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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: Response to NRC Request for Additional Information, dated April 27, 2010, Related to Scoping and Screening Methodology, Section 2.1 of the Hope Creek Generating Station License Renewal Application

Reference: Letter from Mr. Donnie Ashley (USNRC) to Mr. Thomas Joyce (PSEG Nuclear, LLC) "HOPE CREEK GENERATING STATION, LICENSE RENEWAL APPLICATION - REQUEST FOR ADDITIONAL INFORMATION FOR SECTION 2.1, SCOPING AND SCREENING METHODOLOGY (TAC NO. ME1832)", dated April 27, 2010

In the referenced letter, the NRC requested additional information related to Scoping and Screening Methodology, Section 2.1 of the Hope Creek Generating Station License Renewal Application (LRA). Enclosed is the response to this request for additional information.

This letter and its enclosure contain no regulatory commitments.

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

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NRR

MAY 24 2010

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

Executed on 5-24-2010

Sincerely,

Paul J. Davison

Paul J. Davison
Vice President, Operations Support
PSEG Nuclear LLC

Enclosure: Response to Request for Additional Information

cc: S. Collins, 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

Response to Request for Additional Information related to Scoping and Screening Methodology, Section 2.1 of the Hope Creek Generating Station License Renewal Application (LRA)

RAI 2.1-1

Background:

Pursuant to 10 CFR 54.4(a)(1), the applicant must consider the following plant systems, structures, and components within the scope of license renewal:

> Safety-related systems, structures, and components which are those relied upon to remain functional during and following design-basis events (as defined in 10 CFR 50.49 (b)(1)) to ensure the following functions -
>
> > (i) The integrity of the reactor coolant pressure boundary;
> > (ii) The capability to shut down the reactor and maintain it in a safe shutdown condition; or
> > (iii) The capability to prevent or mitigate the consequences of accidents which could result in potential offsite exposures comparable to those referred to in 10 CFR 50.34(a)(1), 10 CFR 50.67(b)(2), or 10 CFR 100.11, as applicable.

License Renewal Application (LRA) Section 2.1.3.2, "Identification of Safety-Related Systems and Structures," states:

> Safety-related systems and structures are included in the scope of license renewal in accordance with 10 CFR 54.4(a)(1) scoping criterion. Hope Creek systems and structures that have been classified as safety-related are identified as "Q" in the controlled quality classification data field in the Systems, Applications and Products in Data Processing (SAP) database. Hope Creek quality classification procedures were reviewed against the license renewal "safety-related" scoping criterion in 10 CFR 54.4(a)(1), to confirm that Hope Creek safety-related classifications are consistent with license renewal requirements. This review is included in a technical basis document. The basis document also provides a summary list of the systems and structures that are safety-related at Hope Creek. These systems and structures were included in the scope of license renewal under the 10 CFR 54.4(a)(1) scoping criteria.

Issues:

1. During review of the LRA and performance of the scoping and screening methodology audit, performed on-site January 11-21, 2010, the staff determined that the scoping implementing documents discuss the use of the classification "SR," listed in the component classification field in the SAP, as an initial identifier of safety-related systems. In addition, the classification "Q," listed in the component classification field in the SAP, was also used to determine whether systems identified as safety-related in the SAP would be included within the scope of license renewal in accordance with 10 CFR

54.4(a)(1). The staff determined that a detailed description of the process would be required for the staff to complete its review.

Request:

The staff requests that the applicant provide a detailed description of the use of all component classifications in the SAP, including "SR" and "Q", that were used to identify safety-related systems to be included within the scope of license renewal or used to exclude systems from within the scope of license renewal.

2. During review of the LRA and performance of the scoping and screening methodology audit, performed on-site January 11-21, 2010, the staff determined that the 10 CFR 54.4(a)(1) implementing document discusses incorrect or conservative SAP component data module (CDM) classifications. The implementing procedure provided the process and results of the applicant's determination that certain systems do not perform safety-related functions as defined in 10 CFR 54.4(a)(1), and were, therefore, not included within the scope of license renewal. The staff determined that a detailed description of the process would be required for the staff to complete its review.

   Request:

   The staff requests that the applicant provide a detailed description of the process used to evaluate systems or components, identified as safety-related in SAP, and to conclude that the SAP component data module (CDM) classifications were conservative or incorrect and that the systems or components do not perform safety-related functions as defined in 10 CFR 54.4(a)(1).

The staff requests that the applicant perform a review of these issues and indicate if the review concludes that use of the scoping methodology precluded the identification of structures, systems and components (SSCs) which should have included within the scope of license renewal in accordance with 10 CFR 54.4(a). Describe any additional scoping evaluations to be performed to address the 10 CFR 54.4(a) criteria. As part of your response, list any additional SSCs included within the scope as a result of your efforts, and list those structures and components for which aging management reviews were conducted or any additional information related to material and environment combinations. For each structure and component, describe the aging management programs, as applicable, to be credited for managing the identified aging effects.

