Template - NRR-058

March 6, 2000

Mr. Samuel L. Newton
Vice President, Operations
Vermont Yankee Nuclear Power Corporation
185 Old Ferry Road
Brattleboro, VT 05301

SUBJECT: VERMONT YANKEE NUCLEAR POWER STATION - ISSUANCE OF AMENDMENT RE: TESTING OF AUGMENTED OFF-GAS INSTRUMENTATION (TAC NO. MA8009)

Dear Mr. Newton:

The Commission has issued the enclosed Amendment No. 184 to Facility Operating License DPR-28 for the Vermont Yankee Nuclear Power Station, in response to your application dated January 20, 2000.

The amendment redefines the functional testing criteria for the noble gas activity monitor instrumentation in the Augmented Off-Gas (AOG) 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/
Richard P. Croteau, Project Manager, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-271

Enclosures: 1. Amendment No. 184 to License No. DPR-28
2. Safety Evaluation

cc w/encls: See next page

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

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

VERMONT YANKEE NUCLEAR POWER CORPORATION

DOCKET NO. 50-271

VERMONT YANKEE NUCLEAR POWER STATION

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 184
License No. DPR-28

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

   A. The application for amendment filed by the Vermont Yankee Nuclear Power Corporation (the licensee) dated January 20, 2000, 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 3.B of Facility Operating License No. DPR-28 is hereby amended to read as follows:

   (B) Technical Specifications

   The Technical Specifications contained in Appendix A, as revised through Amendment No. 184 , are hereby incorporated in the license. The licensee 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 30 days.

FOR THE NUCLEAR REGULATORY COMMISSION

James W. Clifford

James W. Clifford, Chief, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: March 6, 2000

ATTACHMENT TO LICENSE AMENDMENT NO. 184

FACILITY OPERATING LICENSE NO. DPR-28

DOCKET NO. 50-271

Replace the following page of the Appendix A Technical Specifications with the attached revised page. The revised page is identified by amendment number and contains marginal lines indicating the area of change.

Remove	Insert
206	206

TABLE 4.9.2 NOTATION

(1) The Instrument Functional Test shall demonstrate that the instrument will provide an isolation signal to the system logic under the following conditions:

(a) Instrument indicates measured levels above the alarm setpoint.

(b) Circuit failure.

(c) Instrument indicates a downscale failure.

(d) Instrument controls not set in operate mode.

(2) The Instrument Functional Test shall also demonstrate that Control Room alarm annunciation occurs when any of the following conditions exist:

(a) Instrument indicates measured levels above the alarm setpoint.

(b) Circuit failure.

(c) Instrument indicates a downscale failure.

(d) Instrument controls are not set in operate mode.

(3) The Instrument Calibration for radioactivity measurement instrumentation shall include the use of a known (traceable to National Institute for Standards and Technology) radioactive source positioned in a reproducible geometry with respect to the sensor. These standards should permit calibrating the system over its normal operating range of rate capabilities.

(4) The Instrument Calibration shall include the use of standard gas samples (high range and low range) containing suitable concentrations, hydrogen balance air, for the detection range of interest per Specification 3.8.J.1.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 184 TO FACILITY OPERATING LICENSE NO. DPR-28

VERMONT YANKEE NUCLEAR POWER CORPORATION

VERMONT YANKEE NUCLEAR POWER STATION

DOCKET NO. 50-271

1.0 INTRODUCTION

By letter dated January 20, 2000, the Vermont Yankee Nuclear Power Corporation (the licensee) submitted a request to amend the Vermont Yankee Nuclear Power Station (VY) Technical Specifications (TSs). The proposed amendment would redefine the functional testing criteria for the noble gas activity monitor instrumentation in the Augmented Off-Gas (AOG) system.

The current TS requires a quarterly "instrument functional test" of the AOG noble gas activity monitor including "automatic isolation" of the pathway which can be interpreted to mean that the automatic isolation initiated by this instrumentation includes closure of the isolation valve. Closure of this valve during plant operation creates the potential for a plant transient. Therefore, the licensee proposed to make the testing consistent with the definition of "instrument functional test" in the definition section of the existing TS. With the proposed change, closure of the valve for the quarterly instrument functional test would not be necessary.

2.0 EVALUATION

The steam jet air ejectors (SJAE) remove gases and vapors from the main condensers to help maintain condenser vacuum. The non-condensible gases are discharged to the AOG system. The basic function of the AOG system is to reduce the SJAE radioactive gaseous release rates to the atmosphere to a level that is as low as reasonably achievable. The AOG system consists of a dual hydrogen dilution and recombiner subsystem, a dual moisture removal/dryer subsystem, a single charcoal adsorber subsystem, and dual vacuum pumps prior to discharge to the plant stack. Radioactive releases from the AOG system in a boiling water reactor consist of fission product noble gases, activation product gases, halogens, and particulate daughter products from the noble gases. The release of significant quantities of gaseous and particulate radioactive material is prevented by automatic isolation of the AOG system from the stack in the event of high activity levels.

The current Note 1 of TS Table 4.9.2 applies to the AOG Noble Gas Activity Monitor and states:

> The Instrument Functional Test shall also demonstrate that automatic isolation of this pathway and the Control Room alarm annunciation occurs if any of the following conditions exist:

The licensee proposed rewording this section of Note 1 to read:

> The Instrument Functional Test shall demonstrate that the instrument will provide an isolation signal to the system logic under the following conditions:

The licensee stated that the proposed change will make Note 1 consistent with TS 1.0 G "Instrument Functional Test" which states:

> G. Instrument Functional Test - An instrument functional test shall be:
>
> 1. Analog channels - the injection of a signal into the channel as close to the sensor as practicable to verify operability including alarm and/or trip functions.
>
> 2. Bistable channels - the injection of a signal into the sensor to verify the operability including alarms and/or trip functions.

The licensee stated that the objective of the *instrument* functional test, unlike the *system* functional test described in TS 1.0 Definition H, is to demonstrate alarm and/or trip function operability through insertion of an initiation signal into the applicable channel without requiring the actuated equipment to complete its designed action. The system functional test described in TS 1.0 Definition H, requires that the initiated action be taken to completion (valve closure in this case) where possible. This change is required to bring the instrument functional testing criteria for this AOG instrumentation into line with the standard practice as described in TS 1.0 Definition G.

The licensee also stated that automatic closure of the isolation valve upon receipt of an isolation signal from each of the instrument channels is demonstrated during the AOG Trip System Logic Test performed once each operating cycle (during refueling outages) in accordance with TS Table 4.2.4. This is consistent with TS 1.0 Definition H, which states, in part: "Where possible, action will go to completion, i.e., pumps will be started and valves opened."

The staff has reviewed the proposed change and considers that the change is acceptable because quarterly testing of the AOG instrument to verify that it provides an isolation signal to the system logic without actual valve operation, combined with system logic testing per TS Table 4.2.4 once per operating cycle (during refueling) including verification that the automatic closure of the isolation valve will go to completion, provides adequate assurance that the instrumentation will perform its intended function.

3.0 STATE CONSULTATION

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

4.0 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 changes

surveillance requirements. The NRC staff has determined that the amendment involves no significant increase in 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 (65 FR 4999). 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.

5.0 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: R. Croteau

Date: March 6, 2000