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984-229-2512

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July 15, 2021  
Serial: RA-21-0203

ATTN: Document Control Desk  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

Shearon Harris Nuclear Power Plant, Unit 1  
Docket No. 50-400  
Renewed License No. NPF-63

**Subject:** Response to Request for Additional Information Regarding License Amendment Request to Remove Extraneous Content and Requirements from the Operating License and Technical Specifications

Ladies and Gentlemen:

By application dated February 24, 2021 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML21055A819), Duke Energy Progress, LLC (Duke Energy), submitted a license amendment request (LAR) to remove extraneous requirements from Renewed Facility Operating License No. NPF-63 for the Shearon Harris Nuclear Power Plant, Unit 1 (HNP) and the Technical Specifications (TS). The proposed amendment would remove License Condition 2.G, "Reporting to the Commission," which requires Duke Energy to report any violations of Operating License Section 2.C within 24 hours to the U.S. Nuclear Regulatory Commission (NRC) Operations Center via the Emergency Notification System with a written follow-up within 30 days. Additionally, the proposed change would delete HNP TS 3/4.4.10, "Structural Integrity" (and adds new TS Administrative Controls Section 6.8.4.s, "Reactor Coolant Pump Flywheel Inspection Program"), revise Administrative Control TS 6.1.2 to eliminate the annual management directive requirement, and revise TS Table 4.3-2, "Engineered Safety Features Actuation System Instrumentation Surveillance Requirements," to remove an overly restrictive requirement that impedes the full application of the Surveillance Frequency Control Program for a specific subset of relays. Lastly, the proposed amendment would also revise HNP TS to remove the Index and place it under licensee control.

The NRC staff reviewed the LAR and determined that additional information is needed to complete their review. Duke Energy received the request for additional information (RAI) from the NRC through electronic mail on June 21, 2021 (ADAMS Accession No. ML21172A243). The attachment to this letter provides Duke Energy's response to the RAI.

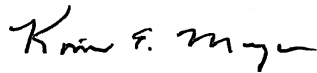
This additional information does not change the No Significant Hazards Determination provided in the original submittal. No regulatory commitments are contained within this letter.

Please refer any questions regarding this submittal to Art Zaremba, Manager – Nuclear Fleet Licensing, at (980) 373-2062.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on July 15, 2021.

Sincerely,

A handwritten signature in black ink, appearing to read "Kim E. Maza". The signature is written in a cursive style with a horizontal line at the end.

Kim E. Maza  
Site Vice President  
Harris Nuclear Plant

Attachment: Response to Request for Additional Information

cc: J. Zeiler, NRC Sr. Resident Inspector, HNP  
W. L. Cox, III, Section Chief, N.C. DHSR  
M. Mahoney, NRC Project Manager, HNP  
L. Dudes, NRC Regional Administrator, Region II

U.S. Nuclear Regulatory Commission  
Serial: RA-21-0203  
Attachment

**ATTACHMENT**

**RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION**

**SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1**

**DOCKET NO. 50-400**

**RENEWED LICENSE NUMBER NPF-63**

## Response to Request for Additional Information

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### **RAI – 1**

Proposed new TS Section 6.8.4.s (Refer to Enclosure of Reference 1) states:

Each reactor coolant pump flywheel shall be inspected per the recommendations of Regulatory Position C.4.b of Regulatory Guide 1.14, Revision 1, August 1975.

In lieu of Position C.4.b(1) and C.4.b(2), a qualified in-place UT [ultrasonic testing] examination over the volume from the inner bore of the flywheel to the circle one-half of the outer radius or a surface examination (MT [magnetic particle testing] and/or PT [liquid penetrant testing]) of exposed surfaces of the removed flywheels may be conducted at 20 year intervals.

