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

VERMONT YANKEE NUCLEAR POWER CORPORATION

DOCKET NO. 50-271

VERMONT YANKEE NUCLEAR POWER STATION

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 106
License No. DPR-28

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

   A. The application for amendment by Vermont Yankee Nuclear Power Corporation (the licensee) dated November 30, 1987 as supplemented on January 20, 1988 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. 106, 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 the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Daniel G. McDonald Jr
acting for
Richard H. Wessman, Director
Project Directorate I-3
Division of Reactor Projects I/II

Attachment:
Changes to the Technical Specifications

Date of Issuance: August 9, 1988

ATTACHMENT TO LICENSE AMENDMENT NO. 100

FACILITY OPERATING LICENSE NO. DPR-28

DOCKET NO. 50-271

Replace the following pages of the Appendix A Technical Specifications with the enclosed pages. The revised pages are identified by amendment number and contain vertical lines indicating the areas of change. The corresponding overleaf pages are provided to maintain document completeness.

Remove Pages	Insert Pages
50	50
51	51
52	52
53	53
53a	53a
54	54
55	55
56	56
57	57
58	58
59	59
64	64
67	67

TABLE 4.2.1

Minimum Test and Calibration Frequencies

Emergency Core Cooling Actuation Instrumentation

Core Spray System

Trip Function	Functional Test(8)	Calibration(8)	Instrument Check
High Drywell Pressure	(Note 1)	Once/Operating Cycle	Once Each Day
Low-Low Reactor Vessel Water Level	(Note 1)	Once/Operating Cycle	Once Each Day
Low Reactor Pressure	(Note 1)	Once/Operating Cycle	----
Pump 14-1A, Discharge Press	(Note 1)	Every Three Months	----
Auxiliary Power Monitor	(Note 1)	Every Refueling	Once Each Day
Pump Bus Power Monitor	(Note 1)	None	Once Each Day
High Sparger Pressure	(Note 1)	Every Three Months	----
Trip System Logic	Once/Operating Cycle (Note 2)	Once/Operating Cycle (Note 3)	----

TABLE 4.2.1
(Continued)

Low Pressure Coolant Injection System

Trip Function	Functional Test(8)	Calibration(8)	Instrument Check
Low Reactor Pressure No. 1	(Note 1)	Once/Operating Cycle	----
High Drywell Pressure No. 1	(Note 1)	Once/Operating Cycle	Once Each Day
Low-Low Reactor Vessel Water Level	(Note 1)	Once/Operating Cycle	Once Each Day
Reactor Vessel Shroud Level	(Note 1)	Every Three Months	----
Low Reactor Pressure No. 2	(Note 1)	Every Three Months	----
RHR Pump Discharge Pressure	(Note 1)	Every Three Months	----
High Drywell Pressure No. 2	(Note 1)	Every Three Months	----
Low Reactor Pressure No. 3	(Note 1)	Once/Operating Cycle	----
Auxiliary Power Monitor	(Note 1)	Every Refueling Outage	Once Each Day
Pump Bus Power Monitor	(Note 1)	None	Once Each Day
LPCI Crosstie Monitor	None	None	Once Each Day
Trip System Logic	Once/Operating Cycle (Note 2)	Once/Operating Cycle (Note 3)	----

TABLE 4.2.1
(Continued)

High Pressure Coolant Injection System

Trip Function	Functional Test(8)	Calibration(8)	Instrument Check
Low-Low Reactor Vessel Water Level	(Note 1)	Once/Operating Cycle	Once Each Day
Low Condensate Storage Tank Water Level	(Note 1)	Every Three Months	----
High Drywell Pressure	(Note 1)	Once/Operating Cycle	Once Each Day
Bus Power Monitor	(Note 1)	None	Once Each Day
Trip System Logic	Once/Operating Cycle (Note 2)	Once/Operating Cycle (Note 3)	----

TABLE 4.2.1
(Continued)

Automatic Depressurization System

Trip Function	Functional Test[8]	Calibration[8]	Instrument Check
Low-Low Reactor Vessel Water Level	(Note 1)	Once/Operating Cycle	Once Each Day
High Drywell Pressure	(Note 1)	Once/Operating Cycle	Once Each Day
Bus Power Monitor	(Note 1)	None	Once Each Day
Trip System Logic (Except Solenoids of Valves)	Once/Operating Cycle (Note 2)	Once/Operating Cycle (Note 3)	----

TABLE 4.2.i
(Continued)

Recirculation Pump Trip Actuation System

Trip Function	Functional Test(8)	Calibration(8)	Instrument Check
Low-Low Reactor Vessel Water Level(4)	(Note 1)	Once/Operating Cycle	Once Each Day
High Reactor Pressure(4)	(Note 1)	Once/Operating Cycle	Once Each Day
Trip System Logic	Once/Operating Cycle	Once/Operating Cycle	----

