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

August 18, 2015

Vice President, Operations
Entergy Operations, Inc.
Grand Gulf Nuclear Station
P.O. Box 756
Port Gibson, MS 39150

SUBJECT: GRAND GULF NUCLEAR STATION, UNIT 1 - ISSUANCE OF AMENDMENT REGARDING TECHNICAL SPECIFICATION 2.1.1.2 OF TECHNICAL SPECIFICATION SECTION 2.1.1, "REACTOR CORE SLS" (TAC NO. MF5304)

Dear Sir or Madam:

The U.S. Nuclear Regulatory Commission (NRC) has issued the enclosed Amendment No. 203 to Facility Operating License No. NPF-29 for the Grand Gulf Nuclear Station, Unit 1. This amendment consists of changes to the Technical Specifications (TSs) in response to your application dated November 21, 2014, as supplemented by letter dated April 14, 2015.

The amendment revises TS 2.1.1.2 of TS Section 2.1.1, "Reactor Core SLs [Safety Limits]." Specifically, the cycle-specific safety limit minimum critical power ratio values for Cycle 20 were revised in support of the Maximum Extended Load Line Limit Plus license amendment request.

Enclosure 2 to this letter contains Proprietary Information. Upon separation from Enclosure 2, this letter is DECONTROLLED.

The NRC had determined that the related safety evaluation (SE) contains proprietary information pursuant to Title 10 of the *Code of Federal Regulations*, Section 2.390, "Public inspections, exemptions, requests for withholding." Accordingly, the NRC staff has also prepared a non-proprietary version of the SE, which is provided in Enclosure 3. The proprietary version of the SE is provided in Enclosure 2. The Notice of Issuance will be included in the Commission's next biweekly *Federal Register* notice.

Sincerely,

Alan Wang

Alan B. Wang, Project Manager
Plant Licensing IV-2 and Decommissioning
Transition Branch
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-416

Enclosures:
1. Amendment No. 203 to NPF-29
2. Safety Evaluation (proprietary)
3. Safety Evaluation (non-proprietary)

cc w/encls 1 and 3: Distribution via Listserv

ENCLOSURE 1

AMENDMENT NO. 203

TO FACILITY OPERATING LICENSE NO. NPF-29

ENTERGY OPERATIONS, INC.

GRAND GULF NUCLEAR STATION, UNIT 1

DOCKET NO. 50-416

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

ENTERGY OPERATIONS, INC.

SYSTEM ENERGY RESOURCES, INC.

SOUTH MISSISSIPPI ELECTRIC POWER ASSOCIATION

ENTERGY MISSISSIPPI, INC.

DOCKET NO. 50-416

GRAND GULF NUCLEAR STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 203
License No. NPF-29

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Entergy Operations, Inc. (the licensee), dated November 21, 2014, as supplemented by letter dated April 14, 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 amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and Paragraph 2.C.(2) of Facility Operating License No. NPF-29 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 203 are hereby incorporated in the license. Entergy Operations, Inc. shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of its date of issuance and shall be implemented within 180 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Meena K. Khanna, Chief
Plant Licensing IV-2 and Decommissioning
Transition Branch
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Facility Operating
License No. NPF-29 and the
Technical Specifications

Date of Issuance: August 18, 2015

ATTACHMENT TO LICENSE AMENDMENT NO. 203

FACILITY OPERATING LICENSE NO. NPF-29

DOCKET NO. 50-416

Replace the following pages of the Facility Operating License No. NPF-29 and 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.

Facility Operating License

Remove	Insert
-4-	-4-

Technical Specifications

Remove	Insert
2.0-1	2.0-1

(b) SERI is required to notify the NRC in writing prior to any change in (i) the terms or conditions of any new or existing sale or lease agreements executed as part of the above authorized financial transactions, (ii) the GGNS Unit 1 operating agreement, (iii) the existing property insurance coverage for GGNS Unit 1 that would materially alter the representations and conditions set forth in the Staff's Safety Evaluation Report dated December 19, 1988 attached to Amendment No. 54. In addition, SERI is required to notify the NRC of any action by a lessor or other successor in interest to SERI that may have an effect on the operation of the facility.

C. The 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

Entergy Operations, Inc. is authorized to operate the facility at reactor core power levels not in excess of 4408 megawatts thermal (100 percent power) in accordance with the conditions specified herein.

