UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

March 22, 2016

LICENSEE: PSEG Nuclear LLC

FACILITY: Hope Creek Generating Station

SUBJECT: SUMMARY OF FEBRUARY 16, 2016, TELECONFERENCE WITH PSEG NUCLEAR LLC ON THE UPGRADE OF HOPE CREEK GENERATING STATION'S POWER RANGE NEUTRON MONITORING SYSTEM TO A DIGITAL POWER RANGE NEUTRON MONITORING SYSTEM (CAC NO. MF6768)

On February 16, 2016, a Category 1 public teleconference was held between the U.S. Nuclear Regulatory Commission (NRC) and representatives of PSEG Nuclear LLC (PSEG, the licensee). The purpose of the teleconference was to discuss the license amendment request (LAR) submitted by PSEG on September 21, 2015,[1] which would allow for the replacement and upgrade of the existing analog Average Power Range Monitor (APRM) sub-system of the Neutron Monitoring System with General Electric-Hitachi (GEH) digital Nuclear Measurement Analysis and Control Power Range Neutron Monitoring (PRNM) system. The PRNM upgrade also includes Oscillation Power Range Monitor capability and will allow full APRM, Rod Block Monitor, Technical Specification Improvement Program implementation, and will include application of Technical Specification Task Force Traveler-493, "Clarify Application of Setpoint Methodology for LSSS Functions," to affected PRNM functions. The teleconference notice and agenda, dated February 5, 2016, is available in the Agencywide Documents Access and Management System (ADAMS) at Accession No. ML16036A154. A list of attendees is provided as Enclosure 1.

The teleconference was one in a series of publicly noticed teleconferences to be held periodically to discuss the issues associated with the NRC staff's LAR review. Preliminary issues that the NRC staff identified during the initial review, and the licensee's responses to the preliminary issues, were discussed during the teleconference. The list of preliminary issues is provided in Enclosure 2.

Highlights from the February 16, 2016, teleconference include the following:

- The NRC staff will perform an audit of GEH, PSEG's vendor for this LAR. The NRC staff is targeting spring 2016 for the audit.

- The roadmap included in the LAR was helpful for the staff, and a similar document will be provided with the Phase 2 submittal.

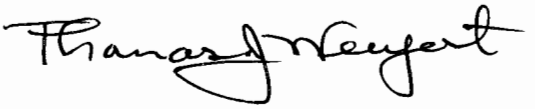
[1] ADAMS Accession No. ML15265A223

- The NRC staff will provide audit dates and a list of documents to be placed in the reading room. In addition, the NRC staff will update the list of preliminary issues for the March meeting, including closing several items.

- The next teleconference will be on March 15, 2016.

Members of the public were in attendance. Public Meeting Feedback forms were not received. No comments from the public were received.

Please direct any inquiries to me at 301-415-4037 or Thomas.Wengert@nrc.gov.



Thomas Wengert, Senior Project Manager
Plant Licensing Branch I-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-354

Enclosures:
1. List of Attendees
2. Staff Identified Issues

cc w/enclosures: Distribution via Listserv

LIST OF ATTENDEES

FEBRUARY 16, 2016 TELECONFERENCE WITH PSEG NUCLEAR LLC

DIGITAL UPGRADE FOR HOPE CREEK GENERATING STATION

DOCKET NO. 50-354

| NAME | ORGANIZATION |
|---|---|
| C. Parker | NRC |
| R. Alvarado | NRC |
| V. Huckabay | NRC |
| M. Lewis | Public |
| P. Duke | PSEG |
| B. Thomas | PSEG |
| R. Hoffman | PSEG |
| E. Scott | PSEG |
| R. Gallaher | PSEG |
| C. Lukacsy | PSEG |
| K. Swing | PSEG |
| M. Parrish | PSEG |
| T. Rogers | GEH |
| F. Novak | GEH |
| K. Miller | GEH |
| R. Hayes | GEH |
| R. Merante | GEH |
| T. Vikara | GEH |
| D. Heinig | Sargent and Lundy |

