



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

July 14, 2015

Mr. Oscar A. Limpias
Vice President-Nuclear and CNO
Nebraska Public Power District
72676 648A Avenue
Brownville, NE 68321

**SUBJECT: COOPER NUCLEAR STATION - ISSUANCE OF AMENDMENT RE: MOVE
LINEAR HEAT GENERATION RATE (LHGR) AND SINGLE LOOP OPERATION
LHGR LIMITS FROM TECHNICAL REQUIREMENTS MANUAL TO TECHNICAL
SPECIFICATIONS (TAC NO. MF4485)**

Dear Mr. Limpias:

The U.S. Nuclear Regulatory Commission (the Commission) has issued the enclosed Amendment No. 251 to Renewed Facility Operating License No. DPR-46 for the Cooper Nuclear Station. The amendment consists of changes to the Technical Specifications (TSs) in response to your application dated July 17, 2014, as supplemented by letter dated February 19, 2015.

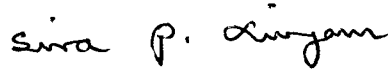
The amendment would move the Linear Heat Generation Rate (LHGR) and Single Loop Operation LHGR limits from the Technical Requirements Manual to the TSs. Accordingly, the amendment would add TS 3.2.3, "Linear Heat Generation Rate (LHGR)," and modify TS 1.1, "Definitions," TS 3.4.1, "Recirculation Loops Operating," TS 3.7.7, "The Main Turbine Bypass System," and TS 5.6.5, "Core Operating Limits Report (COLR)."

O. Limpias

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

Sincerely,

A handwritten signature in black ink, appearing to read "Siva P. Lingam".

Siva P. Lingam, Project Manager
Plant Licensing Branch IV-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-298

Enclosures:

1. Amendment No. 251 to DPR-46
2. Safety Evaluation

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

NEBRASKA PUBLIC POWER DISTRICT

DOCKET NO. 50-298

COOPER NUCLEAR STATION

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 251
License No. DPR-46

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Nebraska Public Power District (the licensee), dated July 17, 2014, as supplemented by letter dated February 19, 2015, 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 license 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. DPR-46 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A as revised through Amendment No. 251, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

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

FOR THE NUCLEAR REGULATORY COMMISSION



Michael T. Markley, Chief
Plant Licensing Branch IV-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Renewed Facility
Operating License No. DPR-46
and Technical Specifications

Date of Issuance: July 14, 2015

ATTACHMENT TO LICENSE AMENDMENT NO. 251

RENEWED FACILITY OPERATING LICENSE NO. DPR-46

DOCKET NO. 50-298

Replace the following pages of the Renewed Facility Operating License No. DPR-46 and Appendix A Technical Specifications with the enclosed revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Renewed Facility Operating License

REMOVE

INSERT

-3-

-3-

Technical Specifications

REMOVE

INSERT

1.1-3

1.1-3

3.2-4

3.4-1

3.4-1

3.7-14

3.7-14

5.0-20

5.0-20

- (5) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by operation of the facility.
- C. This license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations in 10 CFR Chapter I: Part 20, Section 30.34 of Part 30, Section 40.41 of Part 40, Sections 50.54 and 50.59 of Part 50, and Section 70.32 of Part 70; 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

The licensee is authorized to operate the facility at steady state reactor core power levels not in excess of 2419 megawatts (thermal).

(2) Technical Specifications

The Technical Specifications contained in Appendix A as revised through Amendment No. 251, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

(3) Physical Protection

The licensee shall fully implement and maintain in effect all provisions of the Commission-approved physical security, training and qualification and safeguards contingency plans including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822) and to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The combined set of plans, which contain Safeguards Information protected under 10 CFR 73.21, are entitled: "Cooper Nuclear Station Safeguards Plan," submitted by letter dated May 17, 2006.

NPPD shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The NPPD CSP was approved by License Amendment No. 238 as supplemented by changes approved by License Amendments 244 and 249.

(4) Fire Protection

NPPD shall implement and maintain in effect all provisions of the approved fire protection program that comply with 10 CFR 50.48(a) and 10 CFR 50.48(c), as specified in the license amendment request dated April 24, 2012 (and supplements dated July 12, 2012, January 14, 2013, February 12, 2013, March 13, 2013, June 13, 2013, December 12, 2013, January 17, 2014, February 18, 2014, and April 11, 2014), and as approved in the safety evaluation dated April 29, 2014. Except where NRC approval for changes or deviations is required by 10 CFR 50.48(c), and provided no other regulation, technical specification, license condition or requirement would require prior NRC approval, the licensee may make changes to the fire protection program without prior approval of the Commission if

1.1 Definitions

DOSE EQUIVALENT I-131 (continued)

I-133, I-134, and I-135 actually present. The DOSE EQUIVALENT I-131 concentration is calculated as follows:

$$\text{DOSE EQUIVALENT I-131} = (I-131) + 0.0060 (I-132) + 0.17 (I-133) + 0.0010 (I-134) + 0.029 (I-135).$$
The dose conversion factors used for this calculation are those listed in Federal Guidance Report (FGR) 11, "Limiting Values of Radionuclide Intake and Air Concentration and Dose Conversion Factors for Inhalation, Submersion, and Ingestion," 1989.

LEAKAGE

LEAKAGE shall be:

a. Identified LEAKAGE

1. LEAKAGE into the drywell, such as that from pump seals or valve packing, that is captured and conducted to a sump or collecting tank; or
2. LEAKAGE into the drywell atmosphere from sources that are both specifically located and known either not to interfere with the operation of leakage detection systems or not to be pressure boundary LEAKAGE;

b. Unidentified LEAKAGE

All LEAKAGE into the drywell that is not identified LEAKAGE;

c. Total LEAKAGE

Sum of the identified and unidentified LEAKAGE;

d. Pressure Boundary LEAKAGE

LEAKAGE through a nonisolable fault in a Reactor Coolant System (RCS) component body, pipe wall, or vessel wall.

