

November 4, 1994

Mr. W. R. Robinson
Vice President - Harris Plant
Carolina Power & Light Company
Shearon Harris Nuclear Power Plant
Post Office Box 165, Mail Code: Zone 1
New Hill, North Carolina 27562-0165

SUBJECT: ISSUANCE OF AMENDMENT NO. 51 TO FACILITY OPERATING LICENSE NO. NPF-63 REGARDING TS 3/4 8.1, AC SOURCES, FOR SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1 (TAC NO. M87819)

Dear Mr. Robinson:

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 51 to Facility Operating License No. NPF-63 for the Shearon Harris Nuclear Power Plant, Unit 1 (SHNPP). This amendment changes the Technical Specifications (TS) in response to your request dated September 28, 1993, as supplemented April 5, 1994, and September 12, 1994.

The amendment revises the SHNPP TS 3/4.8.1, AC Sources, and associated Bases to be consistent with NUREG-1431, "Standard Technical Specifications, Westinghouse Plants," dated September 1992.

A copy of the related Safety Evaluation is enclosed. Notice of Issuance will be included in the Commission's regular bi-weekly Federal Register notice.

Sincerely,
Original signed by:
Ngoc B. Le, Project Manager
Project Directorate II-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket No. 50-400

Enclosures:

- 1. Amendment No. 51 to NPF-63
- 2. Safety Evaluation

cc w/enclosures:
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AMENDMENT NO. 51 TO FACILITY OPERATING LICENSE NO. NPF-63 - HARRIS, UNIT 1

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J. Johnson, R-II

cc: Harris Service List

Mr. W. R. Robinson
Carolina Power & Light Company

Shearon Harris Nuclear Power Plant
Unit 1

cc:

Mr. H. Ray Starling
Manager - Legal Department
Carolina Power & Light Company
Post Office Box 1551
Raleigh, North Carolina 27602

Admiral Kinnaird R. McKee
214 South Morris Street
Oxford, Maryland 21654

Mr. Robert D. Martin
3382 Sean Way
Lawrenceville, Georgia 30244

Resident Inspector/Harris NPS
c/o U.S. Nuclear Regulatory Commission
5421 Shearon Harris Road
New Hill, North Carolina 27562-9998

Mr. J. W. Donahue
Plant Manager - Harris Plant
Carolina Power & Light Company
Shearon Harris Nuclear Power Plant
Post Office Box 165, MC: Zone 1
New Hill, North Carolina 27562-0165

Karen E. Long
Assistant Attorney General
State of North Carolina
Post Office Box 629
Raleigh, North Carolina 27602

Mr. Robert P. Gruber
Executive Director
Public Staff NCUC
Post Office Box 29520
Raleigh, North Carolina 27626

Public Service Commission
State of South Carolina
Post Office Drawer 11649
Columbia, South Carolina 29211

Regional Administrator, Region II
U.S. Nuclear Regulatory Commission
101 Marietta St., N.W. Suite 2900
Atlanta, Georgia 30323 27626

Mr. Dayne H. Brown, Director
Division of Radiation Protection
N.C. Department of Environmental
Commerce & Natural Resources
Post Office Box 27687
Raleigh, North Carolina 27611-7687

Mr. H. W. Habermeyer, Jr.
Vice President
Nuclear Services Department
Carolina Power & Light Company
Post Office Box 1551
Raleigh, North Carolina 27602



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

CAROLINA POWER & LIGHT COMPANY, et al.

DOCKET NO. 50-400

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 51
License No. NPF-63

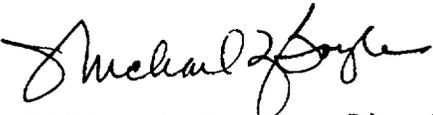
1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Carolina Power & Light Company, (the licensee), dated September 28, 1993, as supplemented April 5, 1994, and September 12, 1994, complies with the standards and requirements of the Atomic Energy 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;
 - 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-63 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, as revised through Amendment No. 51, are hereby incorporated into this license. Carolina Power & Light Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

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

FOR THE NUCLEAR REGULATORY COMMISSION


for William H. Bateman, Director
Project Directorate II-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: November 4, 1994

ATTACHMENT TO LICENSE AMENDMENT NO. 51

FACILITY OPERATING LICENSE NO. NPF-63

DOCKET NO. 50-400

Replace the following pages of the Appendix A Technical Specifications with the enclosed pages. The revised areas are indicated by marginal lines.