HCGS NUMAC Upgrade – Open Items

| No. | Resp. | Issue Description | Status | RAI No. | PSEG Response |
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| 1. | EICB | System Description<br><br>Appendix R provides responses to plant specific responses to the NUMAC LTR. The response to LTR 2.3.4 identifies the configuration for HCGS to be 4 APRM channels with one APRM chassis and one LPRM chassis. However the LTR and Appendix A system architecture do not describe this.<br>Appendix A describes a master/slave APRM instrument, but the LTR describes a LPRM unit not clear how these two concepts relate, if they do.<br>Provide a figure showing the system architecture for the HCGS PRNMS. | new | | LTR 5.3.1 first bullet discusses APRM chassis and (for large cores) LPRM chassis. NEDC-33864P Appendix A refers to these two chassis as APRM-Master and Slave.<br><br>Master refers to the APRM chassis and Slave refers to the LPRM chassis. These terms are used interchangeably.<br><br>NEDC-33864P Appendix A page A-11 shows the system level architecture. |
| 2. | EICB | System Description<br><br>Appendix A seems to describe the generic PRNM system architecture and not the architecture for HCGS. What is different between this description and the one provided in the LTR?<br>Also there are system differences, which are described in Appendix J. How do these modules work and fit in the system architecture for HCGS? | new | | The LTR describes variants of PRNM system architecture, depending on whether the target application (plant) has a large or small core, and whether it is BWR6 or non-BWR6. Appendix A provides additional details about large core, non-BWR6, such as Hope Creek.<br><br>The differences described in Appendix J are not architectural differences. |

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| 3. | EICB | System Description<br><br>Appendix J identifies Hope Creek deviations from the approved generic NUMAC PRNM system. This is required in ISG-06 Section D.8.<br>a) Table 1 lists these deviations and provide justifications for such. Please provide additional information for the following items:<br>• Column Reference Document – what are these documents?<br>• Item 2 – Why the modification for time to calculate flow-biased trip setpoint is a clarification? It seems that the total time for the Hope Creek Design has changed.<br>• Item 5 – What higher level of security was applied and to what activities?<br><br>b) Section 4.2 describes the relay logic for HCGS. Please clarify how the improved relay logic module relates to the new relay logic card to be included in the Hope Creek PRNM system. | new | | a)<br>• These are GEH references pointing to where the support for the justification is stored in the GEH document system. The following two referenced documents can be placed in reading room upon request.<br>• Item 2 - 001N5637 PRNM Time to Calculate Flow-biased Trip Setpoint<br>• Item 5 - 001N5640 PRNM Increased Instrument Security<br><br>b)<br>"Relay Logic Module" and "Relay Logic Card" refer to the same thing. Hope Creek will receive the new design. |

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| 4. | EICB | Software Development Plans<br><br>The plans submitted describe GEH processes, but they do not include the activities to be performed by the licensee, such as oversight. Please describe the activities and processes for which PSEG is responsible. | new | | PSEG is required to create or acquire a number of documents from vendors providing safety related equipment per IT-AA-101. The purpose of many of these documents is to ensure the vendor has a quality process in place for software and product design and that the process and design are accurately documented and tested. The required documents include a configuration management plan, a problem management and reporting process, a disaster recovery process, documented functional requirements, a documented technical design, a verification and validation plan, testing reports, user documentation, code review process and documentation and a traceability matrix to ensure all requirements are tested.<br><br>In addition, CC-AA-103-1007 responsibilities state:<br>Lead Responsible Engineers (LREs) are responsible for ensuring DCPs with digital devices are provided to DTS Design Engineer for review. DTS Design Engineers are responsible for reviewing Design Change Packages (DCP) with digital devices ensuring an adequate Critical Digital Review (CDR) is performed and documented. The DTS |