LINEAR HEAT GENERATION RATE (LGHR)

The LHGR shall be the heat generation rate per unit length of fuel rod. It is the integral of the heat flux over the heat transfer area associated with the unit length.

LOGIC SYSTEM FUNCTIONAL TEST

A LOGIC SYSTEM FUNCTIONAL TEST shall be a test of all logic components required for OPERABILITY of a logic circuit,

(continued)

3.2 POWER DISTRIBUTION LIMITS

3.2.3 LINEAR HEAT GENERATION RATE (LHGR)

LCO 3.2.3 All LHGRs shall be less than or equal to the limits specified in the COLR.

APPLICABILITY: THERMAL POWER \geq 25% RTP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Any LHGR not within limits.	A.1 Restore LHGR(s) to within limits.	2 hours
B. Required Action and associated Completion Time not met.	B.1 Reduce THERMAL POWER to < 25% RTP.	4 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.2.3.1 Verify all LHGRs are less than or equal to the limits specified in the COLR.	Once within 12 hours after \geq 25% RTP <u>AND</u> 24 hours thereafter

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.1 Recirculation Loops Operating

LCO 3.4.1 Two recirculation loops with matched flows shall be in operation outside of the Stability Exclusion Region of the power/flow map specified in the COLR.

OR

One recirculation loop shall be in operation outside of the Stability Exclusion Region of the power/flow map specified in the COLR with the following limits applied when the associated LCO is applicable:

- a. LCO 3.2.1, "AVERAGE PLANAR LINEAR HEAT GENERATION RATE (APLHGR)," single loop operation limits specified in the COLR;
- b. LCO 3.2.2, "MINIMUM CRITICAL POWER RATIO (MCPR)," single loop operation limits specified in the COLR;
- c. LCO 3.2.3, "LINEAR HEAT GENERATION RATE (LHGR)," single loop operation limits specified in the COLR; and
- d. LCO 3.3.1.1, "Reactor Protection System (RPS) Instrumentation," Function 2.b (Average Power Range Monitor Neutron Flux - High (Flow Biased)), Allowable Value of Table 3.3.1.1-1 is reset for single loop operation.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or two recirculation loops in operation with core flow as a function of core THERMAL POWER in the Stability Exclusion Region of the power/flow map.	A.1 Initiate action to exit the Stability Exclusion Region.	Immediately

(continued)

3.7 PLANT SYSTEMS

3.7.7 The Main Turbine Bypass System

LCO 3.7.7 The Main Turbine Bypass System shall be OPERABLE.

OR

LCO 3.2.1, "AVERAGE PLANAR LINEAR HEAT GENERATION RATE (APLHGR)," LCO 3.2.2, "MINIMUM CRITICAL POWER RATIO (MCPR)," and LCO 3.2.3, "LINEAR HEAT GENERATION RATE (LHGR)," limits for one inoperable main turbine bypass valve, as specified in the COLR, are made applicable.

APPLICABILITY: THERMAL POWER \geq 25% RTP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Requirements of the LCO not met.	A.1 Satisfy the requirements of the LCO.	2 hours
B. Required Action and associated Completion Time not met. <u>OR</u> Two or more main turbine bypass valves inoperable.	B.1 Reduce THERMAL POWER to < 25% RTP.	4 hours

5.6 Reporting Requirements (continued)

5.6.3 Radioactive Effluent Release Report

The Radioactive Effluent Release Report covering the operation of the unit shall be submitted in accordance with 10 CFR 50.36a. The report shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the unit. The material provided shall be consistent with the objectives outlined in the ODAM and the Process Control Program and in conformance with 10 CFR 50.36a and 10 CFR 50, Appendix I, Section IV.B.1.

5.6.4 (Deleted)

5.6.5 Core Operating Limits Report (COLR)

- a. Core operating limits shall be established prior to each reload cycle, or prior to any remaining portion of a reload cycle, and shall be documented in the COLR for the following:
 - 1. The Average Planar Linear Heat Generation Rates for Specifications 3.2.1 and 3.7.7.
 - 2. The Minimum Critical Power Ratio for Specifications 3.2.2 and 3.7.7.
 - 3. The Linear Heat Generation Rates for Specifications 3.2.3 and 3.7.7.
 - 4. The three Rod Block Monitor Upscale Allowable Values for Specification 3.3.2.1.
 - 5. The power/flow map defining the Stability Exclusion Region for Specification 3.4.1.
- b. The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC, specifically those described in the following documents:
 - 1. NEDE-24011-P-A, "General Electric Standard Application for Reactor Fuel" (Revision specified in the COLR).

(continued)



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 251 TO

RENEWED FACILITY OPERATING LICENSE NO. DPR-46

NEBRASKA PUBLIC POWER DISTRICT

COOPER NUCLEAR STATION

DOCKET NO. 50-298

1.0 INTRODUCTION

By application dated July 17, 2014 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML14203A045), as supplemented by letter dated February 19, 2015 (ADAMS Accession No. ML15055A038), Nebraska Public Power District (NPPD, the licensee), requested changes to the Technical Specifications (TSs) for Cooper Nuclear Station (CNS). The supplemental letter dated February 19, 2015, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the U.S. Nuclear Regulatory Commission (NRC) staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on September 30, 2014 (79 FR 58820).

The proposed changes would move the Linear Heat Generation Rate (LHGR) and Single Loop Operation LHGR limits from the Technical Requirements Manual (TRM) to the TSs. Accordingly, the amendment would add TS 3.2.3, "Linear Heat Generation Rate (LHGR)," and modify TS 1.1, "Definitions," TS 3.4.1, "Recirculation Loops Operating," TS 3.7.7, "The Main Turbine Bypass System," and TS 5.6.5, "Core Operating Limits Report (COLR)." The licensee requested that the LHGR be moved to the TSs due to changes in methodology related to the cycle-specific analysis performed by Global Nuclear Fuel (GNF) to support CNS Cycle 23 operation.