(2) Technical Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 203 are hereby incorporated into this license. Entergy Operations, Inc. shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

During Cycle 19, GGNS will conduct monitoring of the Oscillation Power Range Monitor (OPRM). During this time, the OPRM Upscale function (Function 2.f of Technical Specification Table 3.3.1.1-1) will be disabled and operated in an "indicate only" mode and technical specification requirements will not apply to this function. During such time, Backup Stability Protection measures will be implemented via GGNS procedures to provide an alternate method to detect and suppress reactor core thermal hydraulic instability oscillations. Once monitoring has been successfully completed, the OPRM Upscale function will be enabled and technical specification requirements will be applied to the function; no further operating with this function in an "indicate only" mode will be conducted.

2.0 SAFETY LIMITS (SLs)

2.1 SLs

2.1.1 Reactor Core SLs

2.1.1.1 With the reactor steam dome pressure < 685 psig or core flow < 10% rated core flow:

THERMAL POWER shall be ≤ 21.8% RTP.

2.1.1.2 With the reactor steam dome pressure ≥ 685 psig and core flow ≥ 10% rated core flow:

MCPR shall be ≥ 1.15 for two recirculation loop operation or ≥ 1.15 for single recirculation loop operation.

2.1.1.3 Reactor vessel water level shall be greater than the top of active irradiated fuel.

2.1.2 Reactor Coolant System Pressure SL

Reactor steam dome pressure shall be ≤ 1325 psig.

2.2 SL Violations

With any SL violation, the following actions shall be completed within 2 hours:

2.2.1 Restore compliance with all SLs; and

2.2.2 Insert all insertable control rods.

(continued)

ENCLOSURE 3
(NONPROPRIETARY)

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR

RELATED TO AMENDMENT NO. 203

TO FACILITY OPERATING LICENSE NO. NPF-29

ENTERGY OPERATIONS, INC.

GRAND GULF NUCLEAR STATION, UNIT 1

DOCKET NO. 50-416

Proprietary information pursuant to Section 2.390 of Title 10 of
the *Code of Federal Regulations* has been redacted from this document.

Redacted information is identified by blank space enclosed within double brackets

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 203 TO

FACILITY OPERATING LICENSE NO. NPF-29

ENTERGY OPERATIONS, INC., ET AL.

GRAND GULF NUCLEAR STATION, UNIT 1

DOCKET NO. 50-416

1.0 INTRODUCTION

By application dated November 21, 2014 (Reference 1), as supplemented by letter dated April 14, 2015 (Reference 2), Entergy Operations, Inc. (Entergy, the licensee), requested changes to the Technical Specifications (TSs) for Grand Gulf Nuclear Station, Unit 1 (GGNS). The supplemental letter dated April 14, 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 March 31, 2015 (80 FR 17087).

The amendment revises TS 2.1.1.2 of TS Section 2.1.1, "Reactor Core SLs [Safety Limits]." Specifically, the cycle-specific safety limit minimum critical power ratio (SLMCPR) values for Cycle 20 were revised in support of the Maximum Extended Load Line Limit Plus (MELLLA+) license amendment request.

2.0 REGULATORY EVALUATION

The NRC staff used the following criteria for the review of this LAR:

Fuel design limits can be exceeded if the core exceeds critical power. Critical power is a term used for the power at which the fuel departs from nucleate boiling and enters a transition to film boiling. For boiling-water reactors (BWRs), the critical power is predicted using a correlation known as the GE (General Electric) critical quality boiling length correlation, or better known as the GEXL correlation. Due to core wide 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. The more the CPR value exceeds 1.0, the greater the margin to boiling transition. The SLMCPR is calculated using a statistical process that takes into account operating parameters and uncertainties. The operating limit minimum critical power ratio (OLMCPR) is equal to the SLMCPR plus a CPR margin for transients. At the OLMCPR, at least 99.9 percent of the rods avoid boiling transition during steady state operation and transients (NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR [Light-Water Reactor] Edition, Section 4.4, "Thermal and Hydraulic Design," Revision 2, March 2007 (Reference 3)) caused by a single operator error or equipment malfunction.

Title 10 of the *Code of Federal Regulations,* Part 50 (10 CFR 50), Appendix A, General Design Criterion (GDC) 10, "Reactor design," states, in part, that "[t]he reactor core and associated coolant, control, and protection systems shall be designed...to assure that specified acceptable fuel design limits are not exceeded during any condition of normal operation, including the effects of anticipated operational occurrences."

Safety Limits are required to be included in TSs by 10 CFR 50.36, "Technical specifications." The SLMCPR is calculated on a cycle-specific basis because it is necessary to account for the core configuration-specific neutronic and thermal-hydraulic response.

