



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

April 30, 2019

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 – ISSUANCE OF AMENDMENT
NO. 216 RE: REVISE TECHNICAL SPECIFICATION 3/4.8.1, “A.C. SOURCES
– OPERATING,” ACTION FOR INOPERABLE DIESEL GENERATOR
(EPID L-2018-LLA-0079)

Dear Mr. Sena:

The U.S. Nuclear Regulatory Commission (Commission) has issued the enclosed Amendment No. 216 to Renewed Facility Operating License No. NPF-57 for the Hope Creek Generating Station in response to your application dated March 28, 2018, as supplemented by letters dated September 26, 2018, and February 28, 2019.

The amendment revises Technical Specification 3/4.8.1, “A.C. Sources – Operating,” specifically, Action b, concerning one inoperable emergency diesel generator. The change removes the Salem Nuclear Generating Station, Unit 3, gas turbine generator and replaces it with portable diesel generators.

A copy of the related safety evaluation is also enclosed. Notice of Issuance will be included in the Commission’s biweekly *Federal Register* notice.

Sincerely,

A handwritten signature in black ink that reads "James S. Kim".

James S. Kim, Project Manager
Plant Licensing Branch I
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-354

Enclosures:

1. Amendment No. 216 to
Renewed License No. NPF-57
2. Safety Evaluation

cc: Listserv



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

PSEG NUCLEAR LLC

DOCKET NO. 50-354

HOPE CREEK GENERATING STATION

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 216
Renewed License No. NPF-57

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment filed by PSEG Nuclear LLC dated March 28, 2018, as supplemented by letters dated September 26, 2018, and February 28, 2019, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance: (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations set forth in 10 CFR Chapter I;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

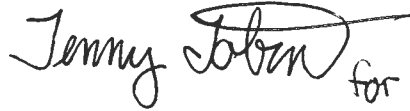
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-57 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 216, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the renewed license. PSEG Nuclear LLC shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. The license amendment is effective as of its date of issuance and shall be implemented within 1 year of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in black ink that reads "James G. Danna" with a stylized flourish at the end. To the right of the signature, the word "for" is written in a smaller, simpler font.

James G. Danna, Chief
Plant Licensing Branch I
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Renewed Facility Operating
License and Technical Specifications

Date of Issuance: April 30, 2019

ATTACHMENT TO LICENSE AMENDMENT NO. 216

HOPE CREEK GENERATING STATION

RENEWED FACILITY OPERATING LICENSE NO. NPF-57

DOCKET NO. 50-354

Replace the following page of the Renewed Facility Operating License with the revised page. The revised page is identified by amendment number and contains a marginal line indicating the area of change.

Remove
3

Insert
3

Replace the following page of the Appendix A Technical Specifications with the attached revised page. The revised page is identified by amendment number and contains marginal lines indicating the areas of change.

Remove
3/4 8-2

Insert
3/4 8-2

reactor operation, as described in the Final Safety Analysis Report, as supplemented and amended;

- (4) PSEG Nuclear LLC, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use at any time any byproduct, source and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;
- (5) PSEG Nuclear LLC, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and
- (6) PSEG Nuclear LLC, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility. Mechanical disassembly of the GE14i isotope test assemblies containing Cobalt-60 is not considered separation.
- (7) PSEG Nuclear LLC, pursuant to the Act and 10 CFR Part 30, to intentionally produce, possess, receive, transfer, and use Cobalt-60.

C. This renewed license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

PSEG Nuclear LLC is authorized to operate the facility at reactor core power levels not in excess of 3902 megawatts thermal (100 percent rated power) in accordance with the conditions specified herein.

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 216, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the renewed license. PSEG Nuclear LLC shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

ELECTRICAL POWER SYSTEMS

LIMITING CONDITION FOR OPERATION (Continued)

ACTION: (Continued)

2. For the inoperable A or B diesel generator, if continued operation is permitted by LCO 3.7.1.3:
 - a) Restore the inoperable diesel generator to OPERABLE status within 72 hours, or
 - b) Verify the supplemental power source is available within 72 hours and once per 12 hours thereafter[#], and restore the inoperable diesel generator to OPERABLE status within 14 days.

