UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
2100 RENAISSANCE BLVD.
KING OF PRUSSIA, PA 19406-2713

March 23, 2017

EA-16-251

Mr. Peter P. Sena, III
President and Chief Nuclear Officer
PSEG Nuclear LLC – N09
P.O. Box 236
Hancocks Bridge, NJ 08038

SUBJECT: HOPE CREEK GENERATING STATION - NRC INVESTIGATION REPORT NO. 1-2016-003

Dear Mr. Sena:

This letter refers to an investigation initiated on November 5, 2015, by the NRC Office of Investigations (OI) and conducted at the PSEG Nuclear, LLC (PSEG) Hope Creek Generating Station (Hope Creek). The investigation was conducted to determine whether an instrument and control (I&C) technician had deliberately failed to follow site procedures resulting in a reactor scram. Based on the evidence gathered during the investigation, the NRC preliminarily determined that a (now-former) PSEG employee at Hope Creek deliberately failed to follow a procedure. This caused PSEG to be in apparent violation of Hope Creek Technical Specifications. The apparent violation (AV) is being considered for escalated enforcement action in accordance with the NRC Enforcement Policy. The current Enforcement Policy is available on the NRC's Web site at http://www.nrc.gov/about-nrc/regulatory/enforcement/enforce-pol.html. A factual summary of the OI investigation is included as Enclosure 1 to this letter and the AV is described in Enclosure 2.

Since PSEG identified the violation and based on our understanding of PSEG's corrective actions, a civil penalty may not be warranted in accordance with Section 2.3.4 of the Enforcement Policy.

We believe we have sufficient information to make an enforcement decision regarding the apparent violation. Therefore, you may accept the violation as characterized in this letter and notify us of that decision within 10 days. Alternatively, before the NRC makes its final enforcement decision, you may choose to provide your perspective on this matter, including the significance, cause, and corrective actions, as well as any other information that you believe the NRC should take into consideration by: (1) requesting a pre-decisional enforcement conference (PEC) to meet with the NRC and provide your views in person; (2) requesting Alternative Dispute Resolution (ADR); or (3) responding to the apparent violation in writing.

If you choose to request a PEC, the meeting should be held in our office in King of Prussia, PA, within 30 days of the date of this letter. The conference will include an opportunity for you to

provide your perspective on these matters and any other information that you believe will assist the NRC in making an enforcement decision.

In lieu of a PEC, you may also request ADR with the NRC in an attempt to resolve this issue. ADR is a general term encompassing various techniques for resolving conflicts using a neutral third party. The technique that the NRC has decided to employ is mediation; a voluntary, informal process in which a trained neutral mediator works with parties to help them reach resolution. If the parties agree to use ADR, they select a mutually agreeable neutral mediator who has no stake in the outcome and no power to make decisions. Mediation gives parties an opportunity to discuss issues, clear up misunderstandings, be creative, find areas of agreement, and reach a final resolution of the issues. Additional information concerning the NRC ADR program can be obtained at http://www.nrc.gov/about-nrc/regulatory/enforcement/adr.html. The Institute on Conflict Resolution (ICR) at Cornell University has agreed to facilitate the NRC program as a neutral third party. Please contact ICR at 877-733-9415 within 10 days of the date of this letter if you are interested in pursuing resolution of this issue through ADR. The ADR mediation session should be held in our office in King of Prussia within 45 days of the date of this letter.

Either the PEC or the ADR would be closed to public observation because the NRC's preliminary findings are based on an NRC OI report that has not been publicly disclosed. However, the time and date of the PEC or ADR will be publicly announced.

If you choose to provide a written response, it should be sent to the NRC within 30 days of the date of this letter. Your response may reference or include previously docketed correspondence, if the correspondence adequately addresses the required response. You should clearly mark the response as a "Response to Apparent Violations in NRC Investigation No. 1-2016-003; EA-16-251," and send it to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001 with a copy to the Regional Administrator, Region I, 2100 Renaissance Boulevard, King of Prussia, PA 19406.

Please contact Fred Bower, Chief, Division of Reactor Projects Branch 3, at 610-337-5200 within **10** days of the date of this letter to notify the NRC which of the above options you choose.

Please be advised that the number and characterization of apparent violations described in the enclosures may change as a result of further NRC review. You will be advised by separate correspondence of the results of our deliberations on this matter.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosures will be made available electronically for public inspection in the NRC Public Document Room and from the NRC Agency-wide Documents Access and Management System (ADAMS), accessible from the NRC Web site at http://www.nrc.gov/reading-material-rm/adams.html.

