through the use of augmented inspections that corrosion is not occurring or that corrosion is progressing so slowly that the age-related degradation will not jeopardize the intended function of the drywell shell through the period of extended operation. Program Elements Affected: Corrective Actions (Element 7)
 - c. Develop a corrosion rate that can be inferred from past UT examinations. If degradation has occurred, evaluate the drywell shell using the developed corrosion rate to demonstrate that the drywell shell will have sufficient wall thickness to perform its intended function through the period of extended operation. Program Elements Affected: Acceptance Criteria (Element 6) and Corrective Actions (Element 7)

A.5 License Renewal Commitment List

NO.	PROGRAM OR TOPIC	COMMITMENT	UFSAR SUPPLEMENT LOCATION (LRA APP. A)	ENHANCEMENT OR IMPLEMENTATION SCHEDULE	SOURCE
28	ASME Section XI, Subsection IWE	<p>ASME Section XI, Subsection IWE is an existing program that will be enhanced to include:</p> <ol style="list-style-type: none"> 1. Install an internal moisture barrier at the junction of the drywell concrete floor and the steel drywell shell prior to the period of extended operation. 2. Require inspection of the moisture barrier for loss of sealing in accordance with IWE 2500 after it is installed. 3. Verify that the reactor cavity seal rupture drain lines are clear from blockage and that the monitoring instrumentation is functioning properly once prior to the period of extended operation, and one additional time during the first ten years of the period of extended operation. 4. Verify that drains at the bottom of the drywell air gap are clear from blockage once prior to the period of extended operation, and one additional time during the first ten years of the period of extended operation. 5. Investigate the source of any leakage detected by the reactor cavity seal rupture drain line instrumentation and assess its impact on the drywell shell. 6. Monitor the drains at the bottom of the drywell air gap daily for leakage in the event leakage is detected by the reactor cavity seal rupture drain line instrumentation. 7. Monitor penetration sleeve J13 periodically daily for water leakage when the reactor cavity is flooded up until corrective actions are taken to prevent leakage through J13. 	A.2.1.28	<p>Program to be enhanced prior to the period of extended operation.</p> <p>Inspection schedule identified in commitment.</p>	<p>Section B.2.1.28</p> <p>Hope Creek Letter LR-N10-0190 Hope Creek Letter LR-N10-0291 RAI B.2.1.28-01</p>

NO.	PROGRAM OR TOPIC	COMMITMENT	UFSAR SUPPLEMENT LOCATION (LRA APP. A)	ENHANCEMENT OR IMPLEMENTATION SCHEDULE	SOURCE
		thickness to perform its intended function through the period of extended operation.			

PSEG Supplement to RAI B.2.1.37-01 Response

1. The Hope Creek LRA AMP B.2.1.37 - Inaccessible Medium Voltage Cables Not Subject to 10 CFR 50.49 Environmental Qualification Requirements, is a new program that will be implemented at Hope Creek prior to the period of extended operation. This program includes (1) testing of in-scope, inaccessible medium voltage cables subject to significant moisture and significant voltage and (2) inspection of cable vaults, including subsequent pumping of accumulated water if required, as a preventive measure to minimize the potential exposure of in-scope cables to significant moisture.

The current plan is to take actions during the current licensing period to establish the conditions necessary to implement Hope Creek LRA AMP B.2.1.37.

Current Licensing Period Activities

Specifically, each of the in-scope service water cables was tested between September and November 2009. The cable test results determined that all of the in-scope service water cable insulation is in good condition. In-scope service water cable testing will continue to be conducted periodically during their associated service water pump motor outages. The cable test frequency may be adjusted based on data trending in accordance with the corrective action process. Additional discussion related to the in-scope service water cable testing is provided in response to item 2.d below.

Plant-specific operating experience has identified cable vault water accumulation resulting in exposure of the in-scope service water cables to significant moisture. This condition was reported and evaluated in the corrective action process. Based on this identified operating experience and in accordance with the corrective action process, Hope Creek has commenced periodic inspections of the in-scope service water cable vaults, and removing accumulated water as required to monitor the in-scope service water cables. The service water cable vaults are currently inspected for water accumulation weekly. Trending and characterizing the water intrusion rate allow adjustments to the service water cable vault inspection frequency in accordance with the corrective action process.