2.0 REGULATORY EVALUATION

Section 182a of the Atomic Energy Act requires applicants for nuclear power plant operating licenses to include TSs as part of the license. The regulatory requirements related to the content of the TSs are contained in Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.36, "Technical specifications." Paragraph 10 CFR 50.36(b) requires that each license authorizing the operation of a facility will include TSs and that the TSs will be derived from the safety analyses. Paragraph 10 CFR 50.36(c) requires that the following categories be included in the TSs: (1) safety limits, limiting safety systems settings and control settings,

(2) limiting conditions for operation (LCOs), (3) surveillance requirements (SRs), (4) design features, and (5) administrative controls.

The regulations in 10 CFR 50.36(c)(2) state, in part, that:

Limiting conditions for operation are the lowest functional capability or performance levels of equipment required for safe operation of the facility. When a limiting condition for operation of a nuclear reactor is not met, the licensee shall shut down the reactor or follow any remedial action permitted by the technical specifications until the condition can be met.

The regulations in 10 CFR 50.36(c)(2)(ii)(B) require that an LCO be established for:

A process variable, design feature, or operating restriction that is an initial condition of a design basis accident or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

Pursuant to 10 CFR 50.36(c)(3), SRs establish "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."

The regulations in 10 CFR 50.46(b) establish acceptance criteria for emergency core cooling system (ECCS) evaluations for light-water nuclear power reactors, as summarized below:

- Peak cladding temperature (PCT) - the calculated maximum fuel element cladding temperature shall not exceed 2,200 degrees Fahrenheit (°F).
- Maximum cladding oxidation - the calculated total oxidation of the cladding shall nowhere exceed 0.17 times the total cladding thickness before oxidation.
- Maximum hydrogen generation - the calculated total amount of hydrogen generated from the chemical reaction of the cladding with water or steam shall not exceed 0.01 times the hypothetical amount that would be generated if all of the metal in the cladding cylinders surrounding the fuel, excluding the cladding surrounding the plenum volume, were to react.
- Coolable geometry - calculated changes in core geometry shall be such that the core remains amenable to cooling.
- Long-term cooling - after any calculated successful initial operation of the ECCS, the calculated core temperature shall be maintained at an acceptably low value and decay heat shall be removed for the extended period of time required by the long-lived radioactivity remaining in the core.

In addition to the above regulatory requirements, the following guidance documents were considered during this review:

- NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition" (SRP), Section 16, Revision 3.0, "Technical Specifications," March 2010 (ADAMS Accession No. ML100351425);
- SRP Section 4.2, Revision 3.0, "Fuel System Design," March 2007 (ADAMS Accession No. ML070740002); and
- NUREG-1433, Volume 1, Revision 4.0, "Standard Technical Specifications [STS] General Electric BWR/4 Plants" (STS), Revision 4.0, April 2012 (ADAMS Accession No. ML12104A192).

3.0 TECHNICAL EVALUATION

3.1 Proposed TS Changes

In its application dated July 17, 2014, the licensee proposed the following TS changes:

TS 1.1, Definitions

A new definition would be added to TS 1.1 and would state:

LINEAR HEAT GENERATION RATE (LHGR)	The LHGR shall be the heat generation rate per unit length of fuel rod. It is the integral of the heat flux over the heat transfer area associated with the unit length.
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New TS 3.2.3, LINEAR HEAT GENERATION RATE (LHGR)

New LCO 3.2.3 would state:

All LHGRs shall be less than or equal to the limits specified in the COLR.

New TS 3.2.3 APPLICABILITY would state:

THERMAL POWER \geq 25% RTP.

New Condition A with a Completion Time of "2 hours" would state:

A. Any LHGR not within limits.

New Required Action A.1 would state:

A.1 Restore LHGR(s) to within limits.

New Condition B with a Completion Time of "4 hours" would state:

- B. Required Action and associated Completion Time not met.

New Required Action B.1 would state:

- B.1 Reduce THERMAL POWER TO < 25% RTP.

New SR 3.2.3.1 would state:

Verify all LHGRs are less than or equal to the limits specified in the COLR.

The SR 3.2.3.1 Frequency would state:

Once within 12 hours after $\geq 25\%$ RTP

AND

24 hours thereafter.

TS 3.4.1, Recirculation Loops Operating

Current LCO 3.4.1 states, in part:

- b. LCO 3.2.2, "MINIMUM CRITICAL POWER RATIO (MCPR)," single loop operation limits specified in the COLR; and
- c. LCO 3.3.1.1, "Reactor Protection System (RPS) Instrumentation," Function 2.b (Average Power Range Monitor Neutron Flux-High (Flow Biased)), Allowable Value of Table 3.3.1.1-1 is reset for single loop operation.

Revised LCO 3.4.1 would state, in part:

- b. LCO 3.2.2, "MINIMUM CRITICAL POWER RATIO (MCPR)," single loop operation limits specified in the COLR;
- c. LCO 3.2.3, "LINEAR HEAT GENERATION RATE (LHGR)," single loop operation limits specified in the COLR; and
- d. LCO 3.3.1.1, "Reactor Protection System (RPS) Instrumentation," Function 2.b (Average Power Range Monitor Neutron Flux-High (Flow Biased)), Allowable Value of Table 3.3.1.1-1 is reset for single loop operation.

TS 3.7.7, The Main Turbine Bypass System

Current LCO 3.7.7 states:

The Main Turbine Bypass System shall be OPERABLE.

OR

LCO 3.2.2, "MINIMUM CRITICAL POWER RATIO (MCPR)," limits for one inoperable main turbine bypass valve, as specified in the COLR, are made applicable.

Revised LCO 3.7.7 would state:

The Main Turbine Bypass System shall be OPERABLE.

OR

LCO 3.2.1, "AVERAGE PLANAR LINEAR HEAT GENERATION RATE (APLHGR)," LCO 3.2.2, "MINIMUM CRITICAL POWER RATIO (MCPR)," and LCO 3.2.3, "LINEAR HEAT GENERATION RATE (LHGR)," limits for one inoperable main turbine bypass valve, as specified in the COLR, are made applicable.