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| | | | | | Engineer determines the scope and breadth of the CDR for the particular application.<br><br>A critical digital review is a review of a vendor's software QA processes and a technical review (EMI/RFI, failure analysis) of the design, documentation, and testing of a digital device determining the software/hardware's suitability for purchase and installation at PSEG Nuclear facilities. PSEG personnel participated in critical digital review that was led by ProDesCon on the GEH Power Range Neutron Monitoring System (also refer to LAR Attachment 1 Section 3). The CDR report pointed out that GEH has an established regulatory approved Appendix B quality program and that they're processes are suitable to ensure the quality of the design, configuration control, Part 21 reportability and the system maintenance throughout the life cycle. The CDR included a high-level review of the overall system design, focusing on the safety functions of the system and how digital design principles indicative of highly reliable digital systems were applied to the PRNM system.<br><br>PSEG has reviewed and commented on software lifecycle documentation produced by GEH throughout the project. |

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| | | | | | In addition PSEG has performed two audits (reference Survey numbers NOV2116-014 and NOD-15-038) thus far on GEH to help ensure product reliability. These audits focused on GEH audits performed on subcontractor Gavial, the GEH actions and process to correct identified issues, QA hold points placed on the purchase order, overall test plans and completed testing, restrictions placed on the Gavial subcontractor, cyber security aspects of the project and the GEH engineering change process.<br><br>PSEG also plans to witness continued factory testing with the quality assurance department. |
| 5. | EICB | Software Development Plans<br><br>The proprietary markings in the appendices are inconsistent. For example, information in Sections 4.2 and 4.3 in Appendix B is not marked proprietary, but this same information is also provided in Sections 4.2 and 4.3 of Appendix D, where is marked as proprietary. | new | | Appendix B Sections 4.2 and 4.3 should be marked proprietary to match Appendix D. Updated copies of Appendix B proprietary and non-proprietary can be provided. |
| 6. | EICB | Appendix E, PRNM System Management Plan | new | | |

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| | | a) Section 2.3 describes how project management will be performed. This section refers to critical-to-quality features to be part of the management process. However, this plan does no define these features. Since these features are part of project oversight, please describe these features and in which document will they be recorded? | | | A Project Work Plan (PWP) is required by GEH policies and procedures. As stated in Appendix B Section 3.1.1.5, the PWP contains personnel and commercial information, including project budgetary information that is classified as GEH Proprietary Class III (confidential). The PWP is created and maintained by the Project Manager to manage the commercial aspects of the project. Critical to quality features are project specific and are listed in the PWP. For Hope Creek, these are listed in Appendix C3 of the Hope Creek PRNM Upgrade PWP. |
| | | b) Section 2.4.1 describes the secure development environment. This section states the control employs in the system development should be in accordance with GEH established procedures, consistent with guidance provided in RG 1.152. Please describe the GEH procedures to be followed for secure development environment. | | | A collection of administrative procedures covers specific topics related to the secure development environment:<br>• Asset Identification<br>• Secure Development Network<br>• Physical Security<br>• Malicious Code Protection<br>• Patch Management<br>• Server and Computer Hardening<br>• Threat Analysis<br>• Software Usage<br>• Electronic Access Control<br>• Log Management<br>• Personnel Security and Segregation of Duties<br>• Production Deployment |

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| | | | | | • Product Handling and Delivery<br>• Incident Response<br>• Contingency Planning<br>• Security Control Review<br>• Changes to Physical, Logical, or Programmatic Controls |
| | | c) Section 3.1 describes the need to establish project quality metrics. However, this section does not identify the project quality metrics. | | | The Design Review Summary Report and Design Review Scorecard provide a record of quality metrics applied by the Chief Engineer's Office. A copy of a scorecard can be placed in the Reading Room upon request. |
| 7. | EICB | Appendix B, PRNM Systems Engineering Development Plan | new | | |
| | | a) Section 2.4.1 of Appendix K states the verification of the design documents is performed by the design team prior to IVV activities. But section 2.3 seems to imply that these reviews are performed by a team independent of the design team. In addition, section 4.2 of Appendix B also describes an independent review team who perform the technical design review. Please clarify what group (in the GEH organization) performs these independent reviews. | | | When the design team prepares and releases design artifacts, GEH procedures require the Design team to perform verification of documents prior to the document release. The released document is then provided to the IVV team who conducts the independent verification in accordance with the SyIVVP. Conducting the IVV activities defined in the SyIVVP (Section 3.0) constitutes the Technical Design Review, which is performed by the IVV team and is supervised by the Chief Engineers Office. |