Hope Creek LRA AMP B.2.1.37 Implementation Plan

Prior to the period of extended operation, additional service water cable vault inspections will be performed and the frequency of inspections for accumulated water will be adjusted based on inspection results to ensure that the in-scope service water cables are not exposed to significant moisture. The maximum time between inspections will be no longer than two years, which meets the recommended frequency in GALL AMP XI.E3. Additional discussion related to the service water cable vault inspections is provided in response to item 2.a below.

The Hope Creek LRA AMP B.2.1.37 meets GALL AMP XI.E3 for the in-scope service water cables because initial cable tests have been implemented and will be periodically performed (not to exceed ten years) and, prior to the period of extended operation, the frequency of inspections for accumulated water will be established (not to exceed two years) based on inspection results to ensure that the in-scope service water cables are not exposed to significant moisture during the period of extended operation.

The Hope Creek LRA Appendix A, Section A.2.1 37 and Appendix B, Section B.2.1.37 are revised as a result of the clarification described above, as shown in Enclosure B of this letter. The Hope Creek LRA Table A.5 Commitment List, line item 37, is revised as a result of the clarification described above, as shown in Enclosure C of this letter.

2. Additional questions:

- a. The Hope Creek LRA AMP B.2.1.37 is a new program that meets GALL AMP XI.E3. GALL AMP XI.E3 states, in part, "in this aging management program, periodic actions are taken to prevent cables from being exposed to significant moisture, such as inspecting for water collection in cable manholes, and draining water, as needed."

Current Licensing Period Activities

Specifically, between June and September 2009, all cable vaults (MH-102, MH-103, and MH-105) containing in-scope service water cables were inspected for the first time since initial construction in the 1980's. All cables within the service water cable vaults were discovered submerged in water. The cable vaults were dewatered. This condition was reported and evaluated in the corrective action process.

As a result of this operating experience, physical modifications have been made to the service water cable vault lids to allow more frequent inspections and water pumping. This cable vault lid feature also accommodates future adjustments in inspection frequency including assessing the cable condition as a result of rain or other event driven occurrences as directed by station procedures (e.g. hurricane, tropical storm, or coastal flooding warning issued for the site area prompts the inspection and assessment of the cable vaults for water accumulation).

As a result of this operating experience, a recurring task has been initiated to inspect the service water cable vaults for water accumulation, and dewater as required. Results of the inspections and dewatering activities are being monitored so that corrective actions can be planned to ensure that the in-scope service water cables are not exposed to significant moisture. Trending and characterizing the water intrusion rate allow adjustments to the service water cable vault inspection frequency in accordance with the corrective action process.

Hope Creek LRA AMP B.2.1.37 Implementation Plan

The current licensing period activities and lessons learned will be used to implement the Hope Creek LRA AMP B.2.1.37, Inaccessible Medium Voltage Cables Not Subject to 10 CFR 50.49 Environmental Qualification Requirements at Hope Creek prior to the period of extended operation.

Specifically, prior to the period of extended operation, additional service water cable vault inspections will be performed and the frequency of inspections for accumulated water will be adjusted based on inspection results to ensure that the in-scope service water cables are not exposed to significant moisture. The maximum time between inspections will be no longer than two years, which meets the recommended frequency in GALL AMP XI.E3.

This description demonstrates how plant operating experience was incorporated into Hope Creek LRA AMP B.2.1.37 to minimize exposure of in-scope inaccessible medium voltage cables to significant moisture during the period of extended operation.

- b. The initial inspection of all service water cable vaults (MH-102, MH-103, and MH-105) found the service water cables submerged in water.

