



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

July 28, 2022

Mr. Thomas Haaf  
Site Vice President  
Shearon Harris Nuclear Power Plant  
5413 Shearon Harris Road  
Mail Code NHP01  
New Hill, NC 27562-9300

SUBJECT: SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1 - ISSUANCE OF  
AMENDMENT NO. 193 REGARDING REVISION OF SURVEILLANCE  
REQUIREMENTS TO REMOVE SHUTDOWN LIMITATION  
(EPID L-2021-LLA-0167)

Dear Mr. Haaf:

The U.S. Nuclear Regulatory Commission (NRC, the Commission) has issued the enclosed Amendment No. 193 to Renewed Facility Operating License No. NPF-63 for the Shearon Harris Nuclear Power Plant (HNP), Unit 1. This amendment consists of changes to the Technical Specifications (TSs) in response to your application dated September 23, 2021.

The amendment revises the TSs to delete requirements to perform certain Surveillance Requirements (SRs) for electrical equipment only during shutdown. Additionally, the amendment adds Notes consistent with NRC-approved Technical Specification Task Force (TSTF 283-A), "Modify section 3.8 Mode Restriction Notes," Revision 3, to allow greater flexibility in performing SRs (or portions thereof) to reestablish operability provided an assessment determines the safety of the plant is maintained or enhanced. The amendment also revises TSs to include the ability to use actual actuation signals in addition to the simulated actuation signals for select SRs to meet performance of the required tests, as well as some administrative changes to better align the HNP, Unit 1 TS SRs with NUREG-1431, "Standard Technical Specifications – Westinghouse Plants."

A copy of our related Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's regular monthly *Federal Register* notice.

Sincerely,

***/RA/***

Michael Mahoney, Project Manager  
Plant Licensing Branch II-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-400

Enclosures:

1. Amendment No. 193 to NPF-63
2. Safety Evaluation

cc w/encls: Listserv



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

DUKE ENERGY PROGRESS, LLC

DOCKET NO. 50-400

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 193  
Renewed License No. NPF-63

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Duke Energy Progress, LLC (the licensee), dated September 23, 2021, 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 Renewed 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. 193, are hereby incorporated into this license. Duke Energy Progress, LLC 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 90 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

David J. Wrona, Chief  
Plant Licensing Branch II-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Renewed Facility License No. NPF-63  
and Technical Specifications

Date of Issuance: July 28, 2022

ATTACHMENT TO LICENSE AMENDMENT NO. 193

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1

RENEWED FACILITY OPERATING LICENSE NO. NPF-63

DOCKET NO. 50-400

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  
Page 4

Insert  
Page 4

Replace the following pages of the Appendix A, Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change:

Remove  
3/4 8-6  
3/4 8-7  
3/4 8-8  
3/4 8-9  
3/4 8-13

Insert  
3/4 8-6  
3/4 8-7  
3/4 8-8  
3/4 8-9  
3/4 8-13

C. This 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

Duke Energy Progress, LLC, is authorized to operate the facility at reactor Core power levels not in excess of 2948 megawatts thermal (100 percent rated core power) in accordance with the conditions specified herein.

(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. 193, are hereby incorporated into this license. Duke Energy Progress, LLC shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

(3) Antitrust Conditions

Duke Energy Progress, LLC. shall comply with the antitrust conditions delineated in Appendix C to this license.

(4) Initial Startup Test Program (Section 14)<sup>1</sup>

Any changes to the Initial Test Program described in Section 14 of the FSAR made in accordance with the provisions of 10 CFR 50.59 shall be reported in accordance with 50.59(b) within one month of such change.

(5) Steam Generator Tube Rupture (Section 15.6.3)

Prior to startup following the first refueling outage, Carolina Power & Light Company\* shall submit for NRC review and receive approval if a steam generator tube rupture analysis, including the assumed operator actions, which demonstrates that the consequences of the design basis steam generator tube rupture event for the Shearon Harris Nuclear Power Plant are less than the acceptance criteria specified in the Standard Review Plan, NUREG-0800, at 15.6.3 Subparts II (1) and (2) for calculated doses from radiological releases. In preparing their analysis Carolina Power & Light Company\* will not assume that operators will complete corrective actions within the first thirty minutes after a steam generator tube rupture.