<u>Remove Pages</u>	<u>Insert Pages</u>
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3/4 8-1	3/4 8-1
3/4 8-2	3/4 8-2
3/4 8-3	3/4 8-3
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PLANT SYSTEMS

AUXILIARY FEEDWATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.1.2 At least three independent steam generator auxiliary feedwater pumps and associated flow paths shall be OPERABLE with:

- a. Two motor-driven auxiliary feedwater pumps, each capable of being powered from separate emergency buses, and
- b. One steam turbine-driven auxiliary feedwater pump capable of being powered from an OPERABLE steam supply system.

APPLICABILITY: MODES 1, 2, and 3.

ACTION:

- a. With one auxiliary feedwater pump inoperable, restore the required auxiliary feedwater pumps to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.
- b. With two auxiliary feedwater pumps inoperable, be in at least HOT STANDBY within 6 hours and in HOT SHUTDOWN within the following 6 hours.
- c. With three auxiliary feedwater pumps inoperable, immediately initiate corrective action to restore at least one auxiliary feedwater pump to OPERABLE status as soon as possible. (NOTE: LCO 3.0.3 and all other LCO Required Actions requiring MODE changes are suspended until one AFW train is restored to OPERABLE status. Following restoration of one AFW train, all applicable LCOs apply based on the time the LCOs initially occurred.)

SURVEILLANCE REQUIREMENTS

4.7.1.2.1 Each auxiliary feedwater pump shall be demonstrated OPERABLE:

- a. At least once per 31 days on a STAGGERED TEST BASIS by:
 1. Demonstrating that each motor-driven pump satisfies performance requirements by either:
 - a) Verifying each pump develops a differential pressure that (when temperature - compensated to 70°F) is greater than or equal to 1514 psid at a recirculation flow of greater than or equal to 50 gpm (25 KPPH), or
 - b) Verifying each pump develops a differential pressure that (when temperature - compensated to 70°F) is greater than or equal to 1259 psid at a flow rate of greater than or equal to 430 gpm (215 KPPH).

3/4.8 ELECTRICAL POW. SYSTEMS

3/4.8.1 A.C. SOURCES

OPERATING

LIMITING CONDITION FOR OPERATION

3.8.1.1 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

- a. Two physically independent circuits between the offsite transmission network and the onsite Class 1E distribution system, and
- b. Two separate and independent diesel generators, each with:
 1. A separate day tank containing a minimum of 1457 gallons of fuel, which is equivalent to a minimum indicated level of 40%**,
 2. A separate main fuel oil storage tank containing a minimum of 100,000 gallons of fuel, and
 3. A separate fuel oil transfer pump.
- c. Automatic Load Sequencers for Train A and Train B.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

- a. With one offsite circuit of 3.8.1.1.a inoperable:
 1. Perform Surveillance Requirement 4.8.1.1.1.a within 1 hour and once per 8 hours thereafter; and
 2. Restore the offsite circuit to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours; and
 3. Verify required feature(s) powered from the OPERABLE offsite A.C. source are OPERABLE. If required feature(s) powered from the OPERABLE offsite circuit are discovered to be inoperable at any time while in this condition, restore the required feature(s) to OPERABLE status within 24 hours from discovery of inoperable required feature(s) or declare the redundant required feature(s) powered from the inoperable A.C. source as inoperable and be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours or within the ACTION time of applicable ACTION statement(s) for the inoperable required feature(s), whichever is more limiting.

**Minimum indicated level with a fuel oil specific gravity of 0.83 and the level instrumentation calibrated to a reference specific gravity of 0.876.

ELECTRICAL POWER SYST.

A.C. SOURCES

OPERATING

LIMITING CONDITION FOR OPERATION

ACTION (Continued):

b. With one diesel generator of 3.8.1.1.b inoperable:

1. Perform Surveillance Requirement 4.8.1.1.1.a within 1 hour and once per 8 hours thereafter; and
- *2. Within 24 hours, determine the OPERABLE diesel generator is not inoperable due to a common cause failure or perform Surveillance Requirement 4.8.1.1.2.a.4#; and
3. Restore the diesel generator to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours; and
4. Verify required feature(s) powered from the OPERABLE diesel generator are OPERABLE. If required feature(s) powered from the OPERABLE diesel generator are discovered to be inoperable at any time while in this condition, restore the required feature(s) to OPERABLE status within 4 hours from discovery of inoperable required feature(s) or declare the redundant required feature(s) powered from the inoperable A.C. source as inoperable and be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours or within the ACTION time of applicable ACTION statement(s) for the inoperable required feature(s), whichever is more limiting.

c. With one offsite circuit and one diesel generator of 3.8.1.1 inoperable:

NOTE: Enter applicable Condition(s) and Required Action(s) of LCO 3/4.8.3, ONSITE POWER DISTRIBUTION - OPERATING, when this condition is entered with no A.C. power to one train.