Current Licensing Period Activities

As a result of the operating experience from the initial service water cable vault inspections, physical modifications have been made to the service water cable vault lids. The modified service water cable vault lid feature accommodates more frequent inspections and water pumping to ensure that the in-scope service water cables are not exposed to significant moisture. The modified service water cable vault lid feature also enables the cable condition to be assessed as a result of rain or other event driven occurrences as directed by station procedures (e.g. hurricane, tropical storm, or coastal flooding warning issued for the site area prompts the inspection and assessment of the cable vaults for water accumulation).

A recurring task has been initiated to inspect the service water cable vaults for water accumulation, and dewater as required. Results of the inspections and dewatering activities are being monitored so that corrective actions can be planned to ensure that the in-scope service water cables are not exposed to significant moisture. Trending and characterizing the water intrusion rate allow adjustments to the service water cable vault inspection frequency in accordance with the corrective action process.

Hope Creek LRA AMP B.2.1.37 Implementation Plan

The current licensing period activities and lessons learned will be used to implement the Hope Creek LRA AMP B.2.1.37, Inaccessible Medium Voltage Cables Not Subject to 10 CFR 50.49 Environmental Qualification Requirements at Hope Creek prior to the period of extended operation.

Specifically, prior to the period of extended operation, additional service water cable vault inspections will be performed and the frequency of inspections for accumulated water will be adjusted based on inspection results to ensure that the in-scope service water cables are not exposed to significant moisture. The maximum time between inspections will be no longer than two years, which meets the recommended frequency in GALL AMP XI.E3.

- c. Corrective actions have been taken to address the submerged cable conditions and cable support structure degradation identified through service water cable vault inspections. Specifically, the submerged cable condition was reported and evaluated in the corrective action process. The service water cable vaults were dewatered. No cable defects or conditions adverse to quality were observed for all cables within vaults, thus no corrective actions are required regarding the cables.

Lid seals exist for all service water cable vaults. Degradation of the lid seals could not be established since they were destroyed when the lid was lifted. Corrective action was taken to install new lid seals.

No concrete related issues or conditions adverse to quality were observed within the service water cable vaults, thus no corrective actions are required regarding the service water cable vault structures.

Most of the cable supports experienced failure of the galvanized steel surface coating, but no degradation of the structural integrity of the steel structure was observed. Corrective actions have been initiated in accordance with the corrective action process to repair the galvanized steel coating on the cable supports.

- d. As stated in Hope Creek LRA Section B.2.1.37, all "in scope, non-EQ, inaccessible medium voltage cables subject to significant moisture and voltage will be tested as part of this aging management program. These medium voltage cables will be tested using a proven test for detecting deterioration of the insulation system due to wetting, such as power factor, partial discharge, or polarization index, as described in EPRI TR-103834-P1-2, or other testing that is state-of-the-art at the time the test is performed. Cable testing will be performed at least once every ten years. The first tests will be completed prior to the period of the extended operation."

Current Licensing Period Activities

Operating experience shows that there have been no in-scope inaccessible medium voltage cable failures at Hope Creek. Each of the in-scope service water cables were tested (tan-delta) between September and November 2009. The cable test results determined that the in-scope service water cable insulation is in good condition. Testing will continue to be conducted periodically to trend and characterize the service water cable insulation condition. The current plan is to test the service water cables every 18 months during the service water pump outages. The cable test frequency may be adjusted based on data trending in accordance with the corrective action process.

Hope Creek LRA AMP B.2.1.37 Implementation Plan

The current licensing period activities and lessons learned will be used to implement the Hope Creek LRA AMP B.2.1.37, Inaccessible Medium Voltage Cables Not Subject to 10 CFR 50.49 Environmental Qualification Requirements at Hope Creek prior to the period of extended operation. Specifically, the cable test frequency may be adjusted based on data trending, however, not to exceed ten years.

This discussion demonstrates how the cable testing/frequency will provide reasonable assurance that the intended functions of inaccessible medium-voltage cables that are not subject to the environmental qualification requirements of 10 CFR 50.49 and are exposed to adverse localized environments caused by moisture will be maintained consistent with the current licensing basis through the period of extended operation.