Based on its review of relevant information in Chapters 1.8 and 5.4.1 of the HNP UFSAR [Updated Final Safety Analysis Report] (Reference 2), the NRC staff has determined that the RCP [reactor coolant pump] flywheel management program is designed to be a program (with noted exceptions defined in UFSAR Section 1.8 or 5.4.1) that conforms to the guidance and regulatory positions in NRC Regulatory Guide (RG) 1.14 (Reference 3). The NRC staff has observed that the program also includes non-condition monitoring activities and evaluations beyond the RCP flywheel inspections defined in the newly proposed TS section, including but not necessarily limited to RCP flywheel design overspeed testing (refer to UFSAR Section 5.4.1.1) and either a postulated flaw fracture toughness or fatigue flaw growth analysis for the RCP flywheel discs/rotors (refer to UFSAR Section 5.4.1.3.6). The fracture toughness/fatigue flaw growth analysis is important because the licensee credits it for potential flywheel missile prevention or mitigation objectives. The periodic overspeed testing is important because it is

the understanding of the NRC staff that the overspeed tests are used to confirm that the RCP flywheels will still achieve a proper coast-down condition if an overspeed event (defined as greater than 125% of the rotational design speed) were to occur in the RCP rotor.

1. Please confirm that overspeed testing and flaw evaluations are still key programmatic elements of the RCP flywheel management program that is implemented at HNP with the proposed TS change.

### **Duke Energy Response**

The proposed TS change to delete TS 3/4.4.10, "Structural Integrity" and relocate the associated surveillance requirement to a new Administrative Control TS Program does not impact the HNP commitment to RG 1.14 (Reference 3) or the noted exceptions provided in Section 1.8 of the HNP UFSAR (Reference 2). The overspeed testing and flaw evaluations provided by this commitment remain key programmatic elements of RCP flywheel management.

Based on the above assessment of the HNP commitment to RG 1.14, Duke Energy finds that it would be more appropriate to relocate the content proposed for the new Administrative Control TS Program to the HNP UFSAR Section 1.8 exceptions related to RG 1.14. Specifically, the following content would be added to HNP UFSAR Section 1.8 addressing RG 1.14 exceptions:

- f) In lieu of Position C.4.b(1) and C.4.b(2), a qualified in-place UT examination over the volume from the inner bore of the flywheel to the circle one-half of the outer radius or a surface examination (MT and/or PT) of exposed surfaces of the removed flywheels may be conducted at 20 year intervals.

As discussed in the safety evaluation associated with HNP License Amendment No. 119 (Reference 4), the purpose of the testing and inspection program is to ensure that the probability of a flywheel failure is sufficiently small such that additional safety features are not needed to protect against flywheel failure. The proposed change does not alter the required testing, but rather relocates the previously accepted changes to the RCP flywheel inspection methods that define an allowable alternative to the inspections described in RG 1.14 from HNP TS to the UFSAR.

Duke Energy no longer requests the addition of TS 6.8.4.s, "Reactor Coolant Pump Flywheel Inspection Program," as this content is proposed to be maintained with the other accepted exceptions to RG 1.14 in HNP UFSAR Section 1.8.

There are no changes to the information provided in the No Significant Hazards Consideration Determination within the LAR submitted on February 24, 2021. Therefore, the conclusion of the original No Significant Hazards Consideration Determination remains applicable.

### **References**

1. Duke Energy, "License Amendment Request to Remove Extraneous Content and Requirements from the Operating License and Technical Specifications," Serial RA-20-0252, dated February 24, 2021, (ADAMS Accession No. ML21055A819).

2. Shearon Harris Nuclear Power Plant, Unit 1, Amendment 63 to Final Safety Analysis Report. Chapter 1, "Introduction and General Description of Plant," May 15, 2020 (ADAMS Accession No. ML20147A018 for UFSAR Chapter 1 and ML20147A022 for UFSAR Chapter 5).
3. NRC Regulatory Guide 1.14, Revision 1, Reactor Coolant Pump Flywheel Integrity," August 1975 (ADAMS Accession No. ML003739936).
4. NRC Letter to James Scarola (HNP), "Shearon Harris Nuclear Power Plant, Unit 1 – Issuance of Amendment to Extend the Inspection Interval for Reactor Coolant Pump Flywheels (TAC No. MC4794)," dated June 21, 2005 (ADAMS Accession No. ML051610409)