TS 5.6.5, CORE OPERATING LIMITS REPORT (COLR)

Current TS 5.6.5.a states:

- a. Core operating limits shall be established prior to each reload cycle, or prior to any remaining portion of a reload cycle, and shall be documented in the COLR for the following:
 1. The Average Planar Linear Heat Generation Rates for Specification 3.2.1.
 2. The Minimum Critical Power Ratio for Specifications 3.2.2 and 3.7.7.
 3. The three Rod Block Monitor Upscale Allowable Values for Specification 3.3.2.1.
 4. The power/flow map defining the Stability Exclusion Region for Specification 3.4.1.

Revised TS 5.6.5.a would state:

- a. Core operating limits shall be established prior to each reload cycle, or prior to any remaining portion of a reload cycle, and shall be documented in the COLR for the following:
 - 1. The Average Planar Linear Heat Generation Rates for Specifications 3.2.1 and 3.7.7.
 - 2. The Minimum Critical Power Ratio for Specifications 3.2.2 and 3.7.7.
 - 3. The Linear Heat Generation Rates for Specifications 3.2.3 and 3.7.7.
 - 4. The three Rod Block Monitor Upscale Allowable Values for Specification 3.3.2.1.
 - 5. The power/flow map defining the Stability Exclusion Region for Specification 3.4.1.

3.2 Background

Fuel design limits can be exceeded if the fuel is producing heat equal to, or greater than, the critical power level, which is the power at which boiling in the core transitions from nucleate boiling to film boiling. Fuel damage occurs when the primary fission product barrier, the fuel cladding, is breached. Fuel damage is prevented by operation with adequate thermal margin.

Chapter 3, Section 7.5.1, "Steady-State Limits," of the CNS Updated Safety Analysis Report (USAR) discusses the limits placed on plant operation in order to maintain adequate thermal margin to prevent fuel cladding damage:

For purposes of maintaining adequate thermal margin during normal steady-state operation, the minimum critical power ratio (MCPR) shall not be lower than the limiting values in the Technical Specifications, the average planar linear heat generation rate (APLHGR) shall not be greater than the limiting values in the Technical Specifications and the maximum linear heat generation rate (LHGR) shall be maintained below the limits in the Technical Requirements Manual for all bundles.

Normally, in a boiling-water reactor (BWR), heat being produced by the fuel causes nucleate boiling. When the power level of the fuel becomes high enough for the heat to cause a transition to film boiling, the fuel is considered to have reached critical power. Film boiling is much less efficient at transferring heat away from the fuel, so localized overheating of the fuel may occur. For BWRs, the critical power is predicted using a correlation known as the General Electric (GE) critical quality boiling length correlation, better known as the GEXL correlation. Due to core and operational variations, the margin to boiling transition is most easily described in terms of a critical power ratio (CPR), which is defined as the rod critical power as calculated

by GEXL divided by the actual rod power. More margin is gained as the CPR value exceeds 1.0.

The LHGR is a measure of the heat generation rate of a fuel rod in a fuel assembly at any axial location and is a basic assumption in the fuel design analysis to avoid damage to the fuel cladding fission product barrier. The current TRM LCO requires that the LHGR of any rod in any fuel assembly at any axial location shall not exceed the maximum allowable LHGR as specified in the COLR. The COLR is established prior to each reload cycle using analytical methods previously approved by the NRC. The APLHGR is a measure of the average LHGR of all the fuel rods in a fuel assembly at any axial location.

In its license amendment request (LAR), the licensee stated that prior to operating cycle 23, the APLHGR limit was a composite limit of the ECCS LOCA limits and the thermal mechanical LHGR limits used to protect the primary fission product barrier (cladding). This allowed the APLHGR TS to meet the requirement for monitoring the ECCS LOCA limits as well as the thermal mechanical limits of the cladding. However, since the licensee's transition to PANAC11 (state-of-the-art BWR core physics and reactor transient prediction computer codes) in operating cycle 23, the application of the APLHGR limits are based solely on monitoring the ECCS LOCA limits. Therefore, thermal mechanical limits will be monitored independently with a LHGR limit, which must reside in the TSs, as required by 10 CFR 50.36(c)(2)(ii)(B), Criterion 2.

The proposed changes would affect the CNS TSs by:

- adding a TS 1.1 definition for LHGR;
- adding a new LCO 3.2.3 for LHGR;
- revising LCO 3.4.1, "Recirculation Loops Operating";
- revising LCO 3.7.7, "The Main Turbine Bypass System"; and
- revising TS 5.6.5, "Core Operating Limits Report (COLR)."

3.3 NRC Staff Evaluation

3.3.1 CNS Operating Cycle 23 Core

In Section 2.2 of the LAR dated July 17, 2014, the licensee stated that prior to operating cycle 23, the APLHGR thermal limit in TS 3.2.1 was a composite limit of the ECCS LOCA limits and the thermal mechanical LHGR limits used to protect fuel cladding as the primary fission product barrier. This allowed the APLHGR TS to meet the requirements for monitoring the ECCS LOCA limits as well as the thermal mechanical limits.

Due to a change in methodology, specifically, the implementation and application of PANAC11 in the analysis of the operating cycle 23 core, the APLHGR limits are now solely based upon ensuring that the PCT during a design basis LOCA does not exceed the 10 CFR 50.46 ECCS criteria. The thermal mechanical limits are now monitored independently and rely upon the calculated LHGR limit. Since the limits are now monitored separately, both limits must reside in the TS and have a unique LCO for each (i.e., a new TS must be added, TS 3.2.3, "Linear Heat

Generation Rate (LHGR).” Due to the addition of the LHGR limit to the TSs, revisions also apply to the following TSs: 1.1, 3.4.1, 3.7.7, and 5.6.5.