<sup>1</sup>The parenthetical notation following the title of many license conditions denotes the section of the Safety Evaluation Report and/or its supplements wherein the license condition is discussed.

\* On April 29, 2013, the name of "Carolina Power & Light Company" (CP&L) was changed to "Duke Energy Progress, Inc." On August 1, 2015, the name "Duke Energy Progress, Inc." was changed to "Duke Energy Progress, LLC."

## ELECTRICAL POWER SYSTEMS

### A.C. SOURCES

#### OPERATING

#### SURVEILLANCE REQUIREMENTS (CONTINUED)

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##### 4.8.1.1.2 (Continued)

The generator shall be manually synchronized to its appropriate emergency bus, loaded to an indicated 6200-6400<sup>\*\*\*</sup>kW, and operate for at least 60 minutes. The diesel generator shall be started for this test by using one of the following signals on a rotating basis:

1. Simulated loss of offsite power by itself, and
2. A Safety Injection test signal by itself.

This test, if it is performed so that it coincides with the testing required by Surveillance Requirement 4.8.1.1.2.a.4, may also serve to concurrently meet those requirements as well.

- f. At the frequency specified in the Surveillance Frequency Control Program by:
  1. DELETED
  2. <sup>1</sup>Verifying that, on rejection of a load of greater than or equal to 1078 kW, the voltage and frequency are maintained with  $6900 \pm 690$  volts and  $60 \pm 6.75$  Hz, with voltage stabilizing to  $6900 \pm 276$  volts and frequency stabilizing to  $60 \pm 0.48$  Hz within 10 seconds without any safety-related load tripping out or operating in a degraded condition.
  3. <sup>2</sup>Verifying that the load sequencing timer is OPERABLE with the interval between each load block within 10% of its design interval.
  4. <sup>3</sup>Verifying on an actual or simulated loss of offsite power signal by itself:

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<sup>\*\*\*</sup> 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.

- <sup>1</sup> This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR.
- <sup>2</sup> This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR.
- <sup>3</sup> This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, portions of this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR.

## ELECTRICAL POWER SYSTEMS

### A.C. SOURCES

#### OPERATING

#### SURVEILLANCE REQUIREMENTS (Continued)

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##### 4.8.1.1.2 (Continued)

- a) De-energization of the emergency buses and load shedding from the emergency buses.
  - b) The diesel starts\*\* on the auto-start signal, energizing the emergency buses with permanently connected loads in less than or equal to 10 seconds, energizing the auto-connected shutdown loads through the load sequencer, and operating for greater than or equal to 5 minutes while its generator is loaded with the emergency loads. After energization of these loads, the steady-state voltage and frequency shall be maintained at  $6900 \pm 276$  volts and  $60 \pm 0.48$  Hz.
5. <sup>1</sup>Verifying that on an actual or simulated safety injection signal (without loss of power) the diesel generator starts\*\* on the auto-start signal and operates on standby for greater than or equal to 5 minutes.
6. <sup>3</sup>Verifying on an actual or simulated loss of offsite power signal in conjunction with an actual or simulated safety injection signal:
- a) De-energization of the emergency buses and load shedding from the emergency buses.
  - b) The diesel starts\*\* on the auto-start signal, energizing the emergency buses with permanently connected loads in less than or equal to 10 seconds, energizing the auto-connected emergency (accident) loads through the sequencing timers, and operating for greater than or equal to 5 minutes and maintaining the steady-state voltage and frequency at  $6900 \pm 276$  volts and  $60 \pm 0.48$  Hz.
  - c) DELETED

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

<sup>1</sup> This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR.

<sup>3</sup> This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, portions of this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR.