1. Restore one of the inoperable A.C. sources to OPERABLE status within 12 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
2. Following restoration of one A.C. source (offsite circuit or diesel generator), restore the remaining inoperable A.C. source to OPERABLE status pursuant to requirements of either ACTION a or b, based on the time of initial loss of the remaining A.C. source.

*This ACTION is required to be completed regardless of when the inoperable EDG is restored to OPERABILITY.

#Activities that normally support testing pursuant to 4.8.1.1.2.a.4, which would render the diesel inoperable (e.g., air roll), shall not be performed for testing required by this ACTION statement.

ELECTRICAL POWER SYSTEMS

A.C. SOURCES

OPERATING

LIMITING CONDITION FOR OPERATION

ACTION (Continued):

- d. With two of the required offsite A.C. sources inoperable:
1. Restore one offsite circuit to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours; and
 2. Verify required feature(s) are OPERABLE. If required feature(s) are discovered to be inoperable at any time while in this condition, restore the required feature(s) to OPERABLE status within 12 hours from discovery of inoperable required feature(s) or declare the redundant required feature(s) inoperable and be in at least HOT STANDBY within the next 6 hours and COLD SHUTDOWN within the following 30 hours or within the ACTION time of applicable ACTION statement(s) for the inoperable required feature(s), whichever is more limiting.
 3. Following restoration of one offsite A.C. source, restore the remaining offsite A.C. source in accordance with the provisions of ACTION a with the time requirement of that ACTION based on the time of initial loss of the remaining inoperable A.C. source.
- e. With two of the required diesel generators inoperable:
1. Perform Surveillance Requirement 4.8.1.1.1.a within 1 hour and once per 8 hours thereafter; and
 - #2. Restore one of the diesel generators to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
 3. Following restoration of one diesel generator, restore the remaining diesel generator in accordance with the provisions of ACTION b with the time requirement of that ACTION based on the time of initial loss of the remaining inoperable diesel generator.
- f. With three or more of the required A.C. sources inoperable:
1. Immediately enter Technical Specification 3.0.3.
 2. Following restoration of one or more A.C. sources, restore the remaining inoperable A.C. sources in accordance with the provisions of ACTION a,b,c,d and/or e as applicable with the time requirement of that ACTION based on the time of initial loss of the remaining inoperable A.C. sources.
- g. With contiguous events of either an offsite or onsite A.C. source becoming inoperable and resulting in failure to meet the LCO:
1. Within 6 days, restore all A.C. sources required by 3.8.1.1 or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

#Activities that normally support testing pursuant to 4.8.1.1.2.a.4, which would render the diesel inoperable (e.g., air roll), shall not be performed for testing required by this ACTION statement.

ELECTRICAL POWER SYSTEM

A.C. SOURCES

OPERATING

LIMITING CONDITION FOR OPERATION

ACTION (Continued):

- h. With one automatic load sequencer inoperable:
1. Restore the automatic load sequencer to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours and COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.8.1.1.1 Each of the above required physically independent circuits between the offsite transmission network and the onsite Class 1E distribution system shall be:

- a. Determined OPERABLE at least once per 7 days by verifying correct breaker alignment and power availability, and
- b. Demonstrated OPERABLE at least once per 18 months by manually transferring the onsite Class 1E power supply from the unit auxiliary transformer to the startup auxiliary transformer.

4.8.1.1.2 Each diesel generator shall be demonstrated OPERABLE:

- a. At least once per 31 days on a STAGGERED TEST BASIS by:
 1. Verifying the fuel level in the day tank,
 2. Verifying the fuel level in the main fuel oil storage tank,
 3. Verifying the fuel oil transfer pump can be started and transfers fuel from the storage system to the day tank,
 4. Verifying the diesel generator can start** and accelerate ## to synchronous speed (450 rpm) with generator voltage and frequency 6900 ± 690 volts and 60 ± 1.2 Hz,
 5. Verifying the diesel generator is synchronized, gradually loaded** to an indicated 6200-6400 kW*** and operates for at least 60 minutes,
 6. Verifying the pressure in at least one air start receiver to be greater than or equal to 190 psig, and
 7. Verifying the diesel generator is aligned to provide standby power to the associated emergency buses.