Otherwise, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

3. For the inoperable C or D diesel generator, if continued operation is permitted by LCO 3.7.1.3, restore the inoperable diesel generator to OPERABLE status within 14 days, or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
- c. With one offsite circuit of the above required A.C. sources and one diesel generator of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter. If a diesel generator became inoperable due to any causes other than an inoperable support system, an independently testable component, or preplanned preventive maintenance or testing, demonstrate the OPERABILITY of the remaining OPERABLE diesel generators separately for each diesel generator by performing Surveillance Requirement 4.8.1.1.2.a.4 within 16 hours unless the absence of any potential common mode failure for the remaining diesel generators is demonstrated*. If continued operation is permitted by LCO 3.7.1.3, restore at least two offsite circuits and all four of the above required diesel generators to OPERABLE status within 72 hours from time of the initial loss or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours. A successful test(s) of diesel generator OPERABILITY per Surveillance Requirement 4.8.1.1.2.a.4 performed under this ACTION statement for the OPERABLE diesel generators satisfies the diesel generator test requirements of ACTION Statement b.
 - d. With both of the above required offsite circuits inoperable, restore at least one of the above required offsite circuits to OPERABLE status within 24 hours or be in at least HOT SHUTDOWN within the next 12 hours. With only one offsite circuit restored to OPERABLE status, restore at least two offsite circuits to OPERABLE status within 72 hours from time of initial loss or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

* This test is required to be completed regardless of when the inoperable diesel generator is restored, to OPERABILITY.

After the initial verification period, the supplemental power source may be unavailable for a single period of up to 24-hours and the once-per 12-hour requirement to verify that the supplemental power source is available may be suspended during this period.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 216

TO RENEWED FACILITY OPERATING LICENSE NO. NPF-57

PSEG NUCLEAR LLC

HOPE CREEK GENERATING STATION

DOCKET NO. 50-354

1.0 INTRODUCTION

By letter dated March 28, 2018 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML18087A095), as supplemented by letters dated September 26, 2018, and February 28, 2019 (ADAMS Accession Nos. ML18269A244 and ML19059A096, respectively), PSEG Nuclear LLC (PSEG or the licensee) requested U.S. Nuclear Regulatory Commission (NRC or the Commission) approval for a license amendment request (LAR) to revise the Hope Creek Generating Station (Hope Creek) Technical Specifications (TSs). The LAR proposes to revise TS 3/4.8.1, "A.C. Sources – Operating," Action b.2.b, to replace the Salem Nuclear Generating Station, Unit No. 3 (Salem Unit 3), gas turbine generator (GTG) with portable diesel generators (DGs).

PSEG plans to retire the Salem Unit 3 GTG due to the maintenance cost associated with maintaining the system operational. Although Salem Unit 3 GTG was assumed to be unavailable in the development of risk metrics for the current 14-day allowed outage time (AOT), Hope Creek TS 3.8.1.1 Action b.2.b, requires the GTG to be available during the extended AOT for the A or B emergency diesel generators (EDGs). Therefore, the licensee requested NRC approval for a revision of the Hope Creek TS to replace the GTG as an alternate source of power with a supplemental power source such as portable DGs.

The supplements dated September 26, 2018, and February 28, 2019, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the NRC staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on June 5, 2018 (83 FR 26106).

2.0 REGULATORY EVALUATION

The NRC staff applied the following requirements and guidance documents to the evaluation of the LAR:

- Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.36, "Technical specifications," requires TSs to include items in the following five specific categories related to station operation: (1) safety limits, limiting safety system settings, and

limiting control settings; (2) limiting conditions for operation (LCOs); (3) surveillance requirements; (4) design features; and (5) administrative controls.

- 10 CFR 50.63, "Loss of all alternating current power," requires that nuclear power plants must be able to withstand a loss of all alternating current (AC) power for an established period of time and recover from a station blackout.
- 10 CFR 50.65, "Requirements for monitoring the effectiveness of maintenance at nuclear power plants," requires that preventive maintenance activities must be sufficient to provide reasonable assurance that structures, systems, and components (SSCs) are capable of fulfilling their intended functions. In the LAR, the licensee stated, "Maintenance and testing activities will be controlled in accordance with the operability requirements for the affected equipment contained within the TS. Use of the portable diesel generators does not alter the stations approach to ensuring operability of TS required systems, subsystems, trains, components, and devices is maximized."
- NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition," Branch Technical Position (BTP) 8-8, "Onsite (Emergency Diesel Generators) and Offsite Power Sources Allowed Outage Time Extensions," dated February 2012 (ADAMS Accession No. ML113640138), provides guidance to the NRC staff in reviewing LARs for licensees proposing a permanent TS change to an EDG AOT beyond 72 hours. This document specifically discusses the defense-in-depth aspects for onsite power sources from a deterministic perspective for proposed AOT extensions. No changes are being proposed to the current AOTs for the A and B EDGs.
- NUREG-1764, Revision 1, "Guidance for the Review of Changes to Human Actions," dated September 2007 (ADAMS Accession No. ML072640413), provides guidance to the NRC staff for reviewing changes in human actions, such as those that are credited in nuclear power plant safety analyses.