## ELECTRICAL POWER SYSTEMS

### A.C. SOURCES

#### OPERATING

#### SURVEILLANCE REQUIREMENTS (Continued)

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##### 4.8.1.1.2 (Continued)

7. 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 6800-7000 kW\*\*\* and, during the remaining 22 hours of this test, the diesel generator shall be loaded to an indicated 6200-6400 kW\*\*\*.
8. DELETED
9. <sup>2</sup>Verifying the diesel generator's capability to:
  - a) Synchronize with the offsite power source while the generator is loaded with its emergency loads upon a simulated restoration of offsite power,
  - b) Transfer its loads to the offsite power source, and
  - c) Proceed through its shutdown sequence.
10. DELETED
11. <sup>1</sup>Verifying the generator capability to reject a load of between 6200 and 6400 kW without tripping. The generator voltage shall not exceed 8280 volts during and following the load rejection.
12. <sup>3</sup>Verifying that, with the diesel generator operating in a test mode and connected to its bus, an actual or 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.

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\*\* 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.

<sup>1</sup> This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR.

<sup>2</sup> This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR.

<sup>3</sup> This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, portions of this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR.

## ELECTRICAL POWER SYSTEMS

### A.C. SOURCES

#### OPERATING

#### SURVEILLANCE REQUIREMENTS (CONTINUED)

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##### 4.8.1.1.2 (Continued)

13. <sup>1</sup>Verifying that all diesel generator trips, except engine overspeed, loss of generator potential transformer circuits, generator differential, and emergency bus differential are automatically bypassed on a simulated or actual loss of offsite power signal in conjunction with a safety injection signal.
  14. Verifying that within 5 minutes of shutting down the EDG, after the EDG has operated for at least 2 hours at an indicated load of 6200-6400 kW, the EDG starts and accelerates to a steady-state voltage and frequency of 6900 ± 276 volts and 60 ± 0.48 Hz in 10 seconds or less.
- g. At the frequency specified in the Surveillance Frequency Control Program or after any modifications which could affect diesel generator interdependence by starting\*\* both diesel generators simultaneously from standby condition and verifying that both diesel generators accelerate to at least 450 rpm in less than or equal to 10 seconds.
- h. At the frequency specified in the Surveillance Frequency Control Program by:
- 1) DELETED.
  - 2) Performing a pressure test, of those isolable portions of the diesel fuel oil piping system designed to Section III, subsection ND of the ASME Code, at a test pressure equal to 110% of the system design pressure.

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

<sup>1</sup> This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR.

ELECTRICAL POWER SYSTEMS

D.C. SOURCES

OPERATING

SURVEILLANCE REQUIREMENTS (CONTINUED)

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- c. At the frequency specified in the Surveillance Frequency Control Program by verifying that:
  - 1. The cells, cell plates, and battery racks show no visual indication of physical damage or abnormal deterioration,
  - 2. The cell-to-cell and terminal connections are clean, tight, and coated with anticorrosion material,
  - 3. The resistance of each cell-to-cell and terminal connection is less than or equal to  $150 \times 10^{-6}$  ohm, and
  - 4. The battery charger will supply at least 150 amperes at greater than or equal to 125 volts for at least 4 hours.
- d. #At the frequency specified in the Surveillance Frequency Control Program by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status all of the actual or simulated emergency loads for the design duty cycle when the battery is subjected to a battery service test;
- e. #At the frequency specified in the Surveillance Frequency Control Program by verifying that the battery capacity is at least 80% of the manufacturer's rating when subjected to a performance discharge test. At the frequency specified in the Surveillance Frequency Control Program, this performance discharge test may be performed in lieu of the battery service test required by Specification 4.8.2.1.d; and
- f. #At least once per 18 months by giving performance discharge tests of battery capacity to any battery that shows signs of degradation or has reached 85% of the service life expected for the application. Degradation is indicated when the battery capacity drops more than 10% of rated capacity from its average on previous performance tests, or is below 90% of the manufacturer's rating.

# This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, portions of this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 193 TO

RENEWED FACILITY OPERATING LICENSE NO. NPF-63

DUKE ENERGY PROGRESS, LLC

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1

DOCKET NO. 50-400

1.0 INTRODUCTION

By letter to the U.S. Nuclear Regulatory Commission (NRC, the Commission) dated September 23, 2021, Agencywide Documents Access and Management System Accession No. ML21266A396), Duke Energy Progress, LLC (Duke Energy, the licensee) requested a revision to the Shearon Harris Nuclear Power Plant (HNP), Unit 1, Technical Specifications (TS). The proposed amendment would delete requirements to perform certain Surveillance Requirements for electrical equipment only during shutdown. Additionally, the proposed amendment would add Notes consistent with NRC-approved Technical Specification Task Force (TSTF 283-A), Revision 3 "Modify Section 3.8 Mode Restriction Notes," to allow greater flexibility in performing SRs (or portions thereof) to reestablish operability provided an assessment determines the safety of the plant is maintained or enhanced.