TABLE 4.2.2

Minimum Test and Calibration Frequencies

Primary Containment Isolation Instrumentation

Trip Function	Functional Test(8)	Calibration(8)	Instrument Check
Low-Low Reactor Vessel Water Level	(Note 1)	Once/Operating Cycle	Once Each Day
High Steam Line Area Temperature	(Note 1)	Each Refueling Outage	----
High Steam Line Flow	(Note 1)	Every Three Months	Once Each Day
Low Main Steam Line Pressure	(Note 1)	Every Three Months	----
Low Reactor Vessel Water Level	(Note 1)	Once/Operating Cycle	----
High Main Steam Line Radiation	(Notes 1 and 7)	Each Refueling Outage	Once Each Day
High Drywell Pressure	(Note 1)	Once/Operating Cycle	Once Each Day
Condenser Low Vacuum	(Note 1)	Every Three Months	----
Trip System Logic	Once/Operating Cycle (Note 2)	Once/Operating Cycle (Note 3)	----

TABLE 4.2.2
(Continued)

Minimum Test and Calibration Frequencies

High Pressure Coolant Injection System Isolation Instrumentation

Trip Function	Functional Test(8)	Calibration(8)	Instrument Check
High Reactor Water Level	(Note 1)	Once/Operating Cycle	----
High Steam Line Space Temperature	(Note 1)	Each Refueling Outage	----
High Steam Line D/P (Steam Line Break)	(Note 1)	Every Three Months	----
Low HPCI Steam Supply Pressure	(Note 1)	Every Three Months	----
Main Steam Line Tunnel Temperature	(Note 1)	Each Refueling Outage	----
Bus Power Monitor	(Note 1)	None	Once Each Day
Trip System Logic	Once/Operating Cycle (Note 2)	Once/Operating Cycle (Note 3)	----

TABLE 4.2.2
(Continued)

Minimum Test and Calibration Frequencies

Reactor Core Isolation Cooling System Isolation Instrumentation

Trip Function	Functional Test(8)	Calibration(8)	Instrument Check
Main Steam Line Tunnel Temperature	(Note 1)	Each Refueling Outage	----
High Steam Line Space Temperature	(Note 1)	Each Refueling Outa_	----
High Steam Line D/P Including Time Delay Relays (Steam Line Break)	(Note 1)	Every Thre: Months	----
High Reactor Water Level	(Note 1)	Once/Operating Cycle	----
Low RCIC Steam Supply Pressure	(Note 1)	Every Three Months	----
Bus Power Monitor	(Note 1)	None	Once Each Day
Trip System Logic	Once/Operating Cycle (Note 2)	Once/Operating Cycle (Note 3)	----

TABLE 4.2.3

Minimum Test and Calibration Frequencies

Reactor Building Ventilation and Standby Gas Treatment System Isolation

Trip Function	Functional Test (8)	Calibration (8)	Instrument Check
Low Reactor Vessel Water Level	(Note 1)	Once/Operating Cycle	----
High Drywell Pressure	(Note 1)	Once/Operating Cycle	----
Reactor Building Vent Exhaust Radiation	Monthly	Every Three Months	Once Each Day
Refueling Floor Zone Radiation	Monthly	Every Three Months	Once Each Day During Refueling
Reactor Building Vent Trip System Logic	Once/Operating Cycle (Note 2)	Once/Operating Cycle (Note 3)	----
Standby Gas Treatment Trip System Logic	Once/Operating Cycle (Note 2)	Once/Operating Cycle (Note 3)	----
Logic Bus Power Monitor	(Note 1)	None	Once Each Day

TABLE 4.2.4

Minimum Test and Calibration Frequencies

Off-Gas System Isolation Instrumentation

Trip Function	Functional Test(8)	Calibration(8)	Instrument Check
Augmented Off-Gas Trip System Logic (AOG)	Once/Operating Cycle (Note 2)	Once/Operating Cycle (Note 3)	----

TABLE 4.2.5

Minimum Test and Calibration Frequencies

Control Rod Block Instrumentation

Trip Function	Functional Test	Calibration
Startup Range Monitor		
a. Upscale	Notes 4 and 6	Note 6
b. Detector Not Fully Inserted	Note 6	Note 6
Intermediate Range Monitor		
a. Upscale	Notes 4 and 6	Note 6
b. Downscale	Notes 4 and 6	Note 6
c. Detector Not Fully Inserted	Note 6	Note 6
Average Power Range Monitor		
a. Upscale (Flow Bias)	Notes 1 and 4	Every Three Months
b. Downscale	Notes 1 and 4	Every Three Months
Rod Block Monitor		
a. Upscale (Flow Bias)	Notes 1 and 4	Every Three Months
b. Downscale	Notes 1 and 4	Every Three Months
Trip System Logic	Once/Operating Cycle (Note 2)	Once/Operating Cycle (Note 3)
High Water Level in Scram Discharge Volume	Every Three Months	Refueling Outage

