

November 22, 2004

Mr. Christopher M. Crane
President and Chief Executive Officer
AmerGen Energy Company, LLC
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: THREE MILE ISLAND NUCLEAR STATION, UNIT 1, REGARDING ISSUANCE
OF AMENDMENT ELIMINATING REQUIREMENTS FOR POST-ACCIDENT
SAMPLING SYSTEM (TAC NO. MC2760)

Dear Mr. Crane:

The Commission has issued the enclosed Amendment No. 253 to Facility Operating License No. DPR-50 for the Three Mile Island Nuclear Station, Unit 1 (TMI-1), in response to your application dated April 23, 2004.

The amendment deletes Technical Specification Section 6.16, "Post-Accident Sampling Programs NUREG 0737 (II.B.3, II-F.1.2)," and the related requirements to maintain a Post-Accident Sampling System.

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/

Timothy G. Colburn, Senior Project Manager, Section 1
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-289

Enclosures: 1. Amendment No. 253 to DPR-50
2. Safety Evaluation

cc w/encls: See next page

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DATE	8/5/2004	8/25/04	8/27/04	9/19/04	11/12/04

OFFICIAL RECORD COPY

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AMERGEN ENERGY COMPANY, LLC

DOCKET NO. 50-289

THREE MILE ISLAND NUCLEAR STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 253
License No. DPR-50

1. The Nuclear Regulatory Commission (the Commission or NRC) has found that:
 - A. The application for amendment by AmerGen Energy Company, LLC (the licensee), dated April 23, 2004, 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-50 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 253, are hereby incorporated in the license. The AmerGen Energy Company, LLC, shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 180 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: November 22, 2004

ATTACHMENT TO LICENSE AMENDMENT NO. 253

FACILITY OPERATING LICENSE NO. DPR-50

DOCKET NO. 50-289

Replace the following pages of 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.

Remove

-v-
6-24

Insert

-v-
6-24

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 253 TO FACILITY OPERATING LICENSE NO. DPR-50
AMERGEN ENERGY COMPANY, LLC
THREE MILE ISLAND NUCLEAR STATION, UNIT 1
DOCKET NO. 50-289

1.0 INTRODUCTION

By application dated April 23, 2004, AmerGen Energy Company, LLC (the licensee), requested changes to the Technical Specifications (TSs) for Three Mile Island Nuclear Station, Unit 1 (TMI-1) (Agencywide Documents Access and Management System (ADAMS) Accession No. ML041210215). The proposed change would delete TS Section 6.16, "Post-Accident Sampling Programs NUREG 0737 (II.B.3, II-F.1.2)," and the related requirements to maintain a Post-Accident Sampling System (PASS).

In the aftermath of the accident at TMI, Unit 2, the Nuclear Regulatory Commission (NRC) imposed requirements on licensees for commercial nuclear power plants to install and maintain the capability to obtain and analyze post-accident samples of the reactor coolant and containment atmosphere. The desired capabilities of the PASS were described in NUREG-0737, "Clarification of TMI Action Plan Requirements." The NRC issued orders to licensees with plants operating at the time of the TMI accident to confirm the installation of PASS capabilities (generally as they had been described in NUREG-0737). A requirement for PASS and related administrative controls was added to the TSs of the operating plants and was included in the initial TSs for plants licensed during the 1980s and 1990s. Additional expectations regarding PASS capabilities were included in Regulatory Guide (RG) 1.97, "Instrumentation for Light-Water-Cooled Nuclear Power Plants To Assess Plant and Environs Conditions During and Following an Accident."

Significant improvements have been achieved since the TMI accident in the areas of understanding risks associated with nuclear plant operations and developing better strategies for managing the response to potentially severe accidents at nuclear plants. Recent insights about plant risks and alternate severe accident assessment tools have led the NRC staff to conclude that some TMI Action Plan items can be revised without reducing the ability of licensees to respond to severe accidents. The NRC's efforts to oversee the risks associated with nuclear technology more effectively and to eliminate undue regulatory costs to licensees and the public have prompted the NRC to consider eliminating the requirements for PASS in the TSs and other parts of the licensing bases of operating reactors.