2.1. System Design and Operation

The Hope Creek Class 1E power system supplies all Class 1E loads that are needed for safe and orderly shutdown of the reactor, maintaining the plant in a safe shutdown condition, and mitigating the consequences of an accident. The Class 1E AC power system distributes power at 4.16 kilovolts (kV), 480 volts (V), and 208/120 V. The Class 1E AC power system is divided into four independent power supply channels: A, B, C, and D. Each of these four channels supplies loads in its own load group. Each Class 1E 4.16-kV bus is provided with a normal and an alternate offsite power supply feeder and one EDG feeder. Any combination of three out of four load groups has the capability to supply the minimum required safety loads to safely shut down the unit and mitigate the consequences of an accident. The EDGs are designed to start and attain rated voltage and frequency within 10 seconds of the receipt of the starting signal.

Each EDG provides power to the 1E loads (and selected non-1E loads) in the event of a loss of offsite power for its associated divisional 4.16 kV switchgears. The engine is rated at 6,148 brake horsepower (4,430 kilowatts (kW) net) at 514 revolutions per minute (rpm) (continuous). The fuel supply tank size is capable of supplying a minimum of 10 hours of

operation at rated load. The September 26, 2018, supplement to the LAR updated the fuel supply tank description to a tank size capable of supplying a minimum of 10 hours of operation at rated load. This timeframe is based on the 1,600 gallon tank size available from the DG suppliers and the fuel consumption rate of the diesel at rated load.

The Salem Unit 3 GTG consists of a TWIN PAC gas turbine installation. It provides a source of emergency power in the event of a loss of power (LOP), reenergizes Salem's group buses, and includes its own fuel oil supply through the use of one of the combustion turbines. It acts as an independent generating module with its only dependency being the availability of fuel. The GTG was also previously used as a peaking unit, providing power to the 13 kV ring bus during peak periods of demand. The proposed portable DGs will be able to supply power for the existing A or B EDG.

2.2. Description of the Proposed Change

The proposed change replaces the GTG with supplemental power source (portable DGs).

TS 3.8.1.1, Action b.2.b

Verify the ~~Salem Unit 3 gas turbine generator (GTG)~~ supplemental power source is available within 72 hours and once per 12 hours thereafter, and restore the inoperable diesel generator to OPERABLE status within 14 days.

Note:

After the initial verification period, the GTG-supplemental power source may be unavailable for a single period of up to 24-hours and the once-per 12-hour requirement to verify that the GTG-supplemental power source is available may be suspended during this period.

3.0 TECHNICAL EVALUATION

The NRC staff reviewed the application for meeting the intent of applicable regulations 10 CFR 50.36, 10 CFR 50.63, and 10 CFR 50.65. The NRC staff used NUREG-0800 (BTP 8-8) guidance in evaluating the proposed change with respect to the supplemental power source.

3.1 BTP 8-8 Evaluation

A. Capacity

BTP 8-8 states that the supplemental source must have the capacity to bring a unit to safe shutdown (cold shutdown) in case of a loss of offsite power (LOOP) concurrent with a single failure during plant operation (Mode 1).

In the LAR, the licensee stated that the EDG has a net capacity of 4,430 kW, and portable DGs will have a total capacity of at least 4,500 kW with 0.8 power factor at 4,160 V. The NRC staff notes that the portable DGs and EDG have a similar short-time rating of 110 percent of rated continuous power for a 2-hour duration. The portable DGs will meet the electrical load requirements for the A or B bus during a LOOP concurrent with single failure to safely shut down the plant. The NRC staff also notes that no changes are being proposed to the existing AOT.