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| | | b) Section 2.4.1 describes the technical design reviews. This section states the design team is responsible for resolving issues identified during these reviews. How are these issues being recorded and tracked? Section 4.5 of this appendix describes how deficiencies or discrepancies could be tracked, and Section 7.0 states they could use engineering change order to handle problems encountered during product development. But these statements are not specific. In addition, it seems that these options are used after delivery of the NUMAC system. Please explain what method will be used to identify and track problems identified during the technical design reviews. Also, explain the process to approve the resolution of these problems. | | | Project specific issues that remain open across project phases are tracked in the task reports. See Section 4.4.2 of the NUMAC Systems Engineering Development Plan. Closure of open items is reviewed as part of subsequent Baseline reviews; open items are resolved and closed prior to completion of the final Baseline review. |
| | | c) Section 4.3 states the baseline review team would also review and approve development tools. Was this necessary for the HCGS PRNM system? | | | The SyQA Functional Configuration Audit Checklist (NUMAC System Quality Assurance Plan Section 4.4.1) lists tools that were approved for the associated baseline. A SyQA Functional Configuration Audit Checklist is developed for each Baseline. Tools are approved for use via the Baseline review process for application to a specific |

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| | | | | | project. Tools were used for the HCGS PRNM system development. |
| | | d) Section 5.0 describes the use of development tools. BTP 7-14, Section B.3.1.2.3 requires licensee to provide a description of software tools to be used. Please identify the software development tools. | | | Tools are selected and approved for use throughout the various phases of project. The approved tools are documented in the SyQA Functional Configuration Audit Checklists (NUMAC System Quality Assurance Plan Section 4.4.1).<br>GEH provided details on software tools during previous (Grand Gulf and Columbia) projects. See RAI #3 in GNRO-2011/00038 (ML111370259) and Section 4.4.6 in NEDC-33685 (ML12040A074). |
| | | e) Section 6.0 describes the secure development and operational environment. This section states access to the NUMAC lab is controlled and monitored. But it does not provide details on how these are perform. Please provide detail explanation. | | | GEH has a procedure for controlling access to the NUMAC lab; see response to Open Item 6.b. |
| | | f) Section 6.0 describes the secure development and operational environment. This section states the code is maintained in the secure server. How is access granted to this server? | | | GEH has a procedure for access control of the secure server, see response to Open Item 6.b. |

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| | | g) Section B.3.1.2.2 of BTP 7-14 requires licensee to identify the indicators to determine the success or failure of the development processes. This information was not provided in the engineering development plan. In addition, Appendix A in Appendix K identifies the alignment to NUMAC documents. This table identifies that this information in SyMP (See open item 6.c). Please provide this information. | | | Success or failure is indicated by the Design Review Summary Report and Design Review Scorecard. |
| 8. | EICB | Appendix C, NUMAC Systems Quality Assurance Plan | new | | |
| | | a) General comment: This plan does not cover all the activities identified in section B.3.1.3 of the BTP 7-14. Specifically, this plan does not describe the corrective action program, description of QA procedures, and indicators to determine software quality. | | | The NUMAC plans augment and supplement the GEH QA Program. As stated in Section 1.0 of the NUMAC Systems Quality Assurance Plan, the GEH Quality Assurance Program encompasses quality assurance related activities such as audits, supplier control, and archiving of quality records. Although not explicitly mentioned, the corrective action program is a component of the GEH Quality Assurance Program. |
| | | b) Section 3.0 states unresolved configuration items is grounds for failure. How are these issues identified, recorded and tracked? Who is responsible for approving | | | Open items are listed in the System Quality Assurance Configuration Audit Checklist and tracked in the System Configuration Management Task report (SyEDP 4.4.2). The checklist and task report are part of the |