**This test shall be conducted in accordance with the manufacturer's recommendations regarding engine prelube and warmup procedures, and as applicable, regarding loading recommendations.

***This band is meant as guidance to avoid routine overloading of the engine. Loads in excess of this band for special testing or momentary variations due to changing bus loads shall not invalidate the test.

The voltage and frequency conditions shall be met within 10 seconds or gradual acceleration to no-load conditions per vendor recommendations will be an acceptable alternative.

ELECTRICAL POWER SYSTEM

A.C. SOURCES

OPERATING

SURVEILLANCE REQUIREMENTS (Continued)

4.8.1.1.2 (Continued)

- b. Check for and remove accumulated water:
 - 1. From the day tank, at least once per 31 days and after each operation of the diesel where the period of operation was greater than 1 hour, and
 - 2. From the main fuel oil storage tank, at least once per 31 days.
- c. By sampling new fuel oil in accordance with ASTM-D4057-81 prior to addition to storage tanks and:
 - 1. By verifying, in accordance with the tests specified in ASTM-D975-81 prior to addition to the storage tanks, that the sample has:
 - a) An API Gravity of within 0.3 degrees at 60°F, or a specific gravity of within 0.0016 at 60°F, when compared to the supplier's certificate, or an absolute specific gravity at 60°F of greater than or equal to 0.83 but less than or equal to 0.89, or an API gravity of greater than or equal to 26 degrees but less than or equal to 38 degrees.
 - b) A kinematic viscosity at 40°C of greater than or equal to 1.9 centistokes, but less than or equal to 4.1 centistokes, if the gravity was not determined by comparison with the supplier's certification;
 - c) A flash point equal to or greater than 125°F; and
 - d) A clear and bright appearance with proper color when tested in accordance with ASTM-D4176-82.
 - 2. By verifying within 30 days of obtaining the sample that the other properties specified in Table 1 of ASTM-D975-81 are met when tested in accordance with ASTM-D975-81 except that the analysis for sulfur may be performed in accordance with ASTM-D1552-79 or ASTM-D2622-82.
- d. At least once every 31 days by obtaining a sample of fuel oil from the storage tank, in accordance with ASTM-D2276-78, and verifying that total particulate contamination is less than 10 mg/liter when checked in accordance with ASTM-D2276-78, Method A.
- e. At least once per 184 days, on a STAGGERED TEST BASIS, the diesel generators shall be started** and accelerated to at least 450 rpm in less than or equal to 10 seconds. The generator voltage and frequency shall be 6900 ± 690 volts and 60 ± 1.2 Hz in less than or equal to 10 seconds after the start signal.

**This test shall be conducted in accordance with the manufacturer's recommendations regarding engine prelube and warmup procedures, and as applicable regarding loading recommendations.

TABLE 4.8-1 HAS BEEN DELETED

3/4.8 ELECTRICAL PG. SYSTEMS

BASES

3/4.8.1, 3/4.8.2, AND 3/4.8.3 A.C. SOURCES, D.C. SOURCES, AND ONSITE POWER DISTRIBUTION

The OPERABILITY of the A.C. and D.C. power sources and associated distribution systems during operation ensures that sufficient power will be available to supply the safety-related equipment required for: (1) the safe shutdown of the facility, and (2) the mitigation and control of accident conditions within the facility. The minimum specified independent and redundant A.C. and D.C. power sources and distribution systems satisfy the requirements of General Design Criterion 17 of Appendix A to 10 CFR Part 50.

The switchyard is designed using a breaker-and-a-half scheme. The switchyard currently has seven connections with the CP&L transmission network; each of these transmission lines is physically independent. The switchyard has one connection with each of the two Startup Auxiliary Transformers and each SAT can be fed directly from an associated offsite transmission line. The Startup Auxiliary Transformers are the preferred power source for the Class 1E ESF buses. The minimum alignment of offsite power sources will be maintained such that at least two physically independent offsite circuits are available. The two physically independent circuits may consist of any two of the incoming transmission lines to the SATs (either through the switchyard or directly) and into the Class 1E system. As long as there are at least two transmission lines in service and two circuits through the SATs to the Class 1E buses, the LCO is met.

During MODES 5 and 6, the Class 1E buses can be energized from the offsite transmission network via a combination of the main transformers, and unit auxiliary transformers. This arrangement may be used to satisfy the requirement of one physically independent circuit.