PSEG Supplement to RAI B.2.1.37-02 Response

1. The Hope Creek LRA AMP B.2.1.37 - Inaccessible Medium Voltage Cables Not Subject to 10 CFR 50.49 Environmental Qualification Requirements, is a new program that is currently in the process of being implemented at Hope Creek. This program includes (1) testing of in-scope, inaccessible medium voltage cables subject to significant moisture and significant voltage and (2) inspection of cable manholes, including subsequent pumping of accumulated water if required, as a preventive measure to minimize the potential exposure of in-scope cables to significant moisture.

The current plan is to take actions during the current licensing period to establish the conditions necessary to implement Hope Creek LRA AMP B.2.1.37.

Current Licensing Period Activities

Specifically, Hope Creek will perform cable testing of the in-scope SBO recovery cables during their associated transformer outages. The first test is scheduled for October 2010. The current plan is to test the in-scope SBO recovery cable periodically during their associated transformer outages. The cable test frequency may be adjusted based on data trending. Additional discussion related to the in-scope SBO recovery cable testing is provided in response to item 2.c below.

Plant-specific operating experience has identified cable vault water accumulation resulting in exposure of the in-scope SBO recovery cables to significant moisture. This condition was reported and evaluated in the corrective action process. Based on this identified operating experience and in accordance with the corrective action process, Hope Creek has commenced periodic (18 months) inspections of the in-scope SBO recovery cable manholes / pits and removing accumulated water as required to monitor the in-scope SBO recovery cables.

Hope Creek LRA AMP B.2.1.37 Implementation Plan

Prior to the period of extended operation, additional SBO recovery cable manhole inspections will be performed and the frequency of inspections for accumulated water will be adjusted based on inspection results to ensure that the in-scope SBO recovery cables are not exposed to significant moisture. The maximum time between inspections will be no longer than two years, which meets the recommended frequency in GALL AMP XI.E3. Additional discussion related to the SBO recovery cable manhole inspections is provided in response to item 2.a below.

The Hope Creek LRA AMP B.2.1.37 meets GALL AMP XI.E3 for the in-scope SBO recovery cables because prior to the period of extended operation, cable tests will be periodically performed (not to exceed ten years) and, prior to the period of extended operation, the frequency of inspections for accumulated water will be established (not to exceed two years) based on inspection results to ensure that the in-scope SBO recovery cables are not exposed to significant moisture during the period of extended operation.

The Hope Creek LRA Appendix A, Section A.2.1 37 and Appendix B, Section B.2.1.37 are revised as a result of the clarification described above, as shown in Enclosure B of this letter. The Hope Creek LRA Table A.5 Commitment List, line item 37, is revised as a result of the clarification described above, as shown in Enclosure C of this letter.

2. Additional questions:

- a. The Hope Creek LRA AMP B.2.1.37 is a new program that meets GALL AMP XI.E3. GALL AMP XI.E3 states, in part, "in this aging management program, periodic actions are taken to prevent cables from being exposed to significant moisture, such as inspecting for water collection in cable manholes, and draining water, as needed."

Current Licensing Period Activities

Specifically, there are five (5) manholes and two (2) cable pits where in-scope SBO recovery cables can be inspected for water submergence. Three manholes (15MM0D06A, 15MM0B08A, and 15MM0D08B) and one cable pit (AX501) have been inspected between April and June 2009. Two of the three manhole inspections and the cable pit inspection identified submerged cables. The manholes were dewatered. This condition was reported and evaluated in the corrective action process. The inspection of the remaining two manholes (15MM0D06, 15MM0D08), which are located directly below the Station Service Transformers, are planned during the next respective transformer outages. Manhole 15MM0D08 is scheduled for inspection in October 2010. Manhole 15MM0D06 is scheduled for inspection in April 2012. The remaining cable pit BX501 is scheduled for inspection in October 2010.