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| | | resolution of these issues? (see open item 7.b) | | | Baseline Review Records. These records are approved by the baseline review team, which is chaired by the Chief Consulting Engineer. |
| | | c) Section 4.4.1 describes the oversight activity associated with quality assurance. Is the activity described in this section the only oversight activity to be performed? (This section is marked proprietary so the specific activity is not identified in the question). What happens if problems are identified during this oversight activity? | | | As discussed in response to Question 8.a, the GEH Quality Assurance Program has other activities. Problems are tracked in accordance with GEH procedures. |
| 9. | EICB | Software Integration Plan (SIntP)<br><br>GEH did not submit a separate plan for this. However, GEH (Appendix K) identified the NUMAC documents that cover the requirements for this plan (BTP 7-14, Section B.3.1.4). Based on this information, the staff identified the following questions: | new | | |
| | | a) Section B.3.1.4.2 identifies the implementation characteristics of the SIntP. His section requires description of the software integration activities. GEH references SyEDp for this, but SyEDP does not provide enough | | | GEH does not have a separate software integration team, rather software integration is performed by the design team. Therefore, the characteristics described in the SyEDP for design team activities apply to integration activities as well. For explanation of how |

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| | | information about the software integration process. Please provide this information. | | | measurement is performed, see response to 6.c. |
| | | b) Section B.3.1.4.3 identifies software tools. As mentioned in open item 7.d, these GEH document do not identify the software tools to be used. Please provide this information. | | | See response to open item 7.d. |
| 10. | EICB | Software Safety Plan (SSP)<br>GEH did to submit a separate plan for this. However, GEH (Appendix K) identified the NUMAC documents that cover the requirements for this plan (BTP 7-14, Section B.3.1.9). Based on this information, the staff identified the following question:<br>Appendix K refers to the IVVP and SyMP for the information required in BTP 7-14. However, the information identified in these sources seem to address the hazard analysis required by IEEE 102, and not what is required in BTP 7-14.<br>The SSP should provide a general description of the software safety effort, and the intended interactions between the software safety organization and the general system safety organization. | new | | The PRNM upgrade is a retrofit system. As a retrofit system, the GEH approach to software safety planning for PRNM is to ensure that the safety significance of the PRNM retrofit is consistent with the design basis of the replaced system and of the plant. GEH provided details on software safety approach during previous (Grand Gulf and Columbia) projects. See RAI #1 and 2 in GNRO-2011/00039 (ML111460590) and Section 4.4.1.9 in NEDC-33685 (ML12040A074). |
| 11. | | Appendix D, NUMAC Systems Independent Verification and Validation | new | | |

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| | | a) Section 2.1 describes the GEH organization. This section states the GEH Chief Engineer's office supervises independent V&V activities. However, Appendix D, Figure 2-1 identifies the Chief Consulting Engineer as the person responsible for V&V activities. | | | The Chief Consulting Engineer reports to the Chief Engineer's Office. |
| | | b) Section 3.1.2 describes the safety analysis for the concept phase. It is not clear if this activity will include the preliminary hazard analysis, since it seems to only cover evaluation of the documentation. | | | See response to open item 10. |
| | | c) Is the safety analyses described in each lifecycle phase considered to be the hazard analysis identified in IEEE Std. 1012? If so, will this also include the risk analysis identified in IEEE Std. 1012? | | | Hazard analysis is performed during various lifecycle phases as indicated in Appendix K, Table 5 for cross-reference of IEEE Std 1012 to NUMAC process.<br>Project risk management is performed during all system life cycle development phases in accordance with the GEH Quality Assurance Program |
| | | d) Appendix K refers to the IVVP Section 4.0 to confirm item B.3.1.10.1, risks. Section 4.0 describes the baseline process. So it is not clear how the baseline process will be used to identify and manage | | | Project risk management is performed during all system life cycle development phases in accordance with the GEH Quality Assurance Program. SyIVVP Section 4.2 describes Technical Reviews. Although not stated in the SyIVVP, the GEH procedure for Technical |