In a request for additional information (RAI) dated January 21, 2015 (ADAMS Accession No. ML15021A249), the NRC staff requested that the licensee provide the proposed markups (revisions) to the TRM and the COLR as a result of this LAR (RAI-1). In the licensee's response to RAI-1 dated February 19, 2015, markups to the COLR and the TRM were provided as Attachment 2 and Attachment 3, respectively. The COLR for operating cycle 29 was provided in its entirety, with the revisions (markups) consisting of the heading changes and administrative revisions for headings and introductory text discussing applicable TSs limits contained in the COLR. In its February 19, 2015, supplement, the licensee also provided the Cooper Cycle 29 COLR, Rev. 0 (no markup), Section 2 (APLHGR) and Section 6 (Maximum LHGR), as Attachments 4 and 5, respectively. The provided sections are identical to their relevant sections in Attachment 2, except that the marked up changes in Attachment 2 are not present in Attachments 4 and 5. The markups to the COLR were administrative in nature and, therefore, the NRC staff determines that RAI-1 is resolved.

In Section 4.3 of its LAR, which contained the licensee's proposed no significant hazards consideration discussion, the licensee stated, in part, that “the proposed change does not modify the limits, change assumptions for the accident analysis, or change operation of the station.” However, the NRC staff noted no references or analyses provided to support this assertion. Furthermore, the NRC staff noted that the application does not state whether the accident analysis was re-performed in view of the proposed changes in the LAR, and if it was, whether that analysis shows any reduction to the margin between the limits and the as-calculated values (including uncertainties). In its RAI dated January 21, 2015, the NRC staff requested that the licensee provide the references and technical basis to support the above statement, as well as to clarify whether it had re-performed the accident analysis in support of the LAR (RAI-6).

In its response to RAI-6 dated February 19, 2015, the licensee stated that the proposed LAR change is administrative in nature, and that it did not re-perform any analyses since the actual LHGR limit values are unchanged. The NRC staff compared the proposed changes from the LAR, including the TSs, and the COLR and TRM changes provided with the February 19, 2015, supplement to verify that no operating limits will be changed. Although the staff noted some differences between the cycle 28 and cycle 29 COLRs related to specific fuel bundles and their identification, the NRC staff did not find any instance where the changes pursuant to this LAR would modify operating limits. Therefore, the NRC staff determines that RAI-6 is resolved.

Table 1 below illustrates those elements of the TS that are altered by the proposed changes in the LAR. In its RAI dated January 21, 2015, the NRC staff requested that the licensee confirm that there are no changes required to TS LCO 3.2.1, SRs for TS LCO 3.4.1, or SRs for TS LCO 3.7.7 (RAI-7).

Table 1. LCOs SRs and Bases Affected by Changes

LCO	SR	Bases
Not supplied	Not supplied	3.2.1
3.2.3 LHGR	3.2.3.1	3.2.3
3.4.1 Loops	Not supplied	3.4.1
3.7.7 Bypass	Not supplied	3.7.7
5.6.5 COLR	n/a	n/a

In its RAI response dated February 19, 2015, the licensee confirmed that the proposed changes in the LAR do not require additional changes to LCO 3.2.1, or SRs to LCO 3.4.1 and LCO 3.7.7. Based on the information provided by the licensee, the NRC staff determines that RAI-7 is resolved.

3.3.2 Transition to PANAC11 Methodology in CNS Operating Cycle 23

The LAR describes the implementation of the PANAC11 methodology in two ways. The first is mentioned in Section 2.2 of the LAR, and it relates to the change in the treatment of APLHGR and LHGR. The second is in relation to the several references to 1D and 3D codes and the treatment of adjustment factors such as the flow dependent multiplier (MAPFAC_i) in Section 3.3 of the LAR.

Section 2.2 of the LAR states that the proposed changes are a result of the implementation of the PANAC11 methodology in CNS operating cycle 23. In its RAI dated January 21, 2015, the NRC staff requested that the licensee provide a reference to the approved methodology for the proposed changes (RAI-2).

In its RAI response dated February 19, 2015, the licensee provided a reference to Amendment 26 of NEDE-24011-P-A, "General Electric Standard Application for Reactor Fuel (GESTAR II, Main)" (contains proprietary information, withheld from public disclosure under 10 CFR 2.390), which was reviewed and approved by the NRC in a safety evaluation (SE) dated November 10, 1999 (ADAMS Accession No. ML993230190). Since the licensee has provided information to assure that the methodology used to support the proposed changes in the LAR is approved by the NRC, the NRC staff determines that RAI-2 is resolved.

LAR Section 3.3 describes the use of 1D and 3D BWR simulator codes for the analysis of MCPR and APLHGR limits. In its RAI dated January 21, 2015, the NRC staff requested that the licensee provide citable references for the 1D and 3D codes used (RAI-3). In its RAI response dated February 19, 2015, the licensee provided the following information regarding the codes used for the analyses described above (the documents themselves were not provided):

- For the 1D code, the licensee referenced Section 3.7.1 of NEDC-33270P, "GNF2 Advantage Generic Compliance with NEDE-24011-P-A (GESTAR II)," and Section 2.7.1 of NEDC-32868P, "GE14 Compliance with Amendment 22 of NEDE-24011-P-A (GESTAR II)."
- For the 3D code, Section 3.7.2 of NEDC-33270P, "GNF2 Advantage Generic Compliance with NEDE-24011-P-A (GESTAR II)," and Section 2.7 of NEDC-32868P, "GE14 Compliance with Amendment 22 of NEDE-24011-P-A (GESTAR II)."

In its RAI response, the licensee further stated that the above references have not been individually reviewed by the NRC staff, but are documented to be in compliance with Section 1.1 of GESTAR II. Under the GESTAR II Amendment 22 process, compliance with Section 1.1 of GESTAR II requirements constitutes NRC acceptance of the fuel design without specific NRC review. Based on the above, the NRC staff determines that RAI-3 is resolved.