The licensee also proposed changes to include the ability to use actual actuation signals in addition to the simulated actuation signals for select SRs to meet performance of the required tests, as well as some administrative changes to better align the HNP, Unit 1 TS SRs with NUREG-1431, "Standard Technical Specifications – Westinghouse Plants," Revision 4 (ML12100A222).

2.0 REGULATORY EVALUATION

2.1 System Description

The function of the two Emergency Diesel Generators (EDGs) (1A-SA and 1B-SB) is to provide a reliable source of alternate power to the emergency 6.9-kilovolt (kV) buses in the event of loss of offsite power or following a design basis accident. Each EDG is rated at 6500 kilowatt (kW), 0.8 power factor, 6.9 kV, and furnished with automatic field flashing equipment for quick voltage buildup during the startup sequence. Each EDG can be started either manually or automatically upon receipt of a loss of offsite power signal, safety injection signal, or a simulated accident signal.

When an automatic start is initiated, the EDG is designed to reach rated speed and rated voltage within 10 seconds. The automatic voltage regulators provide steady-state voltage regulation within  $\pm 1.0$  percent of set voltage for any load from no load to full load.

The direct current (DC) power system consists of three 60 cell, 125 V batteries and one 120 cell, 250V battery, each with its own battery chargers, and DC load center. The two banks of 125V batteries (1A-SA and 1B-SB) feed the safety-related DC loads associated with divisions A and B respectively. In addition, there are two 60 cell, 125V non-safety-related batteries at the 230 kV switchyard.

## 2.2 Description of Changes

The licensee proposed to remove the “during shutdown” limitation from each of the SRs listed below. The licensee also proposed adding text to allow the use of actual actuation signals as well as clarification of testing from standby conditions. The licensee also proposed associated editorial changes to rephrase the SRs to better align with NUREG-1431 as well as correct existing editorial errors. Deletions and additions are shown below in bold text.

### SR 4.8.1.1.2.f.2

~~During shutdown,~~ <sup>1</sup>Verifying that, on rejection of a load of greater than or equal to 1078 kW, the voltage and frequency are maintained with  $6900 \pm 690$  volts and  $60 \pm 6.75$  Hz, with voltage stabilizing to  $6900 \pm 276$  volts and frequency stabilizing to  $60 \pm 0.48$  Hz within 10 seconds without any safety-related load tripping out or operating in a degraded condition.

### SR 4.8.1.1.2.f.3

~~During shutdown,~~ <sup>2</sup>Verifying that the load sequencing timer is OPERABLE with the interval between each load block within 10% of its design interval.

### SR 4.8.1.1.2.f.4

~~During shutdown, simulating a~~ <sup>3</sup>Verifying on an actual or simulated loss of offsite power ~~signal by itself, and:~~

- a) ~~Verifying~~ De-energization of the emergency buses and load shedding from the emergency buses.
- b) ~~Verifying~~ The diesel starts\*\* on the auto-start signal, energizing the emergency buses with permanently connected loads in less than or equal to 10 seconds, energizing the auto-connected shutdown loads through the load sequencer, and operating for greater than or equal to 5 minutes while its generator is loaded with the emergency loads. After energization of these loads, the safety-state voltage and frequency shall be maintained at  $6900 \pm 276$  volts and  $60 \pm 0.48$  Hz.

### SR 4.8.1.1.2.f.5

~~During shutdown,~~ <sup>1</sup>Verifying that on an actual or simulated safety injection ~~test~~ signal (without loss of power) the diesel generator starts\*\* on

the auto-start signal and operates on standby for greater than or equal to 5 minutes.