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| | | risks associated with the V&V process. | | | Design Reviews requires risks management. SyIVVP Section 4.3 describes Baseline Reviews, which are a process check to ensure the project plans are being followed. |
| | | e) Appendix K refers to several sections in the IVVP to confirm item B.3.1.10.2, measurement. However, the information provided does not clearly define the indicators that will be used. | | | See response to open item 6.c. |
| | | f) Section B.3.1.10.2, procedures requires applicants to describe how anomalies are identified and reported. This information is not provide in the plan (See item 11.b above) | | | Per section 2.2.2 and 2.2.3 of the SyIVV, the System Verification Engineer and System Safety Analysis Engineer are responsible for documenting results of reviews including anomalies in their respective tasks reports. The task reports are discussed in sections 4.4.1 and 4.4.2. |
| 12. | EICB | Software Configuration Management Plan (SCMP)<br><br>GEH did to submit a separate plan for this. However, GEH (Appendix K) identified the NUMAC documents that cover the requirements for this plan (BTP 7-14, Section B.3.1.11). Based on this information, the staff identified the following question:<br>Appendix K refers to the SyEDP for the information required in section B.3.1.11.2, procedures. However, the information | new | | SyEDP - section 3.4 specifies configuration management of source code and section 5 specifies configuration management of firmware. Tools are controlled at the baseline in which they are introduced. Configuration Status Accounting includes all the configurable items. |

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| | | identified in these sources seem to address only configuration of documents, and not all configuration items (e.g., software tools, source code, etc.). How will GEH control these items? | | | |
| 13. | EICB | EQ Testing<br><br>The system equipment qualification (EQ) test plan was not submitted with the LAR. Instead the licensee submitted an EQ program in Appendix H. This program states the EQ plans will provide the details on the system to be qualified. Also, that the EQ program provides guidance to prepare EQ plans, if they are necessary. For this amendment, GEH described design changes for the HVPS, Relay Logic Card, and UFP Display. Therefore, a qualification plan for these components should be submitted. ISG-06, Section D.5.2 describes the information to be provided for the staff to evaluate EQ of I&C systems. Section D.5.2 requires submittal of the EQ plan. | new | | These items are encompassed by Appendix H. They are specifically identified in Section 3.3 and qualification approach is discussed in Section 5. |
| 14. | EICB | EQ Testing Requirements<br><br>Are the EQ requirements based on the plant conditions? | new | | The EQ requirements are based on plant conditions:<br><br>From NEDC-33864P Appendix H Section 1.1: |

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| | | | | | The replacement NUMAC PRNM system is designed to maintain functional operability under conditions specified in the PSEG Hope Creek Generating Station Power Range Neutron Monitoring System (PRNM) Upgrade Project H-1-SE-KDS-0494 [Reference 7.1]. The qualification requirements, the subject of this system qualification program, are further delineated in the NUMAC PRNM System Requirements Specification [Reference 7.2].<br><br>Reference 7.2 is provided as NEDC-33864P Appendix F Part 1 (NUMAC PRNM System Requirements Specification). Section 2.5 references Hope Creek specification H-1-SE-KDS-0494; the qualification requirements in Appendix F Part 1 Section 9 are obtained directly from the Hope Creek specification. |
| 15. | APHB | Section D.9.4, "Technical Evaluation," of DI&C-ISG-06, Subsection D.9.4.2.14, "IEEE Std. 603, Clause 5.14, Human Factors Considerations," states, in part, that the information provided should be sufficient to demonstrate that the guidance contained in Standard Review Plan, Appendix 18-A, has been met.<br><br>NUREG-0800, Standard Review Plan, Appendix 18-A, "Crediting Manual Operator Actions in Diversity and Defense-in-Depth | new | | An analysis, consistent with NUREG-0800, Appendix 18-A, will be provided demonstrating that the manual operator actions remain both feasible and reliable, and the ability to perform the actions reliably within the time available is maintained. The analysis will be provided in the HCGS PRNM Electronic Reading Room portal, in the second quarter of 2016.<br><br>PSEG would like to discuss some clarifications concerning Appendix 18-A: |