In Section 3.3 of the LAR, the licensee stated that the MAPFAC multiplier is contained in the COLR. However, the only COLR information provided in the application is TS 5.6.5, "Core Operating Limits Report (COLR)," which does not contain such information for the NRC staff's review. In its RAI dated January 21, 2015, the staff requested that the licensee provide all portions of the COLR that are applicable to this LAR (RAI-4).

As discussed in Section 3.2 of this SE, the licensee's supplement dated February 19, 2015, contained the CNS Cycle 29 COLR Rev. 0 (no markup, Sections 2 and 6, as Attachments 4 and 5, respectively), and a proposed revised (markup) COLR for CNS Cycle 29 in its entirety (Attachment 2 to the letter). The NRC staff's review of the administrative changes to the COLR is described in Section 3.2 of this SE. Therefore, the NRC staff determines that RAI-4 is resolved.

In Section 3.5 of its LAR, the licensee stated that the proposed revisions to TS 1.1, TS 3.2, TS 3.4, TS 3.7, and TS 5.6 to add the LHGR limits have no impact on the USAR accident analysis and ensures that the assumptions in the USAR accident analyses remain valid. In order to review and confirm this statement, in its RAI dated January 21, 2015, the NRC staff requested that the licensee provide the proposed markup for changes to the USAR as a result of this amendment, the portion of the USAR that contains the accident analyses assumptions, and any other applicable references cited in the relevant USAR sections (RAI-5).

In its RAI response dated February 19, 2015, the licensee provided the following USAR sections as Attachment 6 to the supplement: (1) Chapter III, "Reactor," Section 2.0, "Fuel Mechanical Design"; (2) Chapter III, Section 7.5, "Thermal and Hydraulic Limits"; (3) Chapter XIV, "Station Safety Analysis," Section 4.4.1, "Fuel Damage"; and (4) Chapter XIV, Section 7.1, "Abnormal Operational Transient Analysis Results and Conclusions," of the CNS USAR. All provided

sections of the CNS USAR were unmodified except for Section 7.5, which was provided with revisions incorporated as part of the approval of the LAR. This change consisted of replacing statements that direct the location for the LHGR requirements from the TRM to the TS.

The licensee's response to RAI-5 also included NRC revised and approved references that are related to the LHGR and other documents that were not NRC reviewed but were documented to be in compliance with Section 1.1 of GESTAR II. Under the GESTAR II Amendment 22 process, compliance with Section 1.1 of GESTAR II constitutes NRC approval. Based on the above, the NRC staff determines that RAI-5 is resolved.

In its RAI dated January 21, 2015, the NRC staff requested references that appeared to be missing in Attachment 4 of the LAR, Sections B.3.4.1 and B.3.7.7 (RAI-8). In Attachment 7 of the licensee's RAI response dated February 19, 2015, the licensee provided a comprehensive list of the requested references. Therefore, the NRC staff determines that RAI-8 is resolved.

In Attachment 4 to the LAR, the TS Bases for new LCO 3.2.3, "Linear Heat Generation Rate (LHGR)," describes adjustments to the LHGR limit using the smaller of $LHGRFAC_r$, $LHGRFAC_p$, and 0.75, where 0.75 has been determined by a specific single recirculation loop analysis. However, this methodology then references both NEDO-24258, "Cooper Nuclear Station Single Loop Operation," dated May 1980, and NEDC-32687P, Revision 1, "Cooper Nuclear Station SAFER/GESTR-LOCA Loss-of-Coolant Accident Analysis," dated March 1997. In its RAI dated January 21, 2015, the NRC staff requested that the licensee provide clarification regarding the use of these references, the underlying methodology, and whether they are approved by the NRC (RAI-9).

In its RAI response dated February 19, 2015, the licensee proposed changes to page B 3.2-12 of the TS bases to remove the 0.75 fixed value and replace it with a reference to the COLR. The licensee provided the methodologies used to support the cycle-specific validation of the LHGRFAC parameters (and therefore maintain them in the COLR), as well as the references in which the NRC approved NEDO-24258 and NEDC-32687P, Revision 1. Therefore, the NRC staff determines that RAI-9 is resolved.

In Attachment 4 to the LAR, TS Bases 3.2.1, paragraph 2 under "Applicable Safety Analyses," states, in part, that "APLHGR limits are developed as a function of exposure and the various operating core flow and power states" using methods described in NEDO-24258 and NEDC-32914P, "Maximum Extended Load Line Limit and Increased Core Flow for Cooper Nuclear Station," Revision 0, dated January 2000. In its RAI dated January 21, 2015, the NRC staff requested that the licensee provide clarification regarding the use of these references, the underlying methodology, and whether they are approved by the NRC (RAI-10).

In its RAI response dated February 19, 2015, the licensee provided information to demonstrate NRC approval of a referenced methodology or clarification stating that the reference complies with the GESTAR II Amendment 22 process, compliance with which constitutes NRC approval. Additionally, the licensee proposed a change to the second paragraph of Applicable Safety Analyses section of TS B 3.2.1, to state that "APLHGR limits are developed as a function of exposure and the various operation core flow and power states to ensure adherence to 10 CFR 50.46 during a LOCA (Refs 1 and 9)." References 1 and 9 are used instead of References 5 and 6 as they reference a more complete, higher-tier methodology. Regarding

Reference 9, the licensee stated that NEDC-32687P, "Cooper Nuclear Station SAFER/GESTR-LOCA Loss-of-Coolant Accident Analysis," Revision 1, dated March 1999 has been accepted for use at CNS under the 10 CFR 50.59 process. Since the methodologies in use have been approved by the NRC or evaluated by the licensee under the 10 CFR 50.59 process, the NRC staff determines that RAI-10 is resolved.

In summary, the NRC staff review did not identify any methodology restrictions or changes as part of this LAR. The NRC staff review did not identify any departures or changes from NRC approved methodology in the LAR. Finally, the NRC staff review did not identify any deviations or changes from NRC approved calculational uncertainties in the LAR.