SR 4.8.1.1.2.f.6

**During shutdown, ~~simulating a~~<sup>3</sup>Verifying on an actual or simulated loss of offsite power signal in conjunction with an actual or simulated safety injection test signal, and:**

- a) **Verifying** De-energization of the emergency buses and load shedding from the emergency buses.
- b) **Verifying** The diesel starts\*\* on the auto-start signal, energizing the emergency buses with permanently connected loads in less than or equal to 10 seconds, energizing the auto-connected emergency (accident) loads through the sequencing timers, and operating for greater than or equal to 5 minutes and maintaining the steady-state voltage and frequency at  $6900 \pm 276$  volts and  $60 \pm 0.48$  HZ.
- c) DELETED

SR 4.8.1.1.2.f.9

**During shutdown,**<sup>2</sup>Verifying the diesel generator's capability to:

- a) Synchronize with the offsite power source while the generator is loaded with its emergency loads upon a simulated restoration of offsite power,
- b) Transfer its loads to the offsite power source, and
- c) Proceed through its shutdown sequence.

SR 4.8.1.1.2.f.11

**During shutdown,**<sup>1</sup>Verifying the generator capability to reject a load of between 6200 and 6400 kW without tripping. The generator voltage shall not exceed 8280 volts during and following the load rejection;

SR 4.8.1.1.2.f.12

**During shutdown,**<sup>3</sup>Verifying that, with the diesel generator operating in a test mode and connected to its bus, an actual or 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.

SR 4.8.1.1.2.f.13

**During shutdown,**<sup>1</sup>Verifying that all diesel generator trips, except engine overspeed, loss of generator potential transformer circuits, generator differential, and emergency bus differential are automatically bypassed on

a simulated or actual loss of offsite power signal in conjunction with a safety injection signal.

SR 4.8.1.1.2.f.14

~~During shutdown,~~ Verifying that within 5 minutes of shutting down the EDG, after the EDG has operated for at least 2 hours at an indicated load of 6200-6400 kW, the EDG starts and accelerates to a steady-state voltage and frequency of  $6900 \pm 276$  volts and  $60 \pm 0.48$  Hz in 10 seconds or less.

SR 4.8.1.1.2.g

At the frequency specified in the Surveillance Frequency Control Program or after any modifications which could affect diesel generator interdependence by starting\*\* both diesel generators simultaneously, ~~during shutdown,~~ **from standby condition** and verifying that both diesel generators accelerate to at least 450 rpm in less than or equal to 10 seconds.

The new proposed footnotes for inclusion in TS 3/4.8.1, are as follows:

**<sup>1</sup>This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR.**

**<sup>2</sup>This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR.**

**<sup>3</sup>This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR.**

SR 4.8.2.1.d

#At the frequency specified in the Surveillance Frequency Control Program, ~~during shutdown~~, by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status all of the actual or simulated emergency loads for the design duty cycle when the battery is subjected to a battery service test;

SR 4.8.2.1.e

#At the frequency specified in the Surveillance Frequency Control Program, ~~during shutdown~~, by verifying that the battery capacity is at least 80% of the manufacturer's rating when subjected to a performance discharge test. At the frequency specified in the Surveillance Frequency Control Program, this performance discharge test may be performed in lieu of the battery service test required by Specification 4.8.2.1.d; and

SR 4.8.2.1.f

#At least once per 18 months, ~~during shutdown~~, by giving performance discharge tests of battery capacity to any battery that shows signs of degradation or has reached 85% of the service life expected for the application. Degradation is indicated when the battery capacity drops more than 10% of rated capacity from its average on previous performance tests or is below 90% of the manufacturer's rating.

The footnote proposed for inclusion in TS 3/4.8.2 is:

**# This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR.**

2.3 Applicable Regulatory Requirements and Guidance

*Regulations*

The regulation at 10 CFR 50.36(c)(3) states that "Surveillance requirements are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met."



10 CFR 50.65(a)(4), "Requirements for monitoring the effectiveness of maintenance at nuclear power plants," requires, in part, that before performing maintenance activities (including but not limited to surveillance, post-maintenance testing, and corrective and preventive maintenance), the licensee shall assess and manage the increase in risk that may result from the proposed maintenance activities.