Please note that final NRC investigation documents, such as the OI report described above, may be made available to the public under the Freedom of Information Act (FOIA), subject to redaction of information appropriate under the FOIA. Requests under the FOIA should be made in accordance with 10 CFR 9.23, "Requests for Records." Additional information is available on the NRC website at http://www.nrc.gov/reading-rm/foia/foia-privacy.html.

The apparent violation will be administratively tracked under Inspection Report No. 05000354/2017010. If you have any questions related to this matter, please contact Mr. Bower of my staff at 610-337-5200.

Sincerely,

/RA/ Original Signed by:

Michael L. Scott, Director
Division of Reactor Projects

Enclosures:
1. Factual Summary of OI Investigation Report 1-2015-029
2. Apparent Violation being considered for escalated enforcement action

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Enclosure 1

Factual Summary of NRC Office of Investigations (OI) Case No. 1-2016-003

On September 28, 2015, an instrument and control (I&C) technician completed procedure HC.IC-FT.SA-0001, "Redundant Reactivity Control System (RRCS) – Division I Channel A" and successfully tested the 'A' channel of the RRCS. The I&C technician then proceeded into procedure HC.IC-FT.SA-0003, "RRCS – Division I Channel B" to test the 'B' channel of the RRCS. While the technician was performing this procedure, the reactor tripped. To determine the cause of the reactor trip, on September 30, 2015, PSEG performed complex troubleshooting, which included reviewing the data saved from plant parameters. Based on the troubleshooting, PSEG determined that the I&C technician had made an error during the surveillance testing, causing both RRCS channels to trip and the reactor to scram.

OI interviewed a PSEG staff engineer involved in the troubleshooting. The engineer testified that he analyzed real-time printouts of reactor parameters at the time of the event to recreate the scenario on the reactor simulator. The engineer stated that, from the simulation, it was determined that the I&C technician had incorrectly selected the 'A' channel of RRCS and then selected the 'B' channel with the test input still inserted in the 'A' channel. This error then caused the reactor recirculation pumps to trip leading to the reactor scram. Additionally, the engineer testified that the full RRCS system was reviewed as part of the troubleshooting and no other failures were identified.

The I&C technician testified that he had received training and was fully qualified to perform surveillances of the RRCS and had performed this particular surveillance numerous times. The technician acknowledged that he had received training on procedure use and adherence and understood that if an issue occurred, to stop and resolve the issue before moving forward in the procedure. The I&C technician stated that on September 28, 2015, he and another technician had been assigned to perform the RRCS surveillance on the Division 1 'A' and 'B' channels. The technician testified that the cause of the reactor scram was "something went wrong with RRCS," adding that he did not make any mistakes or deviate from the procedure. The I&C technician could not provide an explanation for the contradiction between PSEG's determination for the cause of the scram (i.e. human performance error) and the technician's own testimony.

OI reviewed the copy of HC.IC-FT.SA-0003, used by the I&C technician on September 28, 2015. The technician had initialed the warning at the start of the applicable section of the procedure which stated "Extreme caution should be exercised with key functions on Display Monitor. Careless keyboard manipulation can cause a reactor scram. <u>If</u> any doubt or questions arise, <u>THEN</u> CONTACT Job Supervision immediately." Contrary to this warning, the I&C technician, as proven through plant data, did not stop and contact supervision after incorrectly selecting the 'A' channel of RRCS. Instead, he selected the 'B' channel with the test inputs still inserted in the 'A' channel.

OI concluded based on the preponderance of evidence, that the I&C technician deliberately failed to follow this procedure.

ENCLOSURE 2
APPARENT VIOLATION

Hope Creek Generating Station Technical Specification 6.8.1.d, “Procedures and Programs,” requires that written procedures shall be established, implemented, and maintained for surveillance and test activities of safety-related equipment. HC.IC-FT.SA-0003, “Redundant Reactivity Control System – Division 1 Channel B, C-22-N-403E, N402E ATWS Recirculation Pump Trip,” cautions that “Careless keyboard manipulation can cause a reactor scram. IF any doubt or questions arise, THEN contact Job Supervisor immediately.”

Contrary to the above, on September 28, 2015, PSEG did not properly implement a procedure for a surveillance activity of safety-related equipment when the individual performing an RRCS surveillance test made an error and rather than immediately stopping and informing the job supervisor, attempted to correct the error. Specifically, when manipulating the keyboard, the individual selected the wrong channel to test. Rather than contacting the job supervisor, the individual attempted to correct for the error by selecting the proper channel with test inputs still inserted in the other channel, which ultimately led to a dual recirculation pump trip, alternate rod insertion (ARI) initiation, and a reactor scram.