PSEG Response:

1. The following is a detailed description of component classifications in the SAP database and a detailed process description of how SAP component classifications were used to identify safety-related systems to be included within the scope of license renewal. The basis to exclude some systems, identified as having safety-related components in the SAP database, from the list of systems to be included in scope under 10 CFR 54.4(a)(1) criteria, is also described.

Component Classifications in the SAP Database

The SAP database is a component database. The SAP database is organized to include system level records that allow components to be managed as a system. System level records in SAP are not intended to contain detailed design information and do not include system level safety classifications.

The SAP database does include detailed component design information, including component level safety classification information. Predetermined classification categories are used to identify specific requirements associated with the component, including requirements for design, operation, maintenance, quality assurance or regulatory compliance.

The component classification information contained in five of the SAP classification categories is determined in accordance with the Hope Creek component classification methodology procedure HC.DE-AP.ZZ-0060(Q), Functional Classification Methodology for Component Data Module Functional Locations within SAP/R3 for Hope Creek Generating Station. These five categories are identified in the following table, which indicates the classification category description included in the procedure and the corresponding SAP classification category description:

Classification Procedure Category Description HC.DE-AP.ZZ-0060(Q)	**SAP Category Description**
Quality Assurance Requirements	Safety related QA related
Quality Group Classification	Safety Class/Quality Grp Code
10CFR21 Applicability	QA Required
Environmental Qualification	Environmental Qualification
Seismic Qualification	Seismic Classification

The "Quality Assurance Requirements" classification category, described in SAP as "Safety related QA related," is the only classification category used to designate safety-related "Q" components at Hope Creek, and is the only classification category used in the Hope Creek scoping methodology to confirm that all safety-related systems were properly identified and included in scope in accordance with 10 CFR 54.4 (a)(1) criteria. This classification category includes safety-related components that are designated "Q" in accordance with the classification procedure, to indicate that the requirements of 10 CFR 50 Appendix B "Quality Assurance Criteria for Nuclear Power Plant and Fuel Reprocessing Plants" apply. The "Q" designation is based on the Hope Creek quality classification procedure definition of safety-related, as described in LRA Section 2.1.3.2.

In addition to the "Q" designation, other possible designations in this classification category are Qs, Qsh, F, R and NA. The classification designation "SR" is only applicable to the Salem

Generating Station and is not addressed in the Hope Creek component classification procedure. A component designated as Qs, Qsh, F, R or NA indicates that the component is not safety-related and the requirements of 10 CFR 50 Appendix B "Quality Assurance Criteria for Nuclear Power Plant and Fuel Reprocessing Plants" do not apply.

As shown in the table, the SAP classification category "Safety related QA related" includes the "Quality Assurance Requirements" classifications as determined using the Hope Creek classification procedure. Components that have been classified as safety-related in accordance with the procedure are then designated as "Q" in the SAP database by marking the associated "Q" checkbox in the database. When the "Q" checkbox is marked, the "Safety related QA related" classification category displays the classification value as "Q listed per HC.DE-AP.ZZ-0060." This classification value is displayed on the component classification screen in SAP. The list of components designated with this SAP classification comprises the Hope Creek component Q-list.

Identification of Safety-Related Systems – Detailed Process Description

The SAP component safety classification designations described above were used in the Hope Creek scoping process to confirm that all safety-related systems were properly identified and included in scope in accordance with 10 CFR 54.4 (a)(1) criteria. The process is documented in HC-SSBD-A1, 10 CFR 54.4(a)(1) Safety-Related Systems Scoping and Screening Basis Document. The process resulted in a confirmed list of safety-related Hope Creek systems included in the scope of license renewal in accordance with 10 CFR 54.4 (a)(1) criteria.

The first step was to obtain a list of Hope Creek system and associated SAP system codes from procedure CC-AA-103-5408, SAP Users Guide to Master Data Input. The system list is included as a table in the basis document.

The second step was to download a list of safety-related components from the SAP database. Specifically, all of the Hope Creek components in the SAP database that had the "Safety related QA related" classification field coded "Q" (Q Listed per HC.DE-AP.ZZ-0060) were downloaded into an Excel database.

The third step was to review the downloaded list of safety-related components to determine which Hope Creek systems contained safety-related components. The table of Hope Creek systems was updated to identify any systems that contained safety-related components.

The fourth step was to review this initial list of systems that contained safety-related components against other source documents to ensure that a safety-related system classification is consistent with system information in the current licensing basis (CLB). The two primary source documents for system safety classification information are the UFSAR and the Hope Creek Maintenance Rule Procedure HC.ER-DG.ZZ-0002 "System Functional Level Maintenance Rule Scoping vs. Risk Reference". This review identified several systems that included individual safety-related components; however these same systems were not identified as having safety-related intended functions in other CLB source documents. Thus, it was determined that these systems should not be classified as safety-related. The basis for this determination, including a detailed evaluation of the SAP components that were assigned to the system and classified safety-related, is included in the technical basis document. The process used to perform these system and component evaluations, including the technical basis, is described in the response to issue 2, below.

