March 30, 2000

Template-NRR-057

Mr. Harold W. Keiser Chief Nuclear Officer & President Nuclear Business Unit Public Service Electric & Gas Company Post Office Box 236 Hancocks Bridge, NJ 08038

SUBJECT: SALEM NUCLEAR GENERATING STATION, UNIT NOS. 1 AND 2, ISSUANCE OF AMENDMENT RE: EMERGENCY DIESEL GENERATOR 24-HOUR LOAD TEST AT ANY MODE (TAC NOS. MA6154 AND MA6155)

Dear Mr. Keiser:

The Commission has issued the enclosed Amendment Nos. 229 and 210 to Facility Operating License Nos. DPR-70 and DPR-75 for the Salem Nuclear Generating Station, Unit Nos. 1 and 2. These amendments consist of changes to the Technical Specifications (TSs) in response to your application dated July 23, 1999, as supplemented on September 13, 1999. On December 15, 1999, the Nuclear Regulatory Commission staff sent a request for additional information which was responded to by PSE&G by letter dated January 31, 2000.

These amendments remove the restriction on performing the 24-hour endurance run test of the emergency diesel generators every 18 months (only during shutdown conditions). Additionally, for Salem, Unit No. 1, a note associated with the one-time extension of this surveillance during the unit's operating cycle 13 is removed. Unit 1 is currently in its 14th cycle.

A copy of our safety evaluation is also enclosed. Notice of Issuance will be included in the Commission's biweekly <u>Federal Register</u> notice.

Sincerely,

/RA/

Robert Fretz, Project Manager, Section 2 Project Directorate I Division of Licensing Project Management Office of Nuclear Reactor Regulation

Docket Nos. 50-272 and 50-311

Enclosures: 1. Amendment No. 229 to License No. DPR-70

- 2. Amendment No. 210 to
 - License No. DPR-75
- 3. Safety Evaluation

cc w/encls: See next page

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Mr. Harold W. Keiser Chief Nuclear Officer & President Nuclear Business Unit Public Service Electric & Gas Company Post Office Box 236 Hancocks Bridge, NJ 08038

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Official Record Copy



WASHINGTON, D.C. 20555-0001

March 30, 2000

Mr. Harold W. Keiser Chief Nuclear Officer & President Nuclear Business Unit Public Service Electric & Gas Company Post Office Box 236 Hancocks Bridge, NJ 08038

SUBJECT: SALEM NUCLEAR GENERATING STATION, UNIT NOS. 1 AND 2, ISSUANCE OF AMENDMENT RE: EMERGENCY DIESEL GENERATOR 24-HOUR LOAD TEST AT ANY MODE (TAC NOS. MA6154 AND MA6155)

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The Commission has issued the enclosed Amendment Nos. 229 and 210 to Facility Operating License Nos. DPR-70 and DPR-75 for the Salem Nuclear Generating Station, Unit Nos. 1 and 2. These amendments consist of changes to the Technical Specifications (TSs) in response to your application dated July 23, 1999, as supplemented on September 13, 1999. On December 15, 1999, the Nuclear Regulatory Commission staff sent a request for additional information which was responded to by PSE&G by letter dated January 31, 2000.

These amendments remove the restriction on performing the 24-hour endurance run test of the emergency diesel generators every 18 months (only during shutdown conditions). Additionally, for Salem, Unit No. 1, a note associated with the one-time extension of this surveillance during the unit's operating cycle 13 is removed. Unit 1 is currently in its 14th cycle.

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Robert Fretz, Project Manager, Section 2 Project Directorate I Division of Licensing Project Management Office of Nuclear Reactor Regulation

Docket Nos. 50-272 and 50-311

Enclosures: 1. Amendment No.229 to License No. DPR-70

- 2. Amendment No.210 to License No. DPR-75
- 3. Safety Evaluation

cc w/encls: See next page

Salem Nuclear Generating Station, Units 1 and 2

cc:

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WASHINGTON, D.C. 20555-0001

PUBLIC SERVICE ELECTRIC & GAS COMPANY

PHILADELPHIA ELECTRIC COMPANY

DELMARVA POWER AND LIGHT COMPANY

ATLANTIC CITY ELECTRIC COMPANY

DOCKET NO. 50-272

SALEM NUCLEAR GENERATING STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No.229 License No. DPR-70