B. Station Blackout (SBO)

BTP 8-8 states that for plants using alternate AC (AAC) or supplemental power sources, the time to make the AAC or supplemental power source available, including accomplishing the cross-connection, should be approximately 1 hour to enable restoration of battery chargers and control reactor coolant system inventory.

In the LAR, the licensee stated that portable DGs will be made available to supply power to energize a vital bus within 3 hours, consistent with the current licensing basis. The portable DGs are left in the storage area during the AOT and will be moved to the staging location and connected in 3 hours. Based on the selected diesel supplier, there will only be two synchronized DGs; therefore, the transport and connection timelines described in the LAR are conservative. Since the existing Hope Creek calculation E-4.1(Q), Class 1E 125 V direct current (VDC) station battery and charger sizing demonstrates that the station can cope up to 4 hours during an SBO or LOOP, the current 3-hour timeframe (current licensing basis) for connecting the portable DGs is acceptable.

C. Availability

BTP 8-8 states that the availability of AAC or supplemental power source should be verified within the last 30 days before entering extended AOT by operating or bringing the power source to its rated voltage and frequency for 5 minutes and ensuring all its auxiliary support systems are available or operational. Plants must assess their ability to cope with loss of all AC power for 1 hour, independent of an AAC power source.

In the LAR, the licensee stated that the portable DGs will be verified tested within the past 30 days prior to extending an AOT from 72 hours to 14 days, or, if the portable diesel testing is not current within the last 30 days, will be tested prior to entering an extended 14-day AOT. For the inoperable A or B DG, TS 3.8.1.1, Action b.2.b, currently requires verification that Salem Unit 3 is available within 72 hours. TS 3.8.1.1, Action b.2.b, currently requires verification that the Salem Unit 3 GTG is available within 72 hours and once per 12 hours thereafter. This will remain unchanged for the proposed portable DGs. The proposed TSs require the same verification for the portable DGs within 72 hours; therefore, the NRC staff finds that the availability of portable DGs meets the guidance of BTP 8-8.

The BTP 8-8 states the plant should have formal engineering calculations for equipment sizing and protection and have approved procedures for connecting the AAC or supplemental power sources to the safety buses. The licensee is required to prove the diesels can start fully loaded with the largest motor. As described in the LAR, the existing EDG relay settings are in licensee calculation E-7.6. The portable DGs will be supplied with the same level of protection as the existing EDGs, and a new calculation will be created to capture the setpoints. At the time of implementation, procedures will be revised to include connecting the portable DGs.

3.2 Fuel Capacity

In the LAR, the licensee stated that a 10-hour (1,600 gallon) inventory of fuel oil is reasonable, based on the fact that the portable DGs will likely not be operated continuously at rated load, and operators can readily refill the portable DG fuel tanks using multiple sources of diesel fuel available on site. There are eight transportable, double-walled fuel

Pods, each capable of containing 250 gallons of diesel fuel oil and two 500 gallon fuel pods. These fuel pods can be filled, transported, and staged, as required, in proximity to the portable DGs to augment their 10-hour capacity tanks. The 44,800 gallon diesel fuel supply dedicated to the out-of-service EDG can also be accessed to augment these mobile fuel sources. In addition, offsite delivery of diesel fuel by 7,600 gallon tanker truck is available to support Phase-3 of the Flexible Coping Strategies (FLEX) program to cope with beyond-design-basis external events.

The licensee stated that based on these diverse sources and quantities of diesel fuel available, the 10-hour fuel tank capacity, coupled with established operating procedures for the portable DGs, provides a reasonably conservative timeframe to allow operators to augment the portable DGs with additional fuel for continuous duty.

The NRC staff finds that the fuel capacity is adequate for continuous duty of portable DGs.

3.3 Evaluation of Operator Actions and Human Factors

The NRC staff reviewed the human performance aspects of the LAR utilizing the review guidance in Chapter 18 of NUREG-0800 (ADAMS Accession No. ML16125A114), and NUREG-1764, Revision 1, "Guidance for the Review of Changes to Human Actions" (ADAMS Accession No. ML072640413). NUREG-1764, Revision 1, Appendix A, Table A.1, "Generic BWR Human Actions that are Risk-Important," lists actions to recover offsite power after a LOOP, and actions involving risk-important systems as potentially risk-important. The proposed replacement of the Salem Unit 3 GTG with supplemental diesel generators (SDGs) in Hope Creek TS 3.8.1.1, Action b.2.b, involves human actions to provide emergency AC power to Class 1E loads. Therefore, the NRC staff has determined that the subject Hope Creek LAR will receive a Level II human factors review per the guidance in Section 4 of NUREG-1764, Revision 1.