#### *Guidance*

Generic Letter (GL) 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle"

The NRC staff's guidance for the review of TSs is in Chapter 16, "Technical Specifications," of NUREG-0800, Revision 3, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants" (SRP), dated March 2010 (ML100351425). As described therein, as part of the regulatory standardization effort, the NRC staff has prepared Standard Technical Specifications (STSs) for each of the light-water reactor nuclear designs. NUREG-1431, is the applicable guidance for HNP, Unit 1. Chapter 16 of NUREG-800 specifies that the NRC staff review whether content and format of proposed TS are consistent with the applicable STS. Where TS provisions depart from the reference TSs, the NRC staff determines whether proposed differences are justified by uniqueness in plant design or other considerations.

### 3.0 TECHNICAL EVALUATION

The NRC staff notes the proposed changes fall into three general categories; 1) removing shutdown testing restrictions and adding notes; 2) taking credit for actual or simulated signals; and 3) testing from standby conditions.

Changes related to the first category mentioned above were the subject of TSTF-283, Revision 3. The NRC did not issue a letter approving the adoption of TSTF-283-A, Revision 3 related changes to Revision 1 of NUREG-1431; however, the changes to STS associated with TSTF-283-A, Revision 3 were incorporated by the NRC into NUREG-1431, Revision 2, issued in April 2001, as well as each subsequent revision of NUREG-1431. The intent of the changes was to allow testing of the EDGs and Class 1E batteries in modes not currently allowed for the purpose of maintaining or reestablishing system or component operability (e.g., post corrective maintenance testing), provided the licensee performs a safety assessment, as described in the application, that determines the safety of the plant would be maintained or enhanced by conducting the operability testing before the testing begins. With respect the changes related to TSTF-283-A, Revision 3, the licensee states:

In addition to the removal of the "during shutdown" restriction from the SRs, associated Notes from the corresponding [Improved Standard Technical Specifications] (ISTS) SRs are being added to specify the plant operating restrictions associated with surveillance performance. These Notes specify that the surveillances shall not normally be performed in either Modes 1 through 2 or Modes 1 through 4, effectively replacing the "during shutdown" restriction.

The Notes also include the provision to allow performance of the test (or portions thereof) to reestablish operability (e.g., post-work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, and other unanticipated operability concerns), provided an assessment determines that plant safety is maintained or enhanced, consistent with TSTF-283-A. As a minimum, the assessment will consider the potential outcomes and transients associated with a failed partial surveillance, a successful partial surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the partial surveillance. It will also consider the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a plant shutdown and startup to determine that plant safety is maintained or enhanced when portions of the surveillance are performed in the normally restricted modes. Risk insights or deterministic methods may be used for the assessment.

Duke Energy manages the overall risk associated with on-line and outage work activities and establishes appropriate risk management plans. In the case that performing a SR would result in an unacceptable level of risk, Duke Energy would reschedule the activity. Similarly, if a SR that is normally performed during shutdown would adversely affect safety if performed during plant operation, Duke Energy would continue to perform the SR during shutdown. Duke Energy will continue to evaluate the risk impact of performing SRs as required by 10 CFR 50.65(a)(4), and SRs previously performed during shutdown will be performed during operation only when it is safe to do so.

The proposed change to remove the “during shutdown” restriction does not alter the intent or method by which the surveillance activities are conducted, does not involve any physical changes to the plant, does not alter the way any structure, system or component functions, and does not modify the manner in which the plant is operated. As such, the proposed changes to the SRs will not degrade the ability of each EDG and safety-related 125-volt battery to perform its intended function.

With respect the changes related to taking credit for actual or simulated signals the licensee states:

Duke Energy is also proposing the inclusion of the ability to use actual actuation signals in addition to the simulated actuation signals in SR 4.8.1.1.2.f.4, SR 4.8.1.1.2.f.5, SR 4.8.1.1.2.f.6, and SR 4.8.1.1.2.f.12 to meet performance of the test. This use of an actual actuation signal would provide an equivalent means of testing the EDG functions as a simulated signal and would provide additional flexibility in test performance. This change is also consistent with the corresponding SRs in ISTS.

With respect the changes related to testing from standby conditions the licensee states:

Another change proposed to align the HNP TS SRs with those contained in ISTS includes the addition of “from standby condition” in HNP TS SR 4.8.1.1.2.g.