The ACTION requirements specified for the levels of degradation of the power sources provide restriction upon continued facility operation commensurate with the level of degradation. The OPERABILITY of the power sources are consistent with the initial condition assumptions of the safety analyses and are based upon maintaining at least one redundant set of onsite A.C. and D.C. power sources and associated distribution systems OPERABLE during accident conditions coincident with an assumed loss-of-offsite power and single failure of the other onsite A.C. source. The A.C. and D.C. source allowable out-of-service times are based on Regulatory Guide 1.93, "Availability of Electrical Power Sources," December 1974. There are additional ACTION requirements to verify that all required feature(s) that depend on the remaining OPERABLE A.C. sources as a source of emergency power, are also OPERABLE. These requirements allow a period of time to restore any required feature discovered to be inoperable, e.g. out-of-service for maintenance, to an OPERABLE status. If the required feature(s) cannot be restored to an OPERABLE status, the ACTION statement requires the redundant required feature, i.e. feature receiving power from an inoperable A.C. source, to be declared inoperable and a controlled plant shutdown performed. The allowed operating times to restore an inoperable required feature to an OPERABLE status is based on the requirements in NUREG 1431. The term "verify", as used in these ACTION statements means to administratively check by examining logs or other information to determine the OPERABILITY of required feature(s). It does not mean to perform the Surveillance Requirement needed to demonstrate the OPERABILITY of the required feature(s).



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 51 TO FACILITY OPERATING LICENSE NO. NPF-63

CAROLINA POWER & LIGHT COMPANY

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1

DOCKET NO. 50-400

1.0 INTRODUCTION

By letter dated September 28, 1993, as supplemented April 5, 1994, and September 12, 1994, Carolina Power & Light Company (CP&L, licensee) submitted a request for change to the Shearon Harris Nuclear Power Plant, Unit 1 (SHNPP), Technical Specifications (TS). The request would revise TS Section 3/4 8.1, A.C. Sources - Operating, and its associated bases, to be consistent with NUREG-1431, "Standard Technical Specifications, Westinghouse Plants," dated September 1992.

In the April 5, 1994, letter, the licensee added an action statement to the previously submitted TS pages related to the operability of the automatic load sequencer. The action statement states if the automatic load sequencer is inoperable, it has to be restored to an operable status within 24 hours.

In the September 12, 1994, letter, the licensee provided additional justification for a 24 hour inoperability period for the automatic load sequencer since NUREG-1431 establishes a generic inoperability period of only 12 hours. In addition, the licensee eliminated TS Table 4.8.1 in response to the NRC Generic Letter 94-01, "Removal of Accelerated Testing and Special Reporting Requirements for Emergency Diesel Generators," issued on May 31, 1994, and committed to implement a maintenance program for the plant emergency diesel generators consistent with 10 CFR 50.65 (the Maintenance Rule).

The above supplemental changes were made at the request of the NRC staff following a telephone conference on February 24, 1994, and another staff request for additional information on May 20, 1994. These supplemental changes are within the scope of the original application and did not change the initial proposed no significant hazards consideration determination.

2.0 EVALUATION

The licensee proposed changes in three areas to: (1) revise action statements in TS Section 3/4.8.1 and add new action statements to the TS; (2) provide for the slow-start testing of the emergency diesel generators (EDGs) and separate EDG start and load testing into separate requirements; and (3) eliminate TS Table 4.8-1, Diesel Generator Test Schedule. In addition, the licensee proposed to add a Note regarding mode changes to TS 3/4.7.1.2, Auxiliary

Feedwater [AFW] System. The NRC staff's evaluation of the licensee's proposed changes follows:

2.1 Delete EDG Operability Verification Requirements From TS Section 3.8.1.1, Action Statements a and e

TS Section 3.8.1.1, Action Statements a and e, now require that if one or both offsite sources become inoperable, EDGs must be started and loaded with the offsite grid to demonstrate their operability. NUREG-1431 does not require testing the EDGs in this situation.

The NRC staff has reviewed the Final Safety Analysis Report for the design of the onsite emergency ac power system and finds that the EDGs are isolated from their respective safety buses by normally open circuit breakers; therefore, any offsite power loss would not affect the reliability of either EDG, except during loaded-by-grid tests.

The NRC staff finds that if an offsite power source is lost, the associated EDG will start and connect to its safety bus. Thus, the present TS requirement to test the other EDG by loading it with the remaining ac source would increase the risk of its loss. For this reason, the NRC staff issued NRC Information Notice 84-69 to warn against testing an EDG by loading it with an offsite power supply when offsite sources are threatened by severe weather, overloaded, or otherwise degraded.

