

June 5, 2003

Mr. John L. Skolds, Chairman  
and Chief Executive Officer  
AmerGen Energy Company, LLC  
4300 Winfield Road  
Warrenville, IL 60555

SUBJECT: OYSTER CREEK NUCLEAR GENERATING STATION - ISSUANCE OF  
AMENDMENT RE: SAFETY LIMIT MINIMUM CRITICAL POWER RATIO  
(SLMCPR) FOR FUEL CYCLE 19 (TAC NO. MB6959)

Dear Mr. Skolds:

The Commission has issued the enclosed Amendment No. 238 to Facility Operating License No. DPR-16 for the Oyster Creek Nuclear Generating Station. The amendment consists of changes to the Technical Specifications (TSs) in response to your application transmitted by letter dated December 16, 2002, as supplemented by letter dated April 1, 2003.

The amendment revises the TSs, changing the SLMCPR in Specification 2.1.A from 1.11 to 1.09 for both four- or five-recirculation-loop operation, and from 1.12 to 1.10 for three-recirculation-loop operation. It also added a paragraph to explain that the lower SLMCPR values are due primarily to an improved treatment of the power distribution uncertainty.

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

Sincerely,

/RA/

Peter S. Tam, Senior Project Manager, Section 1  
Project Directorate I  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket No. 50-219

Enclosures: 1. Amendment No. 238 to DPR-16  
2. Safety Evaluation

cc w/encls: See next page

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\*SE transmitted by memo on the date indicated. \*\*GVissing concurred for RLaufer.

## Oyster Creek Nuclear Generating Station

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AMERGEN ENERGY COMPANY, LLC

DOCKET NO. 50-219

OYSTER CREEK NUCLEAR GENERATING STATION

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 238  
License No. DPR-16

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by AmerGen Energy Company, LLC (the licensee), dated December 16, 2002, as supplemented by letter dated April 1, 2003, 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. DPR-16 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 238, are hereby incorporated in the license. AmerGen Energy Company, LLC, shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of issuance and shall be implemented within 30 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

**\RA by G. Vissing for\**

Richard J. Laufer, Chief, Section 1  
Project Directorate I  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical  
Specifications

Date of Issuance: June 5, 2003

ATTACHMENT TO LICENSE AMENDMENT NO. 238

FACILITY OPERATING LICENSE NO. DPR-16

DOCKET NO. 50-219

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

Remove

2.1-1  
2.1-2  
2.1-3

Insert

2.1-1  
2.1-2  
2.1-3

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 238

TO FACILITY OPERATING LICENSE NO. DPR-16

AMERGEN ENERGY COMPANY, LCC

OYSTER CREEK NUCLEAR GENERATING STATION (OCNGS)

DOCKET NO. 50-219

1.0 INTRODUCTION

By letter dated December 16, 2002, as supplemented by letter dated April 1, 2003, AmerGen Energy Company, LLC (AmerGen, the licensee) proposed an amendment to change the Technical Specifications (TSs) for OCNGS. The proposed changes include revising the previously approved (i.e., Amendment No. 233, dated September 26, 2002) safety limit minimum critical power ratio (SLMCPR) values in TS Section 2.1.A based on a newly revised analysis by Global Nuclear Fuel - Americas, LLC (GNF-A) for OCNGS Cycle 19 operation. The OCNGS Cycle 19 core has 560 fuel assemblies, of which there are 190 fresh GE11 fuel bundles, 6 fresh GE9B fuel bundles, 184 once-burned GE9B fuel bundles, and 180 twice burned GE9B fuel bundles.

2.0 REGULATORY EVALUATION

Title 10 of the *Code of Federal Regulations*, Part 50 (10 CFR Part 50), Appendix A, General Design Criterion (GDC)-10 requires that the reactor core and associated coolant, control, and protective system be designed with appropriate margin to assure that specified acceptable fuel design limits are not exceeded during steady-state operation, normal operational transients, and anticipated operational occurrences. Safety limits are required to be included in the TSs by 10 CFR 50.36. The SLMCPR is developed to assure compliance with GDC-10 for fuel cladding integrity. The SLMCPR ensures sufficient conservatism in the operating MCPR limit such that, in the event of an anticipated operational occurrence, at least 99.9% of the fuel rods in the core are expected to avoid boiling transition considering the power distribution within the core and all uncertainties.

The NRC staff recognizes that OCNGS was constructed before the General Design Criteria of 10 CFR Part 50 were promulgated. However, as a result of its evaluation to convert the OCNGS Provisional Operating License DPR-16 to the full-term Operating License DPR-16, the NRC staff evaluated the unit's compliance with GDC-10 and found that OCNGS is in compliance (see Section 15.1 of NUREG-1382, Safety Evaluation Report supporting the license conversion). Description of compliance with GDC-10 may also be found in the OCNGS Updated Final Safety Analysis Report, Section 3.1.6.