This particular surveillance demonstrates that the EDG starting independence has not been compromised, as well as that each engine can achieve proper speed within the specified time when the EDGs are started simultaneously. For the purpose of this testing, the EDGs must be started from standby conditions. This means the engine coolant and oil is continuously circulated and temperature maintained consistent with manufacturer recommendations. As this surveillance requirement is already modified by a note that requires the test to be conducted in accordance with the manufacturer's recommendations regarding engine prelube and warmup procedures, and as applicable regarding loading recommendations, the addition of "from standby condition" is strictly an administrative change to further align the HNP SR wording with the corresponding SR in ISTS as well as the basis of GL 84-15, "Proposed Staff Actions to Improve and Maintain Diesel Generator Reliability" to improve and maintain diesel generator reliability.

The NRC staff reviewed the licensee's request as well as the licensee's justifications for the changes described in section 2.4 of the enclosure to the License Amendment Request (LAR) and illustrated in Attachment 1 to the enclosure of the LAR. The NRC staff also compared the associated HNP, Unit 1 SRs to the corresponding SRs in NUREG-1431.

The NRC staff notes the proposed changes to SR Notes in TS 3/4.8.1 for the AC electrical power sources and TS 3/4.8.2 for the DC electrical power sources would provide flexibility in outage scheduling and reduce outage critical path time, since these surveillance tests would no longer have to be performed during an outage. In addition, the changes will potentially allow avoiding a plant shutdown if corrective maintenance (planned or unplanned) performed during power operation results in the need to perform any of the above SRs to demonstrate operability and to maximize the licensee's flexibility in responding to an event during shutdown when other equipment may be out-of-service.

The NRC staff notes that the requirements of 10 CFR 50.65(a)(4) will remain in effect. The NRC staff determined that while the proposed changes are less restrictive than current SR requirements, the changes are justified by other maintenance requirements incumbent on the licensee which will provide assurance that plant safety is maintained. Regulations in 10 CFR 50.65(a)(4) provide this assurance because the licensee will continue to be required to assess and manage the increase in risk that may result from maintenance activities before performing the activities (including but not limited to surveillance, post-maintenance testing, and corrective and preventive maintenance). The NRC staff further determines that while the allowance to take credit for actual or simulated signals during SR testing appears to be a less restrictive change, it is justified by HNP, Unit 1 system design and NUREG-1431 conventions which allow for taking credit for system starts from actual or simulated signals.

The NRC staff determined that the change related to testing from standby conditions is an administrative change which clarifies conditions of the SR which are currently referenced in the "\*\*\*" footnote to SR 4.8.1.1.2.g, which is also in alignment with NUREG-1431.

Finally, the NRC staff compared the proposed changes to the associated STS SRs in NUREG-1431. The NRC staff determined that while there is a difference between HNP, Unit 1 and NUREG-1431 in formatting and numbering of the SRs, the proposed changes bring the HNP, Unit 1 TS into alignment with the most current guidance in NUREG-1431 for SRs for electrical generation and distribution equipment.

Given the determinations above, the NRC staff concludes the TSs will continue to meet the requirements of 10 CFR 50.36(c)(3) because the SRs, as modified by the proposed changes, will continue to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met, ensuring safe operating of HNP, Unit 1. Therefore, the NRC staff concludes that the proposed TS changes are acceptable

#### 4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the State of North Carolina official was notified of the proposed issuance of the amendment on May 25, 2022. The State of North Carolina official had no comments.

#### 5.0 ENVIRONMENTAL CONSIDERATION

The amendments change the requirements with respect to the installation or use of facility components located within the restricted area as defined in 10 CFR Part 20 and change surveillance requirements. The NRC staff has determined that the amendments involve 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 in the *Federal Register* on December 28, 2021 (86 FR 73818), and there has been no public comment on such finding. Accordingly, the amendments meet 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 to be prepared in connection with the issuance of the amendments.

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

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Date of Issuance: July 28, 2022

SUBJECT: SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1 - ISSUANCE OF AMENDMENT NO. 193 REGARDING REVISION OF SURVEILLANCE REQUIREMENTS TO REMOVE SHUTDOWN LIMITATION (EPID L-2021-LLA-0167) DATED JULY 28, 2022

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