

September 5, 2002

Mr. John L. Skolds, President  
and Chief Nuclear Officer  
Exelon Nuclear  
Exelon Generation Company, LLC  
4300 Winfield Road  
Warrenville, IL 60555

SUBJECT: OYSTER CREEK NUCLEAR GENERATING STATION - ISSUANCE OF  
AMENDMENT RE: SOURCE RANGE MONITOR OPERABILITY  
(TAC NO. MB2890)

Dear Mr. Skolds:

The Commission has issued the enclosed Amendment No. 229 to Facility Operating License No. DPR-16 for the Oyster Creek Nuclear Generating Station, in response to your application dated September 10, 2001.

The amendment revised the requirements in Technical Specification Section 3.9, changing the number of operable source range monitors (SRMs) from one SRM nearest the core alteration to two SRM channels, one with its detector located in the core quadrant where core alterations are being performed, and another with its detector located in an adjacent quadrant.

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. 229 to DPR-16  
2. Safety Evaluation

cc w/encls: See next page

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\* Safety Evaluation input of 8/19/02 substantially unchanged

AMERGEN ENERGY COMPANY, LLC

DOCKET NO. 50-219

OYSTER CREEK NUCLEAR GENERATING STATION

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 229  
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 September 10, 2001, 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. 229, 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/*

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: September 5, 2002

ATTACHMENT TO LICENSE AMENDMENT NO. 229

FACILITY OPERATING LICENSE NO. DPR-16

DOCKET NO. 50-219

Replace the following pages of the 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

3.9-1

3.9-2

3.9-3

Insert

3.9-1

3.9-2

3.9-3

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 229 TO FACILITY OPERATING LICENSE NO. DPR-16

AMERGEN ENERGY COMPANY, LLC

OYSTER CREEK NUCLEAR GENERATING STATION

DOCKET NO. 50-219

## 1.0 INTRODUCTION

By application dated September 10, 2001, AmerGen Energy Company, LLC (AmerGen or the licensee) requested to amend the Technical Specifications (TSs) for Oyster Creek Nuclear Generating Station (Oyster Creek). The licensee's proposed amendment would revise the limiting condition for operation (LCO) 3.9.D, under Section 3.9, "Refueling." Specifically, the revision would change the number of operable source range monitors (SRMs) from one SRM nearest where core alteration is taking place to 2 SRM channels, one with its detector located in the core quadrant where core alterations are being performed, and another with its detector located in an adjacent quadrant. The proposed amendment would also change the TSs Bases to reflect the proposed TS changes.

SRMs provide the only on-scale neutron monitoring during refueling, shutdown, and low power operations. There are four SRMs available for core monitoring, with one channel per SRM detector. The SRM detectors are symmetrically located at four radial positions, with each detector 18 inches above the core mid-plane. The SRMs provide indications, alarms, and control rod (CR) blocks during fuel or CR movements, when core reactivity would be changing. Only one SRM channel can be bypassed at a time. The SRMs can initiate high neutron flux scram if the reactor protection system shorting links are removed.

The purpose of the proposed amendment is to provide improved clarity with respect to the implementation of the SRM operability requirements. The current wording requires one SRM nearest to the core alteration to be operable. The SRM nearest to the core alteration is not clearly defined for all cases. Such ambiguity further complicates the process of ensuring that the current operability requirements are met. Therefore, to clearly determine which SRMs must be operable, the proposed requirement specifies that one operable detector shall be located in the core quadrant where core alterations are being performed, and another shall be located in an adjacent quadrant.

## 2.0 REGULATORY EVALUATION

Section 50.36 of Title 10 of the *Code of Federal Regulations* (10 CFR 50.36) provides that the TSs will be derived from the analyses and evaluation included in the safety analysis report, and

amendments thereto, submitted pursuant to 10 CFR 50.34 (which addresses, among other things, contents of the Final Safety Analysis Report (FSAR)). The existing TSs requirements, as well as the proposed amendment, are based, on such analyses and evaluation.