3.3.1 General Deterministic Review

Section 2.4, "Description of the Proposed Change," of the LAR dated March 28, 2018, describes the replacement of the Salem Unit 3 GTG with a supplemental power source. The LAR further describes the new supplemental power source as multiple SDGs with a combined minimum capacity of 4,500 kW capable of automatically synchronizing in parallel to feed the required load. The associated Hope Creek TS 3.8.1.1 required action times and conditions are not being changed. The LAR does not request an extension for any equipment unavailability durations.

Section 3.1, "Proposed Design," of the LAR dated March 28, 2018, states that the minimum capacity of the new SDGs will exceed the 4,430 kW continuous rating of the EDGs, which is greater than the load demand for a LOOP event. The SDGs will also be equipped with voltage regulators and speed governors such that the voltage and frequency limits applicable to the EDGs will be maintained.

Electrical breakers will be installed in two separate non-safety buses and permanently connected to a dedicated receptacle panel for the SDGs. Existing breakers and interconnections can be configured to allow the SDGs to supply either safety-related 4.16 kV bus (i.e., train A or B EDG switchgear). A key-locked breaker control switch will be installed for each breaker such that only one breaker can be closed at a time. This configuration will maintain independence of the offsite sources and preclude paralleling of the supply buses.

The NRC staff finds that the human actions associated with the proposed implementation of the SDGs in place of the Salem Unit 3 GTG, as described in the licensee's LAR, will not adversely impact Class 1E components or safety-related train separation or independence. Furthermore, the NRC staff finds that the licensee's proposed change does not overly rely on human actions to preclude cross-connection of safety-related buses and maintain independence of the offsite electrical sources.

3.3.2 Human Action Analysis

Section 3.2(e) of the LAR describes the current timeframe allowed to place the Salem Unit 3 GTG in service as 3 hours. The 3-hour implementation time is within the current licensing basis time of 4 hours, which has been demonstrated by calculation as the duration that the station can cope with an SBO or LOOP. The 3-hour implementation time will be maintained for the SDGs.

The human actions required to place the SDGs in service are described in Attachment 3 to the LAR dated March 28, 2018. Two scenarios are represented:

Scenario 1: The SDGs are transported from the storage location and then connected and placed in service

Scenario 2: The SDGs have been pre-staged, and the scenario starts with the actions to connect and align the SDGs. The timeline presented for scenario 1 is 180 minutes, and the timeline presented for Scenario 2 is 155 minutes. As expected, the first scenario requires more time than the second since the second does not have equipment transportation time requirements. However, the longest timeline (Scenario 1) adheres to the established 3-hour implementation time.

The licensee's supplement dated September 26, 2018, revised the total number of SDGs being transported and connected to service from three to two. The revised configuration maintains a combined minimum capacity of 4,500 kW. The supplement notes that with the change to implement only two SDGs, the implementation timeline scenarios described above for three SDGs are conservative.

The SDGs are skid-mounted on trailers that can be hooked up and towed with a vehicle to the designated staging area. Once the SDGs are deployed, cables are connected from the SDGs to the dedicated receptacle box, and operators align the breakers to supply the appropriate train of EDG switchgear. The SDGs will be equipped to automatically synchronize in parallel to feed the required load. The licensee's supplement dated September 26, 2018, also revised the required refueling interval for the new SDGs from 24 hours to 10 hours. The licensee described diverse sources and various quantities of diesel fuel available onsite and offsite to support the 10-hour refueling requirement. In addition, existing operating procedures will support continuous refueling of the SDGs.

The LAR states that pre-job briefs will be utilized prior to a planned EDG inoperability that exceeds the TS 3.8.1.1, Action b.2.b, unavailability limit of 72 hours. In addition, per Section 3.2.f of the LAR, the actions associated with connecting the SDGs will be proceduralized.

As described above, the operator/plant personnel actions required to access, transport, and align the SDGs are not complex and will be implemented utilizing procedures and pre-job briefs. In addition, the time available for operators to accomplish these actions includes a margin of

25 percent (i.e., 1 hour). Therefore, based on the above evaluation and the guidance in NUREG-1764, the NRC staff finds that the licensee's proposed submittal includes adequate and appropriate administrative controls to alert and direct the operators to perform the required actions within the associated time limitations.