The final step was to update the table of Hope Creek systems to identify the safety-related systems that will be included in the scope of license renewal in accordance with 10 CFR 54.4 (a)(1) scoping criteria. The final list is included in the HC-SSBD-A1 basis document as Attachment 1.

2. The following is a detailed description of the process used to evaluate systems and components, including the use of SAP component safety classifications and the conclusion that some component classifications identified as safety-related in SAP were conservative or incorrect and that the systems or components do not perform safety-related functions as defined in 10 CFR 54.4(a)(1).

Detailed Process Description

As described in LRA Section 2.1.5, the license renewal scoping process was initially performed at the system level based on the 10 CFR 54.4(a) scoping criteria. System intended functions that are the basis for including the system in scope are identified from CLB source documentation described in LRA Section 2.1.2. The in scope boundaries for the system is determined based on the identified intended functions, and is the basis for identification of the in scope components.

As described in LRA Section 2.1.5.1:

> *Safety-related classifications for systems and structures are based on system and structure descriptions and analyses in the UFSAR, or on design basis documents such as engineering drawings, evaluations or calculations. Safety-related structures are those structures listed in the UFSAR and classified as Seismic Category I. Systems and structures that are identified as safety-related in the UFSAR or in design basis documents have been classified as satisfying criteria of 10 CFR 54.4(a)(1) and have been included within the scope of license renewal.*

At Hope Creek, the SAP database identifies components that are classified as safety-related. The criteria for safety-related classification is consistent with the 10 CFR 54.4(a)(1) scoping criteria. Components in the SAP database are assigned to specific systems, allowing the component data to be filtered to identify systems that contain safety-related components. If a system contains safety-related components, the system would be expected to be included in scope under 10 CFR 54.4(a)(1) criteria. Availability of this component data provided an additional confirmation of safety-related systems identified from CLB documents, as described previously. The comparison of the Hope Creek safety-related classification criteria to the 10 CFR 54.4 (a)(1) scoping criteria is documented in the 10 CFR 54.4(a)(1) technical basis document and summarized in LRA Section 2.1.3.2. The subsequent assessment of SAP component safety classifications by system is also included in the basis document, as described in response to issue 1, above.

It was recognized that this methodology could cause a system to be incorrectly classified as safety-related for license renewal if component classification or component system assignment errors exist in SAP. It was also recognized that for some components in SAP, the component safety-related classification basis is unrelated to the system in which it is assigned in SAP. For example, electrical components in nonsafety-related mechanical systems will be classified safety-related if electrical faults can result in degradation of a safety-related (1E) power source.

The component safety-related classification is functionally related to the 1E power supply system, and is not functionally related to the mechanical system. These electrical components are evaluated for license renewal with the associated Class 1E electrical systems, which are also included in scope as safety-related systems.

Results of the SAP component data review were compared to the systems identified as safety-related in the CLB references described above. Some safety-related components were identified in several systems that were not identified as safety-related or identified as having safety-related intended functions in other CLB documents, such as the UFSAR and Maintenance Rule system scoping documents. The components in these systems that were classified as safety-related in SAP were reviewed in detail, and it was determined that these systems should not be identified as safety-related. These determinations are described in detail in the technical basis document.

Some cases involved electrical components that were classified as safety-related based on the requirement to protect the connected safety-related power supply system. These safety-related electrical component classifications are not functionally related to the mechanical system, and do not result in safety-related functions for the mechanical system. These electrical components are evaluated for license renewal with the associated Class 1E electrical systems, which are also included in scope as safety-related systems. This case is the result of how some electrical components are assigned to mechanical systems in SAP for plant operation or maintenance purposes, and is not considered a discrepancy.

The remaining cases are associated with SAP component classification discrepancies such as incorrect safety classification, incorrect system assignment or invalid SAP component identification. In each case, the correct safety classification, system assignment or other design information could be verified from other CLB documents. Changes to system or component safety classifications in the CLB were not required as part of the license renewal scoping process.

The identified discrepancies were determined to be SAP errors and are not plant design issues. HC.DE-AP.ZZ-0060(Q), Functional Classification Methodology for Component Data Module Functional Locations within SAP/R3 for Hope Creek Generating Station, Section 4.1.2 establishes a document hierarchy with respect to component or system classification. The UFSAR is superior to design drawings, and design drawings are superior to SAP component information. Actions were initiated to notify station personnel and correct the SAP data. SAP errors considered non-conservative or otherwise adverse to quality were entered into the Corrective Action Program to correct the error.

Conclusion Summary

The detailed scoping methodology description provided in this response demonstrates that the PSEG Nuclear scoping methodology did not preclude the identification of any structures, systems and components (SSCs) that should have been included within the scope of license renewal in accordance with 10 CFR 54.4(a). No additional scoping evaluations were required to address the 10 CFR 54.4(a) criteria, and no additional SSCs were included in scope.