3.2 (Continued)

High radiation monitors in the main steam line tunnel have been provided to detect gross fuel failure resulting from a control rod drop accident. This instrumentation causes closure of Group 1 valves, the only valves required to close for this accident. With the established setting of 3 times normal background and main steam line isolation valve closure, fission product release is limited so that 10CFR100 limits are not exceeded for the control rod drop accident, and 10CFR20 limits are not exceeded for gross fuel failure during reactor operations. With an alarm setting of 1.5 times normal background, the operator is alerted to possible gross fuel failure or abnormal fission product releases from failed fuel due to transient reactor operation.

Pressure instrumentation is provided which trips when main steam line pressure drops below 800 psig. A trip of this instrumentation results in closure of Group 1 isolation valves. In the refuel, shutdown, and startup modes, this trip function is provided when main steam line flow exceeds 40% of rated capacity. This function is provided primarily to provide protection against a pressure regulator malfunction which would cause the control and/or bypass valves to open, resulting in a rapid depressurization and cooldown of the reactor vessel. The 800 psig trip setpoint limits the depressurization such that no excessive vessel thermal stress occurs as a result of a pressure regulator malfunction. This setpoint was selected far enough below normal main steam line pressures to avoid spurious primary containment isolations.

Low condenser vacuum has been added as a trip of the Group 1 isolation valves to prevent release of radioactive gases from the primary coolant through condenser. The setpoint of 12 inches of mercury absolute was selected to provide sufficient margin to assure retention capability in the condenser when gas flow is stopped and sufficient margin below normal operating values.

The HPCI and/or RCIC high flow, steam supply pressure, and temperature instrumentation is provided to detect a break in the HPCI and/or RCIC piping. Tripping of this instrumentation results in actuation of HPCI and/or RCIC isolation valves, i.e., Group 6 valves. A time delay has been incorporated into the RCIC steam flow trip logic to prevent the system from inadvertently isolating due to pressure spikes which may occur on startup. The trip settings are such that core uncovering is prevented and fission product release is within limits.

The instrumentation which initiates ECCS action is arranged in a dual channel system. Permanently installed circuits and equipment may be used to trip instrument channels. In the nonfail safe systems which require energizing the circuitry, tripping an instrument channel may take the form of providing the required relay function by use of permanently installed circuits. This is accomplished in some cases by closing logic circuits with the aid of the permanently installed test jacks or other circuitry which would be installed for this purpose.

4.2 PROTECTIVE INSTRUMENTATION

The Protective Instrumentation Systems covered by this Specification are listed in Table 4.2. Most of these protective systems are composed of two or more independent and redundant subsystems which are combined in a dual-channel arrangement. Each of these subsystems contains an arrangement of electrical relays which operate to initiate the required system protective action.

The relays in a subsystem are actuated by a number of means, including manually-operated switches, process-operated switches (sensors), bistable devices operated by analog sensor signals, timers, limit switches, and other relays. In most cases, final subsystem relay actuation is obtained by satisfying the logic conditions established by a number of these relay contacts in a logic array. When a subsystem is actuated, the final subsystem relay(s) can operate protective equipment, such as valves and pumps, and can perform other protective actions, such as tripping the main turbine generator unit.

With the dual-channel arrangement of these subsystems, the single failure of a ready circuit can be tolerated because the redundant subsystem or system (in the case of high pressure coolant injection) will then initiate the necessary protective action. If a failure in one of these circuits occurs in such a way that an action is taken, the operator is immediately alerted to the failure. If the failure occurs and causes no action, it could then remain undetected, causing a loss of the redundancy in the dual-channel arrangement. Losses in redundancy of this nature are found by periodically testing the relay circuits and contacts in the subsystems to assure that they are operating properly.

It has been the practice in boiling water reactor plants to functionally test protective instrumentation sensors and sensor relays on-line on a monthly frequency. Since logic circuit tests result in the actuation of plant equipment, testing of this nature was done while the plant was shut down for refueling. In this way, the testing of equipment would not jeopardize plant operation.

This Specification is a periodic testing program which is based upon the overall testing of protective instrumentation systems, including logic circuits as well as sensor circuits. Table 4.2 outlines the test, calibration, and logic system functional test schedule for the protective instrumentation systems. The testing of a subsystem includes a functional test of each relay wherever practicable. The testing of each relay includes all circuitry necessary to make the relay operate, and also the proper functioning of the relay contacts. Functional testing of the inaccessible temperature switches associated with the isolation systems is accomplished remotely by application of a heat source to individual switches.

All subsystems are functionally tested, calibrated, and operated in their entirety.