- 1. The Nuclear Regulatory Commission (the Commission or the NRC) has found that:
 - A. The application for amendment filed by the Public Service Electric & Gas Company, Philadelphia Electric Company, Delmarva Power and Light Company and Atlantic City Electric Company (the licensees) dated July 23, 1999, as supplemented September 13, 1999, and January 31, 2000, 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. DPR-70 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 229, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 60 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

B.C. Buckley for

James W. Clifford, Chief, Section 2 Project Directorate I Division of Licensing Project Management Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: March 30, 2000

ATTACHMENT TO LICENSE AMENDMENT NO.229

FACILITY OPERATING LICENSE NO. DPR-70

DOCKET NO. 50-272

Replace the following pages of the Appendix A, Technical Specifications, with the attached revised pages as indicated. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change. Overleaf pages have been provided.

Remove	Insert
3/4 8-5	3/4 8-5
3/4 8-5a	3/4 8-5a

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- c) Verifying that all nonessential automatic diesel generator trips (i.e., other than engine overspeed, lube oil pressure low, 4 KV bus differential and generator differential), are automatically bypassed upon loss of voltage on the vital bus concurrent with a safety injection actuation signal.
- 7. Deleted
- 8. Verifying that the auto-connected loads to each diesel generator do not exceed the two hour rating of 2860 kw.
- 9. Verifying that with the diesel generator operating in a test mode (connected to its bus), a simulated safety injection signal overrides the test mode by (1) returning the diesel generator to standby operation and (2) automatically energizing the emergency loads with offsite power.
- e. At least once per ten years or after any modifications which could affect diesel generator interdependence by starting all diesel generators simultaneously*, during shutdown, and verifying that all diesel generators accelerate to at least 58.8 Hz in less than or equal to 13 seconds.
- f. At least once per 18 months, the following test shall be performed within 5 minutes of diesel shutdown after the diesel has operated for at least two hours at 2500-2600 kw**:

Verifying the diesel generator starts and achieves \geq 3910 volts and \geq 58.8 Hz in \leq 13 seconds, and subsequently achieves steady state voltage of > 3910 and < 4400 volts and frequency of 60 ± 1.2 Hz.

g. At least once per 18 months verifying the diesel generator operates for at least 24 hours*. During the first 2 hours of this test, the diesel generators shall be loaded to 2760-2860 Kw**. During the remaining 22 hours of this test, the diesel generator shall be loaded to 2500-2600 Kw**. The steady state voltage and frequency shall be maintained at ≥ 3910 and ≤ 4580 volts and 60 ± 1.2 Hz during this test.

4.8.1.1.3 The diesel fuel oil storage and transfer system shall be demonstrated OPERABLE:

- a. At least once per 31 days by:
 - 1. Verifying the level in each of the above required fuel storage tanks.
 - 2. Verifying that both fuel transfer pumps can be started and transfer fuel from the fuel storage tanks to the day tanks.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

b. At least once per 92 days by verifying that a sample of diesel fuel from each of the above required fuel storage tanks is within the acceptable limits specified in Table 1 of ASTM D975-77 when checked for viscosity, water and sediment.

4.8.1.1.4 Reports - NOT USED

^{*} Surveillance testing may be conducted in accordance with the manufacturer's recommendations regarding engine prelube, warm-up and loading (unless loading times are specified in the individual Surveillance Requirements).

^{**} This band is meant as guidance to preclude routine exceedances of the diesel generator manufacturer's design ratings. Loads in excess of this band for special testing or momentary variations due to changing bus loads shall not invalidate the test.