As a result of this operating experience, actions have been initiated to establish recurring tasks to open, inspect, and dewater SBO recovery cable manholes and cable pits, as required to monitor the in-scope SBO recovery cables. The switchyard cable manhole configuration enables the cable condition to be assessed as a result of rain or other event driven occurrences as directed by station procedures (e.g. hurricane, tropical storm, or coastal flooding warning issued for the site area prompts the inspection and assessment of the cable manholes / pits for accumulated water). Results of the inspections and dewatering activities will be monitored so that corrective actions can be planned to ensure that the in-scope SBO recovery cables are not exposed to significant moisture. Trending and characterizing the water intrusion rate allow for adjustments to the SBO recovery cable manhole inspection frequency in accordance with the corrective action process.

Hope Creek LRA AMP B.2.1.37 Implementation Plan

The current licensing period activities and lessons learned will be used to implement the Hope Creek LRA AMP B.2.1.37, Inaccessible Medium Voltage Cables Not Subject to 10 CFR 50.49 Environmental Qualification Requirements at Hope Creek prior to the period of extended operation.

Specifically, prior to the period of extended operation, additional SBO recovery cable manhole and cable pit inspections will be performed and the frequency of inspections for accumulated water will be adjusted based on inspection results to ensure that the in-scope SBO recovery cables are not exposed to significant moisture. The maximum time between inspections will be no longer than two years, which meets the recommended frequency in GALL AMP XI.E3.

This description demonstrates how plant operating experience was incorporated into Hope Creek LRA AMP B.2.1.37 to minimize exposure of in-scope inaccessible medium voltage cables to significant moisture during the period of extended operation.

- b. Between April and July 2009, three manholes (15MM0D06A, 15MM0B08A, and 15MM0D08B) and one cable pit (AX501) containing inaccessible medium voltage SBO recovery cables were inspected for accumulated water.

No cable defects or conditions adverse to quality were observed for any cable within these three manholes or cable pit, thus no corrective actions are required regarding the cables.

No concrete or cable support related issues or conditions adverse to quality was observed within these three manholes or cable pit, thus no corrective actions are required regarding the cable manhole or cable pit structures.

The AX501 cable pit showed evidence of a cable conduit failure due to the presence of sand and gravel in the cable pit and in the conduit. This condition was reported in the corrective action process. Repairs to the conduit are planned for April 2012.

- c. As stated in Hope Creek LRA Section B.2.1.37, all "in scope, non-EQ, inaccessible medium voltage cables subject to significant moisture and voltage will be tested as part of this aging management program. These medium voltage cables will be tested using a proven test for detecting deterioration of the insulation system due to wetting, such as power factor, partial discharge, or polarization index, as described in EPRI TR-103834-P1-2, or other testing that is state-of-the-art at the time the test is performed. Cable testing will be performed at least once every ten years. The first tests will be completed prior to the period of the extended operation." This includes the in-scope inaccessible medium voltage SBO recovery cables.

Current Licensing Period Activities

Operating experience shows that there have been no in-scope inaccessible medium voltage cable failures at Hope Creek. Hope Creek is planning to perform tan-delta cable testing. The current plan is to test the SBO recovery cable every three years during the Station Service Transformer outages. Testing will continue to be conducted periodically to trend and characterize the SBO recovery cable insulation condition. The first in-scope SBO recovery cable tests are scheduled for October 2010. The cable test frequency may be adjusted based on data trending in accordance with the corrective action process.

Hope Creek LRA AMP B.2.1.37 Implementation Plan

The current licensing period activities and lessons learned will be used to implement the Hope Creek LRA AMP B.2.1.37, Inaccessible Medium Voltage Cables Not Subject to 10 CFR 50.49 Environmental Qualification Requirements at Hope Creek prior to the period of extended operation. Specifically, the cable test frequency may be adjusted based on data trending, however, not to exceed ten years.

This discussion demonstrates how the cable testing/frequency will provide reasonable assurance that the intended functions of inaccessible medium-voltage cables that are not subject to the environmental qualification requirements of 10 CFR 50.49 and are exposed to adverse localized environments caused by moisture will be maintained consistent with the current licensing basis through the period of extended operation.