### 3.0 TECHNICAL EVALUATION

The OCNGS Cycle 19 core has 560 fuel assemblies, of which there are 190 fresh GE11 fuel bundles, 6 fresh GE9B fuel bundles, 184 once-burned GE9B fuel bundles, and 180 twice burned GE9B fuel bundles. The licensee requested an amendment to change the OCNGS TSs. The Nuclear Regulatory Commission (NRC) staff's evaluation of the proposed amendment follows.

#### 3.1 TSs Section 2.1, "Safety Limit - Fuel Cladding Integrity"

The licensee proposed to change the SLMCPR value in Specification 2.1.A from 1.11 to 1.09 for both four- or five-recirculation-loop operation, and from 1.12 to 1.10 for three-recirculation-loop operation with the reactor vessel steam dome pressure greater than or equal to 800 psia and core flow greater than or equal to 10% of rated core flow.

The licensee described the approved methodologies used to calculate the SLMCPR value for the proposed changes. The revised Cycle 19 SLMCPR analysis was performed by GNF-A using plant- and cycle-specific fuel and core parameters, and NRC-approved methodologies, including NEDC-32505P, Revision 1, "R-Factor Calculation Method for GE11, GE12 and GE13 Fuel"; NEDO-10958-A, "General Electric BWR [Boiling Water Reactor] Thermal Analysis Basis" (GETAB); NEDC-32601P, "Methodology and Uncertainties for Safety Limit MCPR Evaluations"; NEDC-32694P, "Power Distribution Uncertainties for Safety Limit MCPR Evaluations"; and Amendment 25 to NEDE-24011-P-A, "General Electric Standard Application for Reload Fuel" (GESTAR II). The revised Cycle 19 SLMCPR analysis used the specific reduced bundle power uncertainty rather than the generic GETAB bundle power uncertainty.

The NRC staff has reviewed: (1) the licensee's justification for the change to the SLMCPR from 1.12 to 1.10 for three-recirculation-loop operation, and from 1.11 to 1.09 for four- or five-recirculation-loop operation using the approach delineated in Amendment 25 to GESTAR II; and (2) the impact due to the difference between GETAB generic bundle power uncertainty and the specific reduced bundle power uncertainty on the SLMCPR calculation.

The NRC staff reviewed the detailed summary results of the analysis for OCNGS Cycle 19 operation in Tables 1 and 2 of Enclosure 3 of the application, and Items 1 and 2 of Enclosure 1 in the April 1, 2003 supplement, to determine whether the proposed changes were justified. Based on the results of the review, the NRC staff finds that the SLMCPR revised analysis for OCNGS Cycle 19 operation used the plant- and cycle-specific parameters in conjunction with the approved method, and the results, therefore, are acceptable. The revised analysis using the approved revised methodology in NEDC-32694P-A yields lower SLMCPR values primarily due to an improved treatment of the power distribution uncertainty that reduces the conservatism of the GETAB method of power allocation. The proposed Cycle 19 SLMCPR values will ensure that 99.9% of the fuel rods in the core will not experience boiling transition, which satisfies the requirements of GDC-10 regarding acceptable fuel design limits. The NRC staff concludes that the justification for analyzing and determining the SLMCPR value of 1.10 for three-recirculation-loop operation and 1.09 for both four- or five-recirculation-loop operation is acceptable for OCNGS Cycle 19 since approved methodologies are used.

### 3.2 Bases of Specification 2.1 (Pages 2.1-2 and 2.1-3)

The licensee proposed revision of the Specification 2.1 Bases by: (1) adding a paragraph to explain that the revised analysis results in lower SLMCPR values due primarily to an improved treatment of the power distribution uncertainty, and (2) to add two additional approved licensing topical reports, NEDC-32694P-A and NEDC-32601P-A, to support the conclusion of item (1).

Change (1) reflects the technical changes already evaluated above. Change (2) is purely editorial because the two licensing topical reports are already listed as references by an existing reference on this page, NEDE-24011-P-A. Accordingly, the NRC staff does not object to the changes to the Specification 2.1 Bases.

### 3.3 Summary of Technical Review

Based on its review, the NRC staff concludes that AmerGen's application to revise the values of the SLMCPR contained in Section 2.1 acceptable for OCNGS Cycle 19 operation because the licensee used NRC-approved methodologies.

## 5.0 STATE CONSULTATION

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

## 6.0 ENVIRONMENTAL CONSIDERATION

This amendment changes a requirement with respect to 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 (68 FR 2799). 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.

## 7.0 CONCLUSION

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

Principal Contributor: T. Huang

Date: June 5, 2003