The NRC staff concurs with the licensee that the requirements in TS Section 3.8.1.1, Action Statements a and e, impose unnecessary testing on the EDGs whose reliability has already been sufficiently demonstrated by required surveillance tests. The NRC staff finds that the deletion of the EDG test requirements in TS Section 3.8.1.1 is consistent with NUREG-1431 and is therefore, acceptable.

2.2 Add Alternatives to EDG Surveillance Requirements in TS Section 3.8.1.1 Action Statements b and c

The licensee proposes changes to present TS Section 3.8.1.1, Action Statements b and c, to allow an alternative to the current surveillance requirements for testing the redundant EDG if it can be determined that the cause of the inoperable EDG is not a common-mode failure.

The NRC staff has reviewed the EDG surveillance requirements in current TS Section 3.8.1.1, Action Statements b and c, and finds that if one EDG becomes inoperable, or if one EDG and one offsite source become inoperable, the licensee must demonstrate that the second EDG is operable by loading it with the offsite power grid.

In this situation, NUREG-1431 recommends that the licensee perform an EDG start-only test or verify that the EDG failure is not a common cause failure that could affect the reliability of the redundant EDG. If the cause of the initial inoperable EDG cannot be determined, the engine start test required by NUREG-1431 must be performed within 24 hours. The NRC staff finds that the proposed changes to the EDG surveillance requirements in Section 3.8.1.1,

Action Statements b and c, are consistent with NUREG-1431 and, therefore, are acceptable.

2.3 Increase Action Time for Action Statement d.1 in TS Section 3.8.1.1 and Proposed TS Section 3.8.1.1.b.4

The licensee proposes to increase the maximum verification time for loads served by the remaining EDG, when one EDG is inoperable, from the present 2 hours to 4 hours; the 4 hour time is consistent with NUREG-1431.

TS Section 3.8.1.1, Action Statement d.1, now requires if one EDG becomes inoperable all safety-related equipment that depends on the remaining EDG be verified operable within 2 hours or a plant shutdown should commence.

The basis for the 4-hour period in NUREG-1431 is that the probability that a design-basis accident would occur in conjunction with the loss of an EDG is much lower than the probability of either event, separately.

The NRC staff has reviewed this proposed change and finds that the increased time of 4 hours is also consistent with Regulatory Guide 1.93, "Availability of Electric Power Sources," which allows a limited operating time to restore an inoperable component. Therefore, the NRC staff finds the proposed change to be acceptable.

2.4 Verification of Two Offsite Sources in TS Section 3.8.1.1, Action Statement f

The licensee proposes to change the section label from 3.8.1.1, Action Statement f, to TS Section 3.8.1.1, Action Statement e, and made editorial changes for consistency with the rest of TS. Therefore, the NRC staff finds the proposed change to be minor in nature and acceptable.

2.5 Modify Action Statements for Verification of Required Features in TS Section 3.8.1.1, Action Statements a, b and d

The licensee proposes to change TS Section 3.8.1.1, Action Statements a, b, and d, to make them consistent with NUREG-1431.

TS Section 3.8.1.1, Action Statement a, requires that when one offsite power source becomes inoperable, it be demonstrated operable by verifying breaker alignment and power availability.

For this event, NUREG-1431 recommends two actions: Action A1, verification of breaker alignment and power availability, and Action A2, declaration of inoperability, within 24 hours, of required safety functions with no offsite power available, when their redundant required feature is inoperable.

NUREG-1431, Action A2, only applies if an associated train cannot be powered from an offsite source. This requirement is intended to provide assurance that another failure coincident with the failure of an EDG will not result in a complete loss of redundant safety functions.

The 24 hours allowed before the required declaration of inoperability of Action A2 is to allow time to restore functions. The time is acceptable because it reduces risk while allowing time for restoring offsite sources before subjecting the unit to transients associated with shutdown.

Similar requirements with different allowed times are invoked when one EDG (Action Statement b) or two offsite sources (Action Statement d) are inoperable.

The NRC staff finds the proposed changes are consistent with NUREG-1431 and, therefore, are acceptable.

2.6 Replace Section 3.8.1.1, Action Statement f with NUREG-1431 Action H

The licensee proposes to add a new Action Statement f to the TS to incorporate NUREG-1431, Action H. This new action statement will be invoked when three or more of the required power sources become inoperable. Proposed Action Statement f requires that TS Limiting Condition for Operation (LCO) 3.0.3 be entered into immediately and a controlled plant shutdown be started within 1 hour, unless one or more power supplies are restored; after one or more ac sources are restored, the remaining ac sources should be restored in accordance with Action Statement a, b, c, d, or e, as applicable, and the time requirement of that action should be based on the time of loss of the remaining inoperable ac sources.