The NRC staff has completed its review of the topical report submitted by the Babcock & Wilcox Owners Group (BWOG) that proposed the elimination of PASS. The justifications for the proposed elimination of PASS requirements center on evaluations of the various radiological and chemical sampling and their potential usefulness in responding to a severe reactor accident

or making decisions regarding actions to protect the public from possible releases of radioactive materials. As explained in more detail in the NRC staff's safety evaluation (SE) for the topical report, the NRC staff has reviewed the available sources of information for use by decision makers in developing protective action recommendations and assessing core damage. Based on this review, the NRC staff found that the information provided by PASS is either unnecessary or is effectively provided by other indications of process parameters or measurement of radiation levels. The NRC staff agrees, therefore, with the BWOOG that licensees can remove the TS requirements for PASS, revise (as necessary) other elements of the licensing bases, and pursue possible design changes to alter or remove existing PASS equipment.

2.0 REGULATORY EVALUATION

In its letter dated June 25, 2001, the BWOOG submitted for the NRC staff's review, topical report BAW-2387, "Justification for the Elimination of the Post-Accident Sampling System (PASS) from the Licensing Basis of Babcock and Wilcox-Designed Plants." The NRC staff's SE for the BWOOG topical report is dated November 14, 2002 (ADAMS Accession Number ML022560119). The BWOOG proposed elimination of the PASS requirements from the standard technical specifications (STs) by submitting change traveler TSTF-442.

The ways in which the requirements and recommendations for PASS were incorporated into the licensing bases of commercial nuclear power plants varied as a function of when plants were licensed. Plants that were operating at the time of the TMI accident are likely to have been the subject of confirmatory orders that imposed the PASS functions described in NUREG-0737 as obligations. The issuance of plant-specific license amendments to adopt this proposed change, which would remove PASS and related administrative controls from the TSs, would also supersede the PASS-specific requirements imposed by post-TMI confirmatory orders.

The NRC staff prepared this model SE relating to the elimination of requirements on post-accident sampling for B&W plants and solicited public comments in the *Federal Register* on March 3, 2003 (68 FR 10052) in accordance with the consolidated line-item improvement process (CLIIP). The use of the CLIIP in this matter is intended to help the NRC to efficiently process amendment requests that propose to remove the PASS requirements from the TSs. Licensees of nuclear power reactors to which this model applies were informed by a notice in the *Federal Register* on May 13, 2003 (68 FR 25664) that they could request license amendments conforming to the model and, in such requests, should confirm the applicability of the SE to their reactors and provide the requested plant-specific verifications and commitments.

3.0 TECHNICAL EVALUATION

The technical evaluations for the elimination of PASS sampling requirements are provided in the SE dated November 14, 2002, for BWOOG topical report BAW-2387. As described in its SE for the topical report, the NRC staff finds that the post-accident sampling requirements for the following may be eliminated for B&W plants:

1. Reactor coolant dissolved gases.
2. Reactor coolant hydrogen.
3. Reactor coolant oxygen.
4. Reactor coolant chlorides.
5. Reactor coolant pH.
6. Reactor coolant boron.
7. Reactor coolant conductivity.
8. Radionuclides in the reactor coolant.
9. Containment atmosphere hydrogen.
10. Containment atmosphere oxygen.
11. Radionuclides in the containment atmosphere.
12. Radionuclides in the containment sump.
13. Containment sump pH.
14. Chlorides in the containment sump.
15. Boron in the containment sump.

PASS sampling of the above 15 parameters is specified in NUREG-0737 and RG 1.97. The sampling of the parameters are either not required to manage an accident and recover plant conditions, or not necessary due to redundancy in sampling capabilities. Based upon the detailed justifications provided in topical report BAW-2387 and its associated SE of November 14, 2002, the NRC staff concludes that the proposal to eliminate PASS sampling of the above parameters is acceptable.

The NRC staff concludes that sampling of radionuclides is not required to support emergency response decision making during the initial phases of an accident because the information provided by PASS is either unnecessary or is effectively provided by other indications of process parameters or measurement of radiation levels. Therefore, it is not necessary to have dedicated equipment to obtain this sample in a prompt manner.

The NRC staff does, however, believe that there could be significant benefits to having information about the radioisotopes that exist post-accident, in order to address public concerns and plan for long-term recovery operations. As stated in the SE for the topical report, the NRC staff has found that licensees could satisfy this function by developing contingency plans to describe existing sampling capabilities and what actions (e.g., assembling temporary shielding) may be necessary to obtain and analyze highly radioactive samples from the reactor coolant system (RCS), containment sump, and containment atmosphere. The use of the contingency plans for obtaining samples would depend on the plant conditions and the need for information by the decision makers responsible for responding to the accident (see section 4.0 below).

In addition, the NRC staff considers radioisotope sampling information to be useful in classifying certain types of events (such as a reactivity excursion or mechanical damage) that could cause fuel damage without having an indication of a loss of reactor coolant inventory. However, the NRC staff agrees with the topical report's contentions that other indicators of failed fuel, such as radiation monitors, can be correlated to the degree of failed fuel.