WASHINGTON, D.C. 20555-0001

PUBLIC SERVICE ELECTRIC & GAS COMPANY

PHILADELPHIA ELECTRIC COMPANY

DELMARVA POWER AND LIGHT COMPANY

ATLANTIC CITY ELECTRIC COMPANY

DOCKET NO. 50-311

SALEM NUCLEAR GENERATING STATION, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 210 License No. DPR-75

- 1. The Nuclear Regulatory Commission (the Commission or the NRC) has found that:
 - A. The application for amendment filed by the Public Service Electric & Gas Company, Philadelphia Electric Company, Delmarva Power and Light Company and Atlantic City Electric Company (the licensees) dated dated July 23, 1999, as supplemented September 13, 1999, and January 31, 2000, 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. DPR-75 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 210° , are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 60 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

James W. Clifford, Chief, Section 2 Project Directorate I Division of Licensing Project Management Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: March 30, 2000

ATTACHMENT TO LICENSE AMENDMENT NO. 210

FACILITY OPERATING LICENSE NO. DPR-75

DOCKET NO. 50-311

Replace the following page of the Appendix A, Technical Specifications, with the attached revised page as indicated. The revised page is identified by amendment number and contains marginal lines indicating the areas of change. Overleaf pages have been provided.

Remove

<u>Insert</u>

3/4 8-5

3/4 8.5

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

c) Verifying that all nonessential automatic diesel generator trips (i.e., other than engine overspeed, lube oil pressure low, 4 KV Bus differential and generator differential) are automatically bypassed upon loss of voltage on the vital bus concurrent with a safety injection actuation signal.

- 7. Deleted
- 8. Verifying that the auto-connected loads to each diesel generator do not exceed the two hour rating of 2860 kw.
- 9. Verifying that with the diesel generator operating in a test mode (connected to its bus), a simulated safety injection signal overrides the test mode by (1) returning the diesel generator to standby operation and (2) automatically energizing the emergency loads with offsite power.
- e. At least once per 10 years or after any modifications which could affect diesel generator interdependence by starting all diesel generators simultaneously*, during shutdown, and verifying that all diesel generators accelerate to at least 58.8 Hz in less than or equal to 13 seconds.
- f. At least once per 18 months, the following test shall be performed within 5 minutes of diesel shutdown after the diesel has operated for at least two hours at 2500-2600 kw**:

Verifying the diesel generator starts and achieves \geq 3910 volts and \geq 58.8 Hz in \leq 13 seconds, and subsequently achieves steady state voltage of \geq 3910 and \leq 4400 volts and frequency of 60 ± 1.2 Hz.

g. At least once per 18 months verifying the diesel generator operates for at least 24 hours*. During the first 2 hours of this test, the diesel generators shall be loaded to 2760-2860 Kw**. During the remaining 22 hours of this test, the diesel generator shall be loaded to 2500-2600 Kw**. The steady state voltage and frequency shall be maintained at ≥ 3910 and ≤ 4580 volts and 60 ± 1.2 Hz during this test.

4.8.1.1.3 The diesel fuel oil storage and transfer system shall be demonstrated OPERABLE:

- a. At least once per 31 days by:
 - 1.Verifying the level in each of the above required fuel storage tanks.
 - 2.Verifying that both fuel transfer pumps can be started and transfer fuel from the fuel storage tanks to the day tanks.

Amendment No. 210



WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NOS. 229 AND 210 TO FACILITY OPERATING

LICENSE NOS. DPR-70 AND DPR-75

PUBLIC SERVICE ELECTRIC & GAS COMPANY

PHILADELPHIA ELECTRIC COMPANY

DELMARVA POWER AND LIGHT COMPANY

ATLANTIC CITY ELECTRIC COMPANY

SALEM NUCLEAR GENERATING STATION, UNIT NOS. 1 AND 2

DOCKET NOS. 50-272 AND 50-311

1.0 INTRODUCTION

By letter dated dated July 23, 1999, as supplemented September 13, 1999, and January 31. 2000, the Public Service Electric & Gas Company (the licensee) submitted a request for changes to the Salem Nuclear Generating Station, Unit Nos. 1 and 2, Technical Specifications (TSs). The requested changes would amend the TSs to remove the restriction on performing the 24-hour endurance run test of emergency diesel generators (EDGs) every 18 months only during shutdown. The purpose of this proposed change is to provide the licensee with greater flexibility in optimizing its schedule and the use of its resources, while still protecting the health and safety of the public and station personnel. Performance of the 24-hour endurance run test surveillance places a significant burden on the Operations Department and station personnel because of its personnel-intensive requirements at a time when resources are most limited. Additionally, for Salem Unit 1 only, a footnote associated with this surveillance would be eliminated. The footnote (***) is defined at the bottom of TS page 3/4 8-5a. It is associated with a one-time extension of this surveillance during cycle 13, and its deletion is purely administrative since it no longer applies. The January 31, 2000, letter provided clarifying information that did not change the initial proposed no significant hazards consideration determination and did not expand the scope of the original application as published.