3.0 TECHNICAL EVALUATION

3.1 Cycle 20 Core

GGNS is a GE Type 6 BWR design. The licensee proposed to change the SLMCPR values in TS 2.1.1.2 from 1.11 to 1.15 for two-loop operation (TLO) and from 1.14 to 1.15 for single-loop operation (SLO).

Current TS 2.1.1.2 states:

> MCPR shall be ≥ 1.11 for two recirculation loop operation or ≥ 1.14 for single recirculation loop operation.

Revised TS 2.1.1.2 would state:

> MCPR shall be ≥ 1.15 for two recirculation loop operation or ≥ 1.15 for single recirculation loop operation.

This amendment supports the GGNS Cycle 20 core design. GGNS Cycle 20 core loading consists of 344 fresh GNF2 fuel bundles, 364 once-burnt GNF2 fuel bundles, and 92 twice-burnt GNF2 fuel bundles.

3.2 Major Contributors to SLMCPR Change

In general, the calculated SL is dominated by two key parameters: 1) flatness of the core bundle-by-bundle MCPR distribution, and 2) flatness of the bundle pin-by-pin power / R-Factor distribution. Greater flatness in either parameter yields more rods susceptible to boiling transition and thus a higher calculated SLMCPR. MCPR Importance Parameter (MIP) measures the core, bundle-by-bundle. MCPR distribution and R-Factor Importance Parameter (RIP) measures the bundle pin-by-pin power / R-Factor distribution. The impact of the fuel loading pattern on the calculated TLO SLMCPR has been correlated to the parameter MIPRIP, which combines the MIP and RIP values. Another factor besides the core MCPR distribution or the bundle R-factor distribution that significantly impacts the SLMCPR is the expansion of the analysis domain that comes with the initial application of MELLLA+ (Reference 4). The rated power/minimum core flow point is analyzed at a lower core flow (than without MELLLA+), using increased uncertainties (see Section 3.5.2 of this safety evaluation) that tend to increase the SLMCPR.

3.3 Methodology

Global Nuclear Fuel (GNF) developed the GGNS Cycle 20 SLMCPR values using the following NRC-approved methodologies and uncertainties:

- NEDC-32601P, "Methodology and Uncertainties for Safety Limit MCPR Evaluations," Revision 0, dated August 1999 (Reference 5).
- NEDC-32694P, "Power Distribution Uncertainties for Safety Limit MCPR Evaluation," August 1999 (Reference 6).
- NEDE-24011-P-A "General Electric Standard Application for Reactor Fuel," Revision 20, dated December 2013 (Reference 7).
- NEDC-32505P-A "R-Factor Calculation Method for GE11, GE12 and GE13 Fuel," Revision 1, July 1999 (Reference 8).
- NEDC-33173P, Revision 2, "Applicability of GE Methods to Expanded Operating Domains" Supplement 2, Parts 1-3, "Analysis of Gamma Scan Data and Removal of SLMCPR Margin," April 20, 2012 (Reference 9).

Plant-specific use of these methodologies must adhere to certain restrictions as addressed in Section 3.3.1 of this safety evaluation.

3.3.1 Methodology Restrictions

Based on the review of Topical Reports NEDC-32601P, NEDC-32694P, and Amendment 25 to NEDE-24011-P-A (GESTAR II) (Reference 6), the NRC staff identified the following restrictions for the use of these topical reports:

1. The TGBLA (lattice physics code) fuel rod power calculational uncertainty should be verified when applied to fuel designs not included in the benchmark comparisons of Table 3.1 of NEDC-32601P, since changes in fuel design can have a significant effect on calculation accuracy.

2. The effect of the correlation of rod power calculation uncertainties should be reevaluated to insure the accuracy of R-Factor uncertainty when the methodology is applied to a new fuel lattice.

3. In view of the importance of MIP (MCPR Importance Parameter) criterion and its potential sensitivity to changes in fuel bundle designs, core loading and operating strategies, the MIP criterion should be reviewed periodically as part of the procedural review process to insure that the specific value recommended in NEDC-32601-P is applicable to future designs and operating strategies.