### 3.0 TECHNICAL EVALUATION

Section 3.9 of the TSs and the corresponding surveillance requirements in Section 4.9 were worded to achieve the following objectives: (1) two activities that change core reactivity should not be performed simultaneously (i.e., CR withdrawals and fuel movement), (2) the design-basis refueling equipment interlocks are operable to prevent reactivity-initiated events, (3) the core is adequately monitored during changes in core reactivity, and (4) the shutdown margin is maintained at all times. In general, reactivity in boiling-water reactors (BWRs) during refueling can be changed by either CR withdrawals or by fuel movements.

Safe reactivity management during refueling restricts parallel activities that affect core reactivity. Instead of analyzing the possible reactivity-initiated events and their radiological consequence, General Electric designed refueling interlocks to prevent inadvertent reactivity-initiated events. With the reactor mode switch in the refuel position, the refueling interlocks receive and process signals from the refueling equipment to block CR movement and operation of the fuel-loading equipment. Since these design-basis refueling interlocks are assumed to function and prevent reactivity-initiated events, their safety functions need to be ensured, and this is accomplished by specifying the LCOs in Section 3.9. The LCO also requires SRM operability to ensure that core reactivity changes are adequately monitored.

Currently LCO 3.9.D states, "During core alterations the source range monitor nearest the alteration shall be operable." The corresponding wording in the Bases states "Specification 3.9.D assures that the neutron flux is monitored as close as possible to the location where fuel or controls are being moved. Specifications 3.9.E and F require the operability of at least two source range monitors when control rods are to be removed." The licensee proposed replacing the SRM operability requirements in LCO 3.9.D with

During CORE ALTERATIONS at least two (2) source range monitor (SRM) channels shall be OPERABLE and inserted to the normal operating level. One of the OPERABLE SRM channel detectors shall be located in the core quadrant where CORE ALTERATIONS are being performed, and another shall be located in an adjacent quadrant.

The licensee states that the proposed changes to LCO 3.9.D provide (1) redundant monitoring capability, (2) consistency with the requirements in LCOs 3.9.E and F, and (3) clarity in implementing the requirements. LCOs 3.9.E and F specify the restrictions and controls for conducting single and multiple CR or CR drive (CRD) removal and maintenance. LCOs 3.9.E.2 and F.2 require two SRM channels to be operable and fully inserted, with SRM in the quadrant where CR is being removed and one in the adjacent quadrant. The licensee states that fuel movement and CR removal affect core reactivity and the proposed change would make LCO 3.9.D consistent with LCOs 3.9.E and F. The licensee states that the current requirement that an operable SRM be located nearest to where the core alteration is in progress is not clearly defined and is difficult to follow. In contrast, the core is divided into clearly defined quadrants in

order to determine the SRM required to be operable during CR or CRD removal (based on LCOs 3.9.E and F). The licensee proposed to use the same core quadrant configuration as in LCOs 3.9.E.2 and F.2 for LCO 3.9.D in defining the SRMs required to be operable.

Requiring two operable SRM channels - one detector in the quadrant where core alteration is being performed and another in adjacent quadrant - is consistent with the SRM operability requirements in most BWR refueling TSs, including the Standard Technical Specification. The proposed change will maintain the same number of SRMs monitoring the core. The quadrant where core reactivity is changing will be monitored, with the adjacent quadrant's operable SRM providing redundant neutron monitoring. Therefore, the proposed change will provide equivalent neutron monitoring protection. It is important to note that the Section 3.9.D only specifies the minimum number of SRMs required to be operable to monitor core reactivity changes. However, it is desirable that all four SRMs be operable to monitor any fueled quadrant, even if core alterations or reactivity changes are not taking place. Since the proposed change will provide adequate and redundant neutron monitoring capability, and the refueling interlocks will be operable to preclude fuel loading and CR withdrawal errors, the NRC staff finds the proposed change acceptable. The NRC staff notes that Section 3.9 uses "SRM detector" and "SRM channel" synonymously. Since there is one SRM channel per detector, this synonymous use of wording is acceptable.

The licensee proposed to also revise the TS Bases on Pages 3.9-2 and 3.9-3. In accordance with 10 CFR 50.36(a), the TS Bases are not part of the TS. The NRC staff reviewed the proposed changes and found them to be consistent with and supportive of the proposed changes to the TS.

#### 4.0 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.

#### 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 (66 FR 59501). 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) 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.

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Date: September 5, 2002

Oyster Creek Nuclear Generating Station

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