2.0 BACKGROUND

At present, the TS surveillance requirement (SR) 4.8.1.1.2.d.7 requires that the operability of each EDG be determined every 18 months by operating each EDG for 24 hours in parallel with the offsite power system during shutdown. The licensee has requested that this restriction of performing this surveillance only during shutdown be deleted from the TSs as a change that will

reduce the complexity of activities during refueling outages and that may shorten the duration of those outages as well as reduce human performance errors while not affecting the margin of safety. The licensee states that the electrical lineup for performing this SR will be the same as the lineup necessary for performing SR 4.8.1.1.2.a.2 (i.e., the monthly 1-hour operability run). The difference between these two SRs is the duration of the surveillances. SR 4.8.1.1.2.a.2 requires that every 31 days the operability of each diesel generator be demonstrated by synchronizing it to the grid for 60 minutes or more, whereas SR 4.8.1.1.2.d.7 requires parallel operation for 24 hours. Specifically, the licensee proposed to delete the existing SR 4.8.1.1.2.d.7 and add a new SR 4.8.1.1.2.g that would read as follows:

At least once per 18 months verifying the diesel generator operates for at least 24 hours*. During the first 2 hours of this test, the diesel generator shall be loaded to 2760 - 2860 kW**. During the remaining 22 hours of this test, the diesel generator shall be loaded to 2500 -2600 kW**. The steady state voltage and frequency shall be maintained at \geq 3910 and \leq 4580 volts and 60 ± 1.2 Hz during this test.

- * Surveillance testing may be conducted in accordance with the manufacturer's recommendations regarding engine prelube, warm-up and loading (unless loading times are specified in the individual Surveillance Requirement).
- ** This band is meant as guidance to preclude routine exceedances of the diesel generator manufacturer's design ratings. Loads in excess of this band for special testing or momentary variations due to changing bus loads shall not invalidate the test.

The licensee stated that the standby AC power source consists of three automatically starting EDGs per unit. Each diesel generator set supplies power to one 4160-V vital bus (A, B, and C) in the event of a loss-of-offsite-power (LOOP). Any two of the three diesel generators and their associated vital busses can supply sufficient power for operation of the required safeguard equipment for a safety injection (SI) coincident with a LOOP. Each EDG is provided with an independent safeguard equipment controller (SEC), which initiates the startup and/or loading of the diesel generators during any of the modes of operations. During conditions of automatic startup and/or loading for all modes, the following criteria have been met in the control system design:

- Each vital bus control is independent of the other two.
- Manual control of equipment is locked out until the automatic load sequencing is complete.
- Safeguard actuation signals cannot be interrupted by any automatic device.
- Following completion of the automatic load sequencing and its reset, manual initiation of the loading sequence is available to the operator.
- Off-normal diesel conditions are alarmed in the control room.
- SI conditions take precedence over all other operating modes.
- Diesels operating in a "test" mode at the occurrence of a blackout and/or SI are automatically separated from the bus (breaker trip) and reloaded according to prevailing conditions.
- No sequential loading can occur until the diesel generator breaker is closed.

 Inadvertent tripping of the diesel generator output breaker is precluded by locking out the shutdown relay when a safeguard initiation signal is present.

3.0 EVALUATION

The staff reviewed the postulated events associated with the EDG start signals in relation to the proposed change to the EDG 24-hour surveillance at power. The events to be discussed are: (1) SI without a LOOP, (2) a LOOP (3) an SI with a LOOP, and (4) an SI with one 4-kV vital bus undervoltage (UV).

(1) SI without a LOOP: The solid-state protection system sends an SI signal to each SEC cabinet. The SEC trips the EDG breaker and the EDG automatically switches out of test mode (if in a test mode); the EDG control circuits change from "Droop" mode to "Isochronous" mode, and the EDG output breaker is confirmed that it is open. All required safety-related loads are simultaneously started on the vital bus, except for the containment fan cooling units (CFCUs). The SEC assumes that the CFCUs were running at high speed, and a trip signal is generated. The SEC will restart the CFCU in the low-speed mode following a 20-second time delay. Manual control of the required safety related loads is locked out until the SEC is reset. Any pumps in auto will remain in auto but will be locked out until the SEC is reset.