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| | | (D3) Analyses," Revision 0, states, in part, that a diversity and defense-in-depth analysis should include the justification of any operator actions that are credited for response to an Anticipated Operational Occurrence/Postulated Accident concurrent with software Common Cause Failure (CCF). It further states that credited manual operator actions and their associated interfaces (controls, displays, and alarms) should be specifically addressed in the vendor/licensee/applicant's Human Factors Engineering (HFE) Program. The vendor/licensee/applicant should commit, in the defense-in-depth submittal, to include the proposed defense-in-depth coping actions in an HFE Program consistent with that described in NUREG-0711 and to provide the results of the HFE Program to the staff prior to implementation of the proposed action(s).<br><br>As stated in NUREG-0800, Appendix 18-A, to credit operator actions, an acceptable method would be to demonstrate that the manual actions in response to a BTP 7-19 software CCF are both feasible and reliable, given the time available, and that the ability of operators to perform credited actions reliably will be maintained for as long as the | | | a. Phase 3 vs Phase 1 required time: If the required time (and margin to time available) has been verified via Phase 3 ISV, is it still necessary to perform the Phase 1 time required estimate?<br><br>b. For the two manual operator action items from the D3 report the HCGS Operators have multiple existing indications available. Consequently, PSEG does not need the simulator PRNM digital modification to support the18-A Phase 3 ISV; the existing plant/simulator configuration supports the ISV. The ISV is scheduled to be completed in March/April 2016. (Note: if simulator modifications were required before timing operator actions that could not be done until couple of months before modification implementation, ie 2018) |

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| | | manual actions are necessary to satisfy the defense-in-depth analysis. Changes in plant design, including those that do not add, change, or delete the credited manual operator actions, may affect the ability of operators to correctly and reliably perform manual actions due to performance shaping factors (e.g., workload, time pressure) or other causes.<br><br>Provide information regarding the analysis, consistent with NUREG-0800, Appendix A, that was used to demonstrate that the manual actions remain both feasible and reliable, and the ability to perform the actions reliably within the time available is maintained. The analysis should demonstrate that (1) the time available to perform the required manual actions is greater than the time required for the operator(s) to perform the actions, and (2) the operator(s) can perform the actions correctly and reliably in the time available. PSEG should provide sufficient information to demonstrate that the conclusions reached in the previously performed analysis regarding the feasibility and reliability of credited manual operator actions will remain valid in the post-modification environment (i.e., that the time | | | |

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| | | available to perform the required manual actions and the time required to perform such actions will not be adversely affected by the proposed modification). | | | |
| 16. | | | | | |
| 17. | | | | | |

- The NRC staff will provide audit dates and a list of documents to be placed in the reading room. In addition, the NRC staff will update the list of preliminary issues for the March meeting, including closing several items.

- The next teleconference will be on March 15, 2016.

Members of the public were in attendance. Public Meeting Feedback forms were not received. No comments from the public were received.

Please direct any inquiries to me at 301-415-4037 or Thomas.Wengert@nrc.gov.

***/RA/***

Thomas Wengert, Senior Project Manager
Plant Licensing Branch I-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-354

Enclosures:
1. List of Attendees
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RidsNrrPMHopeCreek Resource
RidsRgn1MailCenter Resource
RAlvardo, NRR
MChernoff, NRR
RIyengar, OEDO
LPL1-2 R/F
RidsNrrDorlLpl1-2 Resource
RidsNrrLALRonewicz Resource
TWertz, NRR
VHuckabay, NRR
GThomas, NRR

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| OFFICE | DORL/LPL1-2/PM | DORL/LPL1-2/LA | DORL/LPL1-2/BC | DORL/LPL1-2/PM |
|---|---|---|---|---|
| NAME | CParker | LRonewicz | DBroaddus | TWengert |
| DATE | 3/04/2016 | 3/08/2016 | 3/18/2016 | 3/22/2016 |

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