The NRC staff finds the proposed Action Statement f is needed to cope with the possible loss of three redundant power supplies.

At this severely degraded level, any further losses in the ac power system will cause a loss of safety functions. Therefore, no additional time can be justified for continued operation, and the unit is required by LCO 3.0.3 to commence a controlled shutdown within 1 hour. The proposed action statement also requires that, after one or more ac sources is restored to operable status, the remaining ac sources may be restored in accordance with Action Statement a, b, c, d, or e, as applicable. The time allowed for these proposed actions would be based on the time that had elapsed since the remaining ac sources were lost.

Based on the above evaluation, the NRC staff finds that the proposed change is consistent with NUREG-1431 and, therefore, is acceptable.

2.7 Add Action Statement g to TS Section 3.8.1.1 To Incorporate NUREG-1431 Action G

The licensee proposes to add Action Statement g to TS Section 3.8.1.1 in order to incorporate NUREG-1431, Action G. This new action statement requires that when either an offsite or onsite ac source becomes inoperable, all ac sources required by TS Section 3.8.1.1 must be restored within 6 days, or the plant must be in at least Hot Standby within the next 6 hours and in Cold Shutdown within the following 30 hours.

The proposed Action Statement g requires that when continuous events of either an offsite or an onsite ac source becomes inoperable, and all ac sources cannot be restored within 6 days from discovery of a failure, the unit must be brought to a state in which the LCO does not apply. To reach the required state, the licensee proposes that the unit must be brought to at least Mode 3 within 6 hours and to Mode 5 within 30 hours.

On the basis of operating experience, the NRC staff finds that these allowed completion times are reasonable to reach the required unit conditions from full power in an orderly manner and without unnecessarily challenging plant systems.

The NRC staff finds that the licensee's proposed changes are consistent with NUREG-1431 and, therefore, are acceptable.

2.8 Add Action Statement h to TS Section 3.8.1.1 and LCO Section 3.8.1.1.c to Incorporate NUREG-1431, Action F, and LCO Section 3.8.1.c

The licensee proposes to add Section 3.8.1.1.c to LCO section 3.8.1.1 to include the LCO for load sequencers for train A and B. This change is consistent with NUREG-1431, and is, therefore, acceptable.

The licensee also proposes to add Action Statement h to Section 3.8.1.1 to incorporate NUREG-1431, Action F. This new action will be invoked when the required automatic load sequencer is inoperable. Action F of NUREG-1431 requires that if one required automatic load sequencer is inoperable, it must be restored to operable status within 12 hours. This 12-hour limit in NUREG-1431 is based on the complete loss of offsite and onsite power for one safety bus. However, the licensee has requested to increase the outage time for the load sequence from 12 hours to 24 hours based on the following justification: the loss of a sequencer does not result in the inability of operators to manually start the safety-related equipment from the main control room; that is, power is available from the bus to the safety-related components. Furthermore, the plant emergency operating procedures require the operators to manually start any safety-related loads that the sequencer would have started.

The NRC staff agrees with the licensee that an inoperable load sequencer need not be considered as a dead bus unless the design of the load sequencer is such that it inhibits manual actions to load the safety bus. The licensee has stated that at SHNPP the loss of a load sequencer does not inhibit manual actions and, therefore, a 24-hour limit for an inoperable load sequencer is acceptable.

2.9 Provide for Slow Start Testing of EDG in TS Section 4.8.1.1.2a.4 and Split EDG Start and Load Testing Into Separate Requirements

The licensee proposes to split the current combined start and load requirement contained in the existing TS Section 4.8.1.1.2.a.4 into two separate requirements and numbered them Sections 4.8.1.1.2.a.4 and a.5. In addition, a new requirement was added to Section 4.8.1.1.2.a.4 to allow the EDG to be started and accelerated to the no-load condition at a rate recommended by its

vendor. The current TS sections 4.8.1.1.2.a.5 and a.6 have been renumbered as a.6 and a.7 to incorporate the section added.

In its submittal, the licensee states that currently the EDGs at SHNPP are not capable of being gradually accelerated to no-load conditions, as required in the new 4.8.1.1.a.4; however, a plant modification will be made to allow gradual acceleration when the EDG is manually started. This modification will have an emergency override capability to restore EDG rapid acceleration for emergency starts.