(2) LOOP: Each SEC receives inputs from vital buses blackout (70%) and sustained degraded UV relays. If at least two of three vital buses indicate a UV/blackout condition exists, either by operation of the specific sustained degraded voltage relays or the UV relays, all three SEC cabinets will initiate a LOOP loading sequence. The SEC trips all 4160-VAC vital bus and 460VAC breakers, except the breakers that feed the transformers for the 460/230-V vital buses. The SEC trips the breaker and switches the EDG out of test mode (if in a test mode) and starts the EDGs. When the EDG output breaker is closed (the signal maintained until the SEC is reset), loads required for a LOOP are sequenced on to the vital bus.

(3) SI with a LOOP condition: The SEC trips the breaker and switches the EDG out of test mode (if in a test mode) and starts the EDGs. When the EDG output breaker is closed (the signal is maintained until the SEC is reset), loads required for SI are sequenced on to the vital bus.

(4) SI with one 4-kV vital bus UV: Conditions 3 and 4 loading sequences are the same and SEC uses the same sequencer for both Conditions 3 and 4. The only difference is the number of vital buses that are loading at the same time. Two vital buses that do not have a UV/blackout go through the Condition 1 sequence (simultaneous loading). The vital bus that has the UV/blackout condition or degraded voltage goes through the Condition 3 sequence (sequential loading).

Evaluation of EDG Response to Postulated Events During Testing

The proposed change to SR 4.8.1.1.2.d.7 will not result in a new or different configuration of the EDG system, because SR 4.8.1.1.2.a.2 requires the EDG to be operated in parallel with the offsite power sources for at least 1 hour during power operation on a monthly basis. The automatic response of the electrical distribution system to electrical disturbances and/or accidents, including EDG performance, is the same regardless of the test duration.

In addition, the ability of each EDG to survive load rejection without tripping is verified every 18 months in accordance with SR 4.8.1.1.2.d.2. This surveillance demonstrates the ability of the EDG to withstand a loss of load, as would occur in a normal SEC actuation, without compromising its ability to be ready to accept a new loading sequence and carry out its design safety function.

SR 4.8.1.1.2.d.9 requires, in part, that when the EDG is operating in a test mode (connected to its bus), a simulated SI signal overrides the test mode by, (1) returning the diesel generator to standby operation, and (2), automatically energizing the emergency loads with offsite power. This surveillance demonstrates the ability of the EDG to be disconnected from the grid, if in a test mode, on an accident signal and to be ready to accept a new loading sequence and carry out its design safety function.

The disturbance of the offsite power grid may result in the loss of the EDG because of overcurrent or reverse power, or a lockout device may be actuated, requiring local operator action to reset the lockout. At Salem station, the actuation of the generator differential protection relays will actuate the diesel unit trip relay (DUTR). Because only one EDG will be operated in parallel with the offsite power grid, only one EDG can be potentially affected by the assumed disturbance.

The EDG protection scheme was designed such that a loss of voltage or a sustained degraded voltage condition between the EDG undergoing testing and the offsite power system will abort the test by tripping the EDG or opening the EDG output breaker. If a LOOP occurred and the EDG failed to trip for such a fault, the associated UV/degraded voltage protection channel for this bus would not respond to a LOOP condition because this channel has not experienced a loss of power. However, the other two channels will respond to a LOOP condition. Failing to separate the EDG from the offsite power source in a loss of voltage or a degraded voltage condition would require the failure of a safety-related TS item. This UV protection of the 4160-V vital buses is required by Salem TS 3.3.2.1, Functional Units 7a and b, and is required to be operable in Modes 1, 2, and 3. This measure provides additional protection of the EDGs.

In this scenario, the Salem plant will remain within its design basis since safe shutdown can be achieved with the two remaining EDGs. However, considering the unlikely failure of the protective system to separate the EDG from the offsite power source, the licensee proposes to continuously monitor (through use of an operator) the EDG during the 24-hour endurance run. Resetting of the DUTR relay, which is located in the EDG control room, can be accomplished in a relative short time. Resetting the DUTR relay will allow the EDG to be started manually or automatically by the SEC, if required.