3.3.3 Revisions to TSs

The NRC staff reviewed the proposed TSs changes by comparing the licensee proposed TSs and SRs to the regulatory criteria using the guidance documents specified in Section 2.0 of this SE to determine the acceptability of the proposed TSs and SRs to meet the requirements of 10 CFR 50.36.

TS 1.1, "Definitions"

The definition of LHGR is not currently in the CNS TS. The licensee proposed to add the definition "LINEAR HEAT GENERATION RATE (LHGR)" to TS 1.1, consistent with NUREG-1433, Revision 4. When a TS term is written in all capital letters, this indicates to the reader that it is defined in TS 1.1. In doing so, the use of the term in various CNS TSs is clarified and the proposed change is, therefore, acceptable.

TS 3.2.3, "LINEAR HEAT GENERATION RATE (LHGR)"

The CNS TSs do not presently contain an independent specification for the LHGR. The design basis of the CNS core per the USAR, Section III, includes the establishment of limits for use in setting devices in the nuclear safety systems so that no damage occurs to the primary fission product barrier of the fuel cladding as a result of abnormal operational transients. Previous to this change, the LHGR limits were specified in the CNS TRM.

As discussed in Section 3.2 of this SE, and in order to maintain conformance with the CNS core design basis and the regulations in 10 CFR 50.36, the licensee identified the need for the LHGR limit to reside independently in the TSs after implementation of the PANAC11 methodology in CNS operating cycle 23.

The TS 3.2.3 of NUREG-1433, Revision 4, is designated as optional in order to account for variation among boiling water reactor units that either have a combined APLHGR limit or separate APLHGR and LHGR limits. Since the TS LCO 3.2.1 will no longer be a composite limit as it was in the past, the licensee states that the addition of LCO 3.2.3 to the TSs will now satisfy the 10 CFR 50.36(c)(2)(ii)(B), LCO Criterion 2 requirement to be in TSs: "A process variable design feature or operating restriction that is an initial condition or a design basis accident or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier."

The proposed new LCO 3.2.3 includes a 2 hour completion time to restore any LHGR to within its limits. In Section 4.1.2 of the LAR, the licensee states that this completion time is based on the low probability of a transient or design basis accident occurring while the LHGR is out of specification. If the required action and completion time is not met, the LCO includes an action to reduce power to less than 25 percent rated thermal power (% RTP) within 4 hours, as the TS bases state that the reactor is operating with a substantial margin to the LHGR limits at that power (and the LHGR limit is no longer applicable). The licensee states in Section 4.1.2 of the LAR that completion of a power reduction to 25% RTP can be completed within 4 hours in an orderly manner, without challenging plant systems. The NRC staff concludes that the proposed completion times are commensurate with the urgency of the need to take action and a reasonable time for such action to be taken. Additionally, these completion times are consistent with NUREG-1433, Revision 4, as allowed by the NRC for other facilities of a similar design, and, therefore, the proposed new LCO 3.2.3 meets the requirements in 10 CFR 50.36.

The proposed new SR 3.2.3.1 requires the licensee to verify that all LHGRs are less than or equal to the limits specified in the COLR once within 12 hours after reaching greater than or equal to 25% RTP and then every 24 hours thereafter. The initial SR performance 12 hours after reaching 25% RTP recognizes the larger margins to thermal limits while operating at lower power levels. In Section 3.3 of the LAR, the licensee stated that thereafter a daily check is performed "to determine if fuel burnup, or control rod movement have caused changes in power distribution," and that "since changes to burnup are slow and control rods are moved infrequently, a daily check of power distribution is adequate." The NRC staff concludes that these frequencies are reasonable and are consistent with NUREG-1433, Revision 4 guidance for plants of similar design and, therefore, they meet the requirements of 10 CFR 50.36.

The NRC staff compared the TS containing LCO 3.2.3 and SR 3.2.3.1 as proposed by CNS in Attachment 2, page 3.2-4 of the LAR for LHGR to the STS guidance. The proposed changes are due to a change in analysis methods, not due to physical changes in the CNS structures, systems, and components (SSCs). The TSs changes match the correlating NUREG-1433, Revision 4 STS in format and content. The NRC concludes that both the proposed TS and SR, as well as the reasons for inclusion in the TS, are acceptable in that they meet the requirements of 10 CFR 50.36.

TS 3.4.1, "Recirculation Loops Operating"

In its LAR, the licensee stated that the addition of the LHGR LCO to the single loop operation section of TS LCO 3.4.1 is consistent with the NRC approved methodology in GESTAR II, and is currently specified in the TRM. The licensee's current TS LCO 3.4.1, "Recirculation Loops Operating," does not include the reference to the COLR limit for new LCO 3.2.3, LHGR. The proposed revision inserts LCO 3.2.3, LHGR, as it pertains to the single loop operations LHGR limit in the COLR, as described below (revisions underlined):

LCO 3.4.1 Two recirculation loops with matched flows shall be in operation outside of the Stability Exclusion Region of the power/flow map specified in the COLR.

OR

One recirculation loop shall be in operation outside of the Stability Exclusion Region of the power/flow map specified in the COLR with the following limits applied when the associated LCO is applicable:

- a. LCO 3.2.1, "AVERAGE PLANAR LINEAR HEAT GENERATION RATE (APLHGR)," single loop operation limits specified in the COLR;
- b. LCO 3.2.2, "MINIMUM CRITICAL POWER RATIO (MCPR)," single loop operation limits specified in the COLR; ~~and~~
- c. LCO 3.2.3, "LINEAR HEAT GENERATION RATE (LHGR),"
single loop operation limits specified in the COLR; and
- ~~e.d.~~ LCO 3.3.1.1, "Reactor Protection System (RPS) Instrumentation, " Function 2.b (Average Power Range Monitor Neutron Flux-High (Flow Biased)), Allowable Value of Table 3.3.1.1-1 is reset for single loop operation.