The NRC staff reviewed the licensee proposal and determined that new requirement in TS Section 4.8.1.1.2.a.4, which specifies a time limit for the EDG to reach the no-load operating condition, the duration of the loaded EDG run, and the limits of the operating bands for generator frequency, voltage, and power is consistent with the surveillance requirements in NUREG-1431; Generic Letter 84-15, "Proposed Staff Actions to Improve and Maintain Diesel Generator Reliability," dated July 2, 1984; and NUREG/CR-5057, which are intended to minimize the stress and wear during rapid acceleration to no-load conditions. Therefore, the changes are acceptable.

2.10 Delete TS Table 4.8-1, Diesel Generator Test Schedules

The proposed change would revise Surveillance Requirements 4.8.1.1.2.a by replacing the wording "In accordance with the frequency specified in TS Table 4.8-1" with "At least once per 31 days." This proposal is consistent with the staff guidance provided in Generic Letter 94-01, "Removal of Accelerated Testing and Reporting Requirements for Emergency Diesel Generators," dated May 31, 1994.

The surveillance interval for testing of emergency diesel generators (EDGs) is currently governed by TS Table 4.8-1, which gives a diesel generator test schedule based on the number of EDG failures experienced. When an EDG experiences two or more failures in the last 20 tests or five or more in the last 100 tests, the test frequency of that EDG increases from 31 days to 7 days (accelerated testing). This increased test frequency continues until seven failure-free tests have been performed and the number of failures in the last 20 tests is reduced to one or less.

The staff reviewed the licensee proposal, and as stated in Generic Letter 94-01, the staff concludes that implementing the provisions of 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," including the guidance of Regulatory Guide 1.160, "Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," will ensure reliable EDG performance. Measures to be implemented in accordance with the maintenance rule include performance of detailed root cause analysis of individual EDG failures, effective corrective actions to individual EDG failures, and implementation of EDG preventive maintenance. The staff also determines that the implementation of these measures will justify removing the accelerated testing requirements.

In its September 12, 1994, application, the licensee committed to implement, within 90 days of issuance of the license amendment, a maintenance program for

monitoring and maintaining EDG performance in accordance with the maintenance rule and Regulatory Guide 1.160.

On the basis of the licensee's commitment to implement this maintenance program, the staff finds the proposed changes to: (1) to remove reference to TS Table 4.8-1 for test interval from TS Section 4.8.1.1.2.a, and (2) eliminate TS Table 4.8-1 to remove accelerated testing requirements for EDG's acceptable.

2.11 Revise Bases Sections 3/4.8.1 and 4/4.8.1

The licensee proposes to revise Bases Sections 3/4.8.1 and 4/4.8.1 as a result of the above proposed TS changes. The NRC staff finds proposed revision to the above Bases sections to be acceptable.

2.12 Add a Note to TS 3/4.7.1.2

The licensee proposes to add a Note to TS Section 3/4.7.1.2 that states, "LCO 3.0.3 and all other LCO Required Actions requiring MODE changes are suspended until one AFW train is restored to OPERABLE status. Following restoration of one AFW train, all applicable LCOs apply based on the time the LCOs initially occurred." The NRC staff reviewed TS 3/4.7.1.2 for the AFW system and noted the TS has a limiting LCO action requirement that states, "With three auxiliary feedwater pumps inoperable, immediately initiate corrective action to restore at least one auxiliary feedwater pump to OPERABLE status as soon as possible." The intent of this Action Statement is to minimize the potential for plant transients which could result in a plant condition (e.g., reactor trip) that would necessitate the need for AFW. This includes not making any power level changes and, thus, not making any mode changes. However, other LCO action requirements could be entered that specify changing modes to a mode where the LCO is no longer applicable. Performing such mode changes increases the probability of initiating a transient that would require AFW system operation for safe plant shutdown. Based on this review, the NRC staff agrees that the proposed change is necessary to avoid confusion in interpreting the TS and entering conflicting Action Statements which could place the plant in a less safe condition; and therefore, is acceptable.

In summary, the NRC staff finds that the proposed TS changes are consistent with the staff's recommendations in the NUREG-1431 and the requirements of 10 CFR 50.92, and therefore, are acceptable. The associated bases for the proposed changes to Sections 3.8.1.1.f, g, and h have not been submitted for the NRC staff's review.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the State of North Carolina official was notified of the proposed issuance of the amendment. The state official had no comments.

4.0 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 the 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 (58 FR 57845). 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.

5.0 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 amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributors: O. Chopra
C. Morris
W. Lefave

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