3.3.1.1 Restrictions (1) and (2)

In addressing Restrictions (1) and (2), by letter dated September 24, 2001, from GNF to the NRC "Confirmation of 10x10 Fuel Design Applicability to Improved SLMCPR, Power Distribution and R-Factor Methodologies" (Reference 10), GNF states that the rod power calculational uncertainties are dominated by geometrical considerations in which GE14 is identical to GE12. GNF has stated that in the fuel bundle design Information Notice (Reference 11), GNF2 fuel is designed for mechanical, nuclear, and thermal-hydraulic compatibility with the other 10x10 GNF fuel designs. The design has features of the currently operating GE 10, GE 11/13 and GE 12/14, fuel including pellet-cladding interaction resistant barrier cladding, high performance spacers, part length rods, interactive thick corner/thin wall channel, and axial enrichment loading. The GNF2 design is a 10x10 array with 92 fuel rods, 2 large central water rods, and 14 part length fuel rods. The part length rod configuration improves efficiency and reactivity margins. Tables 2.1 and 3.1 of NEDC-32601P (Reference 5) provide a summary of SLMCPR uncertainties and a summary of pin power comparisons for a typical GE fuel design. The values given in these tables are representative of the values being calculated for GE14 and GNF2 fuel.

In an e-mail dated March 12, 2015 (Reference 12), the NRC staff requested the licensee (Request for additional information (RAI)-1) to explain the differences in design and geometrical considerations between GNF2 and GE 14 fuel. In the licensee's response to the NRC staff's question, by letter dated April 14, 2015 (Reference 2), the licensee stated that GNF2 is an

evolutionary fuel product based on GE14 and that it is not considered a new fuel design as it maintains the previously established 10x10 array.

Based on the above discussion, the NRC staff concludes that the SLMCPR and the rod power calculational uncertainties used by GNF to develop the GGNS Cycle 20 SLMCPR values are valid for GNF2 fuel and that the response to RAI-1 (Reference 2) addresses the NRC staff's concern and is acceptable.

3.3.1.2 Restriction (3)

The limiting control rod patterns used to calculate the SLMCPR reasonably assure that at least 99.9 percent of the fuel rods in the core would not be expected to experience boiling transition during normal operation or anticipated operational occurrences during the operation of GGNS Cycle 20. The NRC staff determined that the rod patterns used produces a limiting MCPR distribution that reasonably bounds the MCPR distributions that would be expected during the operation of the GGNS core throughout Cycle 20 in conjunction with the MELLLA+ LAR (Reference 14).

In summary, the NRC staff concludes that the licensee has adequately addressed the restrictions of Topical Reports NEDC-32601P-A, NEDC-32694P-A, Amendment 25 to NEDE-24011-P-A (GESTAR II) (Reference 6), and NEDC-32505P-A (Reference 8), and that the use of these reports to evaluate the GGNS Cycle 20 SLMCPR is acceptable.

3.4 Departures from the NRC-Approved Methodology

No departures from the NRC-approved methodologies were identified in the GGNS Cycle 20 SLMCPR calculations.

3.5 Deviations from the NRC-Approved Calculational Uncertainties

3.5.1 R-Factor

The R-factor is an input into the GEXL correlation used to describe the local pin-by-pin power distribution and the fuel assembly and channel geometry on the fuel assembly critical power. The R-factor uncertainty analysis includes an allowance for power peaking modeling uncertainty, manufacturing uncertainty and channel bow uncertainty. GNF has increased this uncertainty for all SLMCPR calculations to account for the potential impact of control blade shadow corrosion induced bow. GNF has generically increased the GEXL R-Factor uncertainty (Reference 5) to account for an increase in channel bow due to the emerging unforeseen phenomenon called control blade shadow corrosion-induced channel bow, which is not accounted for in the channel bow uncertainty component of the approved R-Factor uncertainty. The GGNS Cycle 20 analysis shows an expected channel bow uncertainty of [[ ]], which is bounded by a GEXL R-Factor uncertainty of up to [[ ]] that accounts for channel bow uncertainty (Reference 8). Thus, the NRC staff concludes that the use of a GEXL

R-Factor uncertainty adequately accounts for the expected control blade shadow corrosion-induced channel bow for GGNS Cycle 20.

3.5.2 Core Flow Rate and Random Effective Traversing Incore Probe Reading

GNF has committed (Reference 13) to the expansion of the state points used in the determination of the SLMCPR. Consistent with the Reference 13 commitments, GNF performs analyses at the rated core power and minimum licensed core flow point in addition to analyses at the rated core power and rated core flow point. The NRC-approved SLMCPR methodology is applied at each statepoint that is analyzed. For the TLO calculations performed in the MELLLA+ domain at rated power / minimum core flow and off-rated power / off-rated core flow, the approved uncertainty values for the core flow rate (2.5 percent) and the random effective traversing incore probe (TIP) reading (1.2 percent) are conservatively adjusted by using the SLO uncertainty values of 6.0 percent and 2.85 percent for the core flow rate and random effective TIP reading, respectively. The treatment of the core flow and random effective TIP reading uncertainties is based on a conservative assumption that the signal to noise ratio deteriorates as core flow is reduced.