3.3.3 Design of Human System-Interfaces, Procedures, and Training

The licensee stated that pre-job briefs will be utilized prior to any planned EDG inoperability that exceeds the TS 3.8.1.1, Action b.2.b, completion time of 72 hours. In addition, the human actions needed to connect the SDGs will be proceduralized, and licensed operator training will be conducted. As discussed in Section 3.1 of this safety evaluation, key-locked breaker control switches will be installed to physically prevent more than one breaker being closed at a time. This design feature mitigates an operator action resulting in cross-connecting two electrical feeds to the Class 1E buses. Therefore, the NRC staff finds that the design of human system interfaces, procedures, and operator training has been adequately considered.

3.3.4 Human Action Verification

Attachment 3 to the LAR provides a timeline of the actions required to place the SDGs in service. The longest timeline estimates a deployment time of 3 hours. The individual task times listed in the timeline were derived from the following sources:

1. Prior time determinations for current procedure HC.OP-AB.ZZ-0135, "Station Blackout/Loss Offsite Power/Diesel Generator Malfunction"
2. Estimated time from Validation Plan No. HC- FLEX 2015-12-17-C, "Transport ALT FLEX Diesel Generator"
3. Estimated time from Interviewing operators

The licensee did not assign a specific storage location for the SDGs beyond to-be-determined locations within the plant protected area that will support a 3-hour deployment time.

The human actions associated with deploying and connecting the SDGs are not complex or unique, and the estimated timelines presented in Attachment 3 are reasonable and appropriately supported, given the simplicity of the tasks. Based on the evaluation above and the guidance in NUREG-1764, the NRC staff finds that the licensee has adequately validated that plant operators can deploy and connect the SDGs within the time constraints associated with the proposed TS change.

3.4 Conclusion

The proposed change would replace the GTG with portable DGs in TS 3.8.1.1, Action b.2.b. The portable DGs that Hope Creek will procure will have the same capacity and capability as the GTG. Based on the evaluation above, the NRC staff finds that the proposed change continues to conform with the requirements of 10 CFR 50.36(c)(2). The proposed portable DGs will have the same capacity and capability to mitigate the SBO and LOOP events (10 CFR 50.63).

In the LAR, the licensee stated that the portable DGs will be tested and maintained in accordance with current licensing basis requirements (10 CFR 50.65). The protection of the

portable DGs will be maintained per the current calculations, and the affected procedures will be revised accordingly with the installation of portable DGs. Based on the evaluation above, the NRC staff finds that the supplemental power source would meet the intent of BTP 8-8 to accommodate outages of up to 14 days for the A or B EDG. No changes are being proposed to the existing AOT. Therefore, the proposed TS change replacing the GTG with portable DGs is acceptable and consistent with the staff technical positions in BTP 8-8.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the New Jersey State official was notified of the proposed issuance of the amendment on March 13, 2019. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes requirements with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20, and changes surveillance requirements. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (83 FR 26106). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) there is reasonable assurance that such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributors: H. Kodali
J. Hughey

Date: April 30, 2019

SUBJECT: HOPE CREEK GENERATING STATION – ISSUANCE OF AMENDMENT NO. 216 RE: REVISE TECHNICAL SPECIFICATION 3/4.8.1, “A.C. SOURCES – OPERATING,” ACTION FOR INOPERABLE DIESEL GENERATOR (EPID L-2018-LLA-0079) DATED APRIL 30, 2019

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***by memorandum **by e-mail**

OFFICE	NRR/DORL/LPL1/PM	NRR/DORL/LPL1/LA	NRR/DRA/APOB/BC*
NAME	JKim	LRonewicz	CJFong
DATE	03/20/2019	03/19/2019	11/14/2018
OFFICE	NRR/DE/EEOB/BC(A)*	NRR/DSS/STSB/BC**	OGC – NLO**
NAME	KNguyen	VCusumano	KGamin
DATE	02/07/2019	03/20/2019	04/09/2019
OFFICE	NRR/DORL/LPL1/BC	NRR/DORL/LPL1/PM	
NAME	JDanna (JTobin for)	JKim	
DATE	04/18/2019	04/30/2019	

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