Therefore, since there is (1) no change to EDG automatic response, (2) reasonable assurance that the EDG in testing will survive a load reject condition, or be disconnected from the grid on an accident signal and ready to accept a new loading sequence, (3) protection for the EDG in the event of a LOOP or degraded voltage condition, and (4) further assurance that the Salem plant will remain within its design basis during testing, the staff finds the response by the EDG to a postulated event as a result of the proposed changes is acceptable.

The licensee has committed to implement the following administrative controls to manage the performance of the EDG 24-hour test during power operation:

- (1) Only one EDG will be tested at a time.
- (2) The remaining EDGs will be operable.
- (3) The operator will continuously monitor the EDG during testing.
- (4) On-line performance of the EDG 24-hour endurance run will not be performed during unstable grid conditions, such as severe weather conditions, the threat of severe weather conditions, electrical instability, or any maintenance or test conditions that could adversely affect the stability of the grid.

The above-listed administrative controls will be included in the TS surveillance test procedures and will be followed before performing the 24-hour test (TS SR 4.8.1.1.2.g) during power operation. The staff finds the implementation of the aforementioned controls through the use of administrative procedures to be acceptable.

In response to the staff's questions regarding plans for restricting additional maintenance or testing of required safety systems, subsystems, trains, components, and devices that depend on the remaining EDGs as sources of emergency power, the licensee stated that NC.WM-AP.ZZ0001(Q), Revision 1, "Work Management Process" (WMAP-0001), is the controlling document it uses for work management. The on-line methodology for scheduling work is a program that ensures that work operations are appropriately scheduled to ensure plant safety and equipment availability, as well as efficient use of station resources. The work control process ensures that redundant equipment will be kept operable during periods of maintenance or testing of a safety-related piece of equipment. The staff finds that the licensee's processes will adequately control EDG testing.

The staff's review included assessing events with the potential for perturbations on multiple buses when certain EDGs are being tested. The licensee stated that this is the same electrical lineup that exists during the performance of the normal 1-hour EDG test performed every 31 days. The licensee recognizes that synchronizing the EDG to the grid for an additional 23 hours once every cycle will expose the EDG to a possible electrical disturbance for a longer period. The automatic response of the electrical distribution system protection scheme to any potential electrical disturbances and/or accident is the same regardless of the test duration. The vital buses are loaded with equipment needed to support power operation. Manually transferring the bus to the other power transformer will unnecessarily challenge the stability of the system. The licensee believes that there is no net safety gain in the transfer of the in-feed breaker to the opposite station power transformer to align the EDG to one station power transformer. The installed protection scheme affords the necessary protection to ensure that no electrical disturbance or fault will cause more than one vital bus to be affected, in compliance with the licensing basis.

On the basis of its review, the staff finds the licensee's analysis satisfactory, and concludes that it is acceptable to perform the 24-hour load test during power operation.

4.0 RISK EVALUATION

The staff evaluated the potential risk impact of performing the 24-hour EDG load test parallel to the offsite power during power operation instead of during shutdown. The licensee performed

an assessment of the risk associated only with the increase in EDG unavailability to justify the change. In addition, as analyzed above, the EDG undergoing the 24-hour test is not truly "unavailable" because it can respond to accident and LOOP events. The calculated increase in average annual core damage frequency was 1.6E-7/year.

The staff agrees that the risk impact, from the increase in EDG unavailability would be small. An additional 24 hours per year of unavailability for each EDG is not expected to have a significant impact on plant risk. The staff concludes that the risk impact of the proposed change would be small. Therefore, the risk insights and findings support the proposed change.

5.0 STAFF CONCLUSION

The staff has reviewed the proposed change to remove the restriction to perform the 24-hour endurance run test of EDGs every 18 months only during shutdown from a deterministic and probabilistic risk assessment perspective. We conclude that the deterministic evaluation and available risk insights and findings support the proposed change.

6.0 STATE CONSULTATION

In accordance with the Commission's regulations, the New Jersey State official was notified of the proposed issuance of the amendments. The State official had no comments.

7.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement 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 (64 FR 54380). 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.

8.0 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) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

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