In accordance to the limitation and conditions of NEDC-33006P-A, Revision 3 (Reference 15), SLO uncertainties are applied to TLO conditions for operation in the MELLLA+ region.

For GGNS Cycle 20, the most limiting SLMCPR calculation occurred at the 80.6 percent rated Power / 55 percent rated flow point. At low core flows, the search spaces for the limiting rod pattern and the nominal rod pattern are essentially the same. Hence, the rod pattern used to calculate the SLMCPR at 80.6 percent rated power / 55 percent rated flow reasonably assures that at least 99.9 percent of the fuel rods in the core would not be expected to experience boiling transition during normal operation or anticipated operational occurrences during the operation of GGNS Cycle 20. Consequently, the SLMCPR value calculated from the 80.6 percent rated power / 55 percent rated core flow condition limiting MCPR distribution reasonably bounds this mode of operation for GGNS Cycle 20. The NRC staff concludes that the uncertainty used in the analysis bounds the original non-flow dependent uncertainties and, therefore, the NRC staff concludes that the SLMCPR values are acceptable for GGNS Cycle 20.

3.6 Core Monitoring System

For GGNS Cycle 20, the GNF 3D MONICORE System will be used as the core monitoring system. The 3D MONICORE system is in widespread use throughout the GNF fueled fleet of BWRs like GGNS. Use of a current version of 3D MONICORE provides the plant capability to perform the reactivity anomaly surveillance. Use of 30 MONICORE has been previously evaluated and accepted by the NRC in a letter dated March 11, 1999 (Reference 6). Therefore, the NRC staff concludes the use of the GNF 3D MONICORE system for GGNS Cycle 20 is acceptable.

3.7 Technical Evaluation Conclusion

The NRC staff concludes that the licensee's proposed GGNS Cycle 20 SLMCPR values of 1.15 for two-recirculation-loop operation and 1.15 for single-recirculation-loop operation are acceptable for GGNS Cycle 20, since the approved methodologies are used in accordance with staff guidelines, as addressed in Section 3.0 of this safety evaluation. Further, the NRC staff concludes that the licensee used methods consistent with regulatory requirements identified in Section 2.0 of this safety evaluation.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Mississippi 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. 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 March 31, 2015 (80 FR 17087). 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 amendments will not be inimical to the common defense and security or to the health and safety of the public.

7.0 REFERENCES

1. Mulligan, Kevin, Entergy Operations, Inc., letter to U.S. Nuclear Regulatory Commission, "License Amendment Request to Revise Technical Specification 2.1.1.2, Grand Gulf Nuclear Station, Unit 1, Docket No. 50-416, License NO. NPF-29," dated November 21, 2014 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML14325A520).

2. Coutu, Tom, Entergy Operations, Inc., letter to U.S. Nuclear Regulatory Commission, "Safety Limit Minimum Critical Power Ratio Technical Specification 2.1.1.2, Revision, Request for Additional Information Response, Grand Gulf Nuclear Station, Unit 1, Docket No. 50-416, License NO. NPF-29," dated April 14, 2015 (ADAMS Accession No. ML15104A784).

3. U.S. Nuclear Regulatory Commission, NUREG-0800, "Standard Review Plan [SRP] for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR [Light Water Reactor] Edition (SRP), Chapter 4, Section 4.4, "Thermal and Hydraulic Design," Revision 2, March 2007 (ADAMS Accession No. ML070550060).

4. GE Nuclear Energy, NEDC-33006P, "Licensing Topical Report, General Electric Boiling Water Reactor Maximum Extended Load Line Limit Analysis Plus," Revision 1, dated August 2002. (Proprietary information. Not publicly available.)

5. GE Nuclear Energy, NEDO-32601A, "Methodology and Uncertainties for Safety Limit MCPR Evaluations," Revision 0, dated August 1999 (ADAMS Accession No. ML14093A216).

6. Akstulewicz, Frank, U.S. Nuclear Regulatory Commission, letter to Mr. Glen A. Watford, General Electric Company, "Acceptance for Referencing of Licensing Topical Reports NEDC-32601P, Methodology and Uncertainties for Safety Limit MCPR Evaluations; NEDC-32694P, Power Distribution Uncertainties for Safety Limit MCPR Evaluation; and Amendment 25 to NEDE-24011-P-A on Cycle-Specific Safety Limit MCPR (TAC Nos. M97490, M99069 and M97491) dated March 11, 1999 (ADAMS Accession No. ML993140059).