In lieu of the information that would have been obtained from PASS, the NRC staff believes that licensees should maintain or develop the capability to monitor radioactive iodines that have

been released to offsite environs. This information would be useful for decision makers trying to assess a release of and limit the public's exposure to radioactive materials.

The NRC staff believes that the changes related to the elimination of PASS that are described in the topical report, related SE, and this proposed change to the TSs are unlikely to result in a decrease in the effectiveness of a licensee's emergency plan. Each licensee, however, must evaluate possible changes to its emergency plan in accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.54(q) to determine if the change decreases the effectiveness of its site-specific plan. Evaluations and reporting of changes to emergency plans should be performed in accordance with applicable regulations and procedures.

The NRC staff notes that containment hydrogen concentration monitors are required by 10 CFR 50.44 and are relied upon to meet the data reporting requirements of 10 CFR Part 50, Appendix E, Section VI.2.a.(ii)(3). The NRC staff concludes that these hydrogen monitors provide an adequate capability for monitoring containment hydrogen concentration during the early phases of an accident. The NRC staff sees value in maintaining the capability to obtain grab samples for complementing the information from the hydrogen monitors in the long term (i.e., by confirming the indications from the monitors and providing hydrogen measurements for concentrations outside the range of the monitors). The licensee's contingency plan for obtaining highly radioactive samples will include sampling of the containment atmosphere and may, if deemed necessary and practical by the appropriate decision makers, be used to supplement the hydrogen monitors.

4.0 VERIFICATIONS AND COMMITMENTS

As requested by the NRC staff in the notice of availability for this TS improvement, the licensee has addressed the following plant-specific verifications and commitments.

- 4.1 Each licensee should verify that it has, and make a regulatory commitment to maintain (or make a regulatory commitment to develop and maintain), contingency plans for obtaining and analyzing highly radioactive samples of reactor coolant, suppression pool, and containment atmosphere.

The licensee has made a regulatory commitment to develop and maintain contingency plans for obtaining and analyzing highly radioactive samples from the RCS, containment sump, and containment atmosphere. The contingency plans will be contained within appropriate plant procedures. The regulatory commitment will be implemented with the implementation of the license amendment.

- 4.2 Each licensee should verify that it has, and make a regulatory commitment to maintain (or make a regulatory commitment to develop and maintain), a capability for classifying fuel damage events at the Alert level threshold (typically this is 300 F Ci/ml dose equivalent iodine). This capability may utilize the normal sampling system and/or correlations of radiation readings to radioisotope concentrations in the reactor coolant.

The licensee has made a regulatory commitment to develop and maintain the capability for classifying fuel damage events at the Alert level threshold. The licensee has committed to

maintain the capability for the Alert classification within the plant emergency plan and emergency plan implementing procedures. The regulatory commitment will be implemented with the implementation of the license amendment.

- 4.3 Each licensee should verify that it has, and make a regulatory commitment to maintain (or make a regulatory commitment to develop and maintain), the offsite capability to monitor radioactive iodines.

The licensee has verified that it has the ability to assess radioactive iodines released to offsite environs. The capability will be maintained within the plant emergency plan and emergency plan implementing procedures. The licensee has implemented this commitment.

The NRC staff finds that reasonable controls for the implementation of, and for subsequent evaluation of, proposed changes pertaining to the above regulatory commitments are provided by the licensee's administrative processes, including its commitment management program. Should the licensee choose to incorporate a regulatory commitment into the emergency plan, final safety analysis report, or other document with established regulatory controls, the associated regulations would define the appropriate change control and reporting requirements. The NRC staff has determined that the commitments do not warrant the creation of regulatory requirements, which would require prior NRC approval of subsequent changes. The NRC staff has agreed that NEI 99-04, Revision 0, "Guidelines for Managing NRC Commitment Changes," provides reasonable guidance for the control of regulatory commitments made to the NRC staff. (See Regulatory Issue Summary 2000-17, "Managing Regulatory Commitments Made by Power Reactor Licensees to the NRC Staff," dated September 21, 2000 [ADAMS Accession Number ML003741774].) The commitments should be controlled in accordance with the industry guidance or comparable criteria employed by a specific licensee. The NRC staff may choose to verify the implementation and maintenance of these commitments in a future inspection or audit.

5.0 STATE CONSULTATION

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

6.0 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 (69 FR 26187). 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 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.

Principal Contributor: W. Reckley

Date: November 22, 2004