In its LAR, the licensee stated that moving the single loop LHGR limit from the TRM to the TSs will ensure that CNS will continue to meet the requirements of 10 CFR 50.36. Since the LHGR limits, as specified in the COLR, will now be located in the TSs as LCO 3.2.3, it is reasonable that the requirement to meet the LHGR single loop operation flow limits (as specified in the COLR) should also be located in the TSs. Therefore, the NRC staff concludes that the proposed revision to TS 3.4.1 is acceptable in that it meets the requirements of 10 CFR 50.36.

The NRC staff reviewed the proposed addition to TS LCO 3.4.1 as proposed by CNS and compared the revised LCO to the STS guidance. This proposed change is administrative in nature and does not involve any physical changes to SSCs in the plant, or affect the way SSCs are operated or controlled and is, therefore, acceptable.

TS 3.7.7, "Main Turbine Bypass System"

In its LAR, the licensee stated that the addition of LCO 3.2.1, APLHGR, and LCO 3.2.3, LHGR, to the Main Turbine Bypass System section of TS 3.7.7 is consistent with NRC approved methodology contained in GESTAR II. The proposed revision makes the following modifications to LCO 3.7.7 (additions are underlined):

LCO 3.7.7 The Main Turbine Bypass System shall be OPERABLE.

OR

LCO 3.2.1, "AVERAGE PLANAR LINEAR HEAT GENERATION RATE (APLHGR)," LCO 3.2.2, "MINIMUM CRITICAL POWER RATIO (MCPR)," and LCO 3.2.3, "LINEAR HEAT GENERATION RATE (LHGR)," limits for one inoperable main turbine bypass valve, as specified in the COLR, are made applicable.

Regarding the revisions to TS LCO 3.7.7, the licensee stated in Section 3.4 of the LAR dated July 17, 2014, that:

The addition of LCO 3.2.1, APLHGR, and LCO 3.2.3, LHGR, to the Main Turbine Bypass System section TS 3.7.7 is consistent with GESTAR II. The off-rated LHGR and APLHGR limit multipliers are calculated for when all bypass valves are in service and also when one bypass valve is out of service. The results from these two sets of multipliers have always been the same, thus only the results from one bypass valve out of service are used and reported in the COLR.

All three main turbine bypass valves are required to be operable in order to limit peak pressure in the main steam lines and maintain reactor pressure within acceptable limits during events that cause rapid pressurization, so as to ensure that the safety limit MCPR is not exceeded. With one valve inoperable, modifications to MCPR operating limits are specified in the COLR, and, since the licensee stated that the results from one set of bypass valves out of service are the same as with all valves in service, this is equivalent to an administrative change.

The NRC staff reviewed the proposed revision to TS LCO 3.7.7 for the Main Turbine Bypass System to the STS guidance. The proposed change is administrative in nature and does not involve any physical changes to SSCs in the plant, or affect the way SSCs are operated or controlled and is, therefore, acceptable in that it meets the requirements of 10 CFR 50.36.

TS 5.6.5, "CORE OPERATING LIMITS REPORT (COLR)"

The licensee also made the following administrative changes TS 5.6.5, "CORE OPERATING LIMITS REPORT (COLR)," in order to add the new LHGR limits residing in the TSs:

- a. Core operating limits shall be established prior to each reload cycle, or prior to any remaining portion of a reload cycle, and shall be documented in the COLR for the following:
 1. The Average Planar Linear Heat Generation Rates for Specifications 3.2.1 and 3.7.7.
 2. The Minimum Critical Power Ratio for Specifications 3.2.2 and 3.7.7.
 3. The Linear Heat Generation Rates for Specifications 3.2.3 and 3.7.7.
 - ~~3.4.~~ The three Rod Block Monitor Upscale Allowable Values for Specification 3.3.2.1.
 - ~~4.5.~~ The power/flow map defining the Stability Exclusion Region for Specification 3.4.1.

The NRC staff reviewed the proposed addition to TS 5.6.5 as compared to the STS guidance. The proposed changes are administrative in nature and do not involve any changes to SSCs in the plant, and do not affect the way SSCs are operated and controlled, and are, therefore, acceptable in that they meet the requirements of 10 CFR 50.36.

Considering the above changes to the TSs, the NRC staff concludes that the changes are acceptable in order to align the TSs with the analysis of record and the requirements of 10 CFR 50.36.

TS Bases

The licensee may make changes to the TS Bases without prior NRC staff review and approval in accordance with the TS Bases Control Program, as described in CNS TS 5.5.10. Accordingly, along with the proposed TS changes, the licensee also submitted TS Bases changes corresponding to the proposed TS changes. The NRC staff reviewed the TS Bases and determined that the changes are consistent with the proposed TS changes and provide the purpose for each requirement in the specification consistent with the Commission's Final Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors dated July 22, 1993 (58 FR 39132).

3.4 Summary and Conclusion

The NRC staff's review of the proposed changes to the CNS TSs concluded that the licensee's request to move the LHGR limits from the TRM to the TSs is acceptable, since approved

methodologies were used in accordance with NRC guidance. The NRC staff's review concludes that the licensee used methods consistent with the regulatory requirements and guidance identified in Section 2.0 of this Safety Evaluation.

4.0 STATE CONSULTATION

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

5.0 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 adds 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 published in the *Federal Register* on September 30, 2014 (79 FR 58820). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

6.0 CONCLUSION

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

Principal Contributors: F. Forsaty, NRR
P. Snyder, NRR

Date: July 14, 2015

O. Limpias

- 2 -

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

Sincerely,

/RA/

Siva P. Lingam, Project Manager
Plant Licensing Branch IV-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-298

Enclosures:

1. Amendment No. 251 to DPR-46
2. Safety Evaluation

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***via memo**

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DATE	7/9/15	7/8/15	6/22/15	5/29/15
OFFICE	OGC - NLO	NRR/DORL/LPL4-1/BC	NRR/DORL/LPL4-1/PM	
NAME	STurk	MMarkley (FLoyn for)	SLingam	
DATE	7/10/15	7/14/15	7/14/15	

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