7. Global Nuclear Fuel, Licensing Topical Report NEDE-24011-P-A, Revision 20, "General Electric Standard Application for Reactor Fuel," December 2013. (Proprietary information. Not publicly available.)

8. GE Nuclear Energy, NEDO-32505-A, "R-Factor Calculation Method for GE11, GE12, and GE13 Fuel," Revision 1, dated July 1999 (ADAMS Accession No. ML060520636).

9. Harrison, James F., GE Hitachi Nuclear Energy, letter to U.S. Nuclear Regulatory Commission, "Accepted Versions of NEDC-33173P, Revision 2 and Supplement 2, Parts 1-3, "Analysis of Gamma Scan Data and Removal of Safety Limit Critical Power Ration (SLMCPR) Margin" (TAC No. ME1891)," dated April 20, 2012 (ADAMS Accession No. ML12115A207).

10. Watford, Glen A., Global Nuclear Fuel, letter to U.S. Nuclear Regulatory Commission, "Confirmation of 10x10 Fuel Design Applicability to Improved SLMCPR, Power Distribution and R-Factor Methodologies," dated September 24, 2001 (ADAMS Accession No. ML012710272).

11. Global Nuclear Fuel, NEDO-31152, "Global Nuclear Fuels Fuel Bundle Designs," Revision 9, dated May 2007 (ADAMS Accession No. ML071510287).

12. Wang, Alan, U.S. Nuclear Regulatory Commission, e-mail to Scarbrough, Richard A., and Nadeau, James, Energy Operations, Inc., "Request for Additional Information (RAI) Regarding [Amendment] Request to Revise Technical Specification 2.1.1.2 (TAC No. MF5304)," dated March 12, 2015 (ADAMS Accession No. ML15072A139).

13. Post, J.S. GE Nuclear Energy, letter to U.S. Nuclear Regulatory Commission, "Part 21 Reportable Condition and 60-Day Interim Report Notification: Non-Conservative SLMCPR," August 24, 2004 (ADAMS Accession No. ML042720293).

14. Ford, B. S., Entergy Operations, Inc., letter to U.S. Nuclear Regulatory Commission, "Maximum Extended Load Line Limit Analysis Plus (MELLLA+) License Amendment Request, Grand Gulf Nuclear Station, Unit 1, Docket No. 50-416, License No. NPF-29," dated September 25, 2013 (ADAMS Accession No. ML13269A140).

15. GE-Hitachi Nuclear Energy, "General Electric Boiling Water Reactor Maximum Extended Load Line Limit Analysis Plus," NEDC-33006P-A, Revision 3, dated June 2009 (ADAMS Accession No. ML091800530).

Principal Contributor: F. Forsaty

Date: August 18, 2015

The NRC had determined that the related safety evaluation (SE) contains proprietary information pursuant to Title 10 of the *Code of Federal Regulations*, Section 2.390, "Public inspections, exemptions, requests for withholding." Accordingly, the NRC staff has also prepared a non-proprietary version of the SE, which is provided in Enclosure 3. The proprietary version of the SE is provided in Enclosure 2. The Notice of Issuance will be included in the Commission's next biweekly *Federal Register* notice.

Sincerely,

/RA/

Alan B. Wang, Project Manager
Plant Licensing IV-2 and Decommissioning
Transition Branch
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-416

Enclosures:
1. Amendment No. 203 to NPF-29
2. Safety Evaluation (proprietary)
3. Safety Evaluation (non-proprietary)

cc w/encls 1 and 3: Distribution via Listserv

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RidsNrrLAPBlechman Resource

ADAMS Accession Nos. Proprietary ML15203A071, Nonproprietary ML15229A213 ***via memorandum**

OFFICE	NRR/DORL/LPL4-2/PM	NRR/DORL/LPL4-2/LA	NRR/DSS/STSB/BC	NRR/DSS/SXRB/BC*
NAME	AWang	PBlechman	REliott	CJackson
DATE	8/4/15	8/4/15	7/31/15	7/13/2015
OFFICE	OGC - NLO	NRR/DORL/LPL4-2/BC	NRR/DORL/LPL4-2/PM	
NAME	CKanatas	MKhanna	AWang	
DATE	8/12/15	8/13/15	8/18/15	

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