October 30, 2000

Mr. Michael A. Balduzzi
Vice President, Operations
Vermont Yankee Nuclear Power Corporation
185 Old Ferry Road
PO Box 7002
Brattleboro, Vermont 05301

SUBJECT: VERMONT YANKEE - NRC INSPECTION REPORT 50-271/00-07

Dear Mr. Balduzzi:

On September 30, 2000, the NRC completed an inspection at your Vermont Yankee facility. The enclosed report presents the results of that inspection. The preliminary findings were presented to Vermont Yankee management led by Mr. Robert Sojka in an exit meeting on October 19.

This inspection was an examination of activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. Within these areas, the inspection consisted of a selected examination of procedures and representative records, observations of activities, and interviews with personnel. Specifically, this inspection involved six weeks of resident inspection, and a region-based inspection of your licensed operator requalification program. There were no findings.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/NRC/ADAMS/index.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Glenn W. Meyer, Chief
Reactor Projects Branch 3
Division of Reactor Projects

Docket No. 05000271
License No. DPR-28

Enclosure: Inspection Report 50-271/00-07

cc w/encl:
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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No.	50-271
Licensee No.	DPR-28
Report No.	50-271/00-07
Licensee:	Vermont Yankee Nuclear Power Corporation
Facility:	Vermont Yankee Nuclear Power Station
Location:	Vernon, Vermont
Dates:	August 20 - September 30, 2000
Inspectors:	Brian J. McDermott, Senior Resident Inspector Edward C. Knutson, Resident Inspector Richard A. Laura, Senior Resident Inspector, Pilgrim NPS Steven Dennis, Operations Engineer
Approved by:	Glenn W. Meyer, Chief Projects Branch 3 Division of Reactor Projects

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SUMMARY OF FINDINGS

IR 05000271/2000-007 on August 20 - September 30, 2000; Vermont Yankee Nuclear Power Station; Vermont Yankee Nuclear Power Corporation; resident inspector report; licensed operator requalification program inspection; there were no findings.

This inspection was performed by resident inspectors and a region-based operator licensing specialist. The significance of issues is indicated by their color (green, white, yellow, red) and was determined by the Significance Determination Process (SDP) in Inspection Manual Chapter 0609 (see Attachment 1).

- There were no inspection findings.

Report Details

Summary of Plant Status: At the beginning of this report period, Vermont Yankee was operating at 100 percent power. On September 13 operators reduced reactor power and initiated a manual reactor scram in response to decreasing main condenser vacuum caused by an unintended isolation of the steam jet air ejector system. Following the scram operators started the mechanical vacuum pump and used the main condenser for decay heat removal. On September 15 the reactor was restarted, however during the power ascension an unplanned power reduction of greater than 20 percent was made in response to the failure of a feedwater regulating valve positioner. As of September 16 the plant had been returned to full power operation. There were no additional power changes of note through the remainder of the inspection period.

1. REACTOR SAFETY
Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R05 Fire Protection

a. Inspection Scope

The inspectors evaluated plant areas important to reactor safety in order to assess VY's control of transient combustibles and ignition sources, and the material condition and operational status of fire protection systems, equipment, and barriers. The following areas were toured during this inspection period:

- Feedwater heater bay
- High pressure coolant injection (HPCI) pump room

b. Issues and Findings

There were no findings identified.

1R11 Licensed Operator Requalification

a. Inspection Scope

The following activities were reviewed to determine the effectiveness of the licensed operator requalification training program:

- The operating history documentation from a sample of inspection reports, licensee event reports, VY event reports (ERs), and the plant issues matrix were reviewed, including risk insights from Vermont Yankee's Individual Plant Examination.
- All written exams and a sample of the operating exams for licensed personnel for the years of 1999 and 2000 were reviewed. Observations were made of operating test administration to one shift crew and one staff crew.

- The facility's evaluation of crew and individual operator performance were observed, and remedial training activities for 1999 and 2000 were reviewed.
- Training feedback by students and management observation feedback forms for the two year training cycle were reviewed.
- A sample of medical records, training attendance records, and documentation on maintaining an active license were reviewed.
- The status and records of the Limited Senior Reactor Operator (LSRO) Program were reviewed. (The LSRO Program was last implemented in June 1999 and is not in use at this time.)

b. Issues and Findings

There were no findings identified.

1R12 Maintenance Rule Implementation

a. Inspection Scope

The inspectors reviewed VY's implementation of program procedure PP 7009, "10 CFR 50.65, Maintenance Rule Program," as related to the following events associated with high safety significant systems:

- High pressure coolant injection
- Feed water
- Main condenser non-condensible gas removal

b. Issues and Findings

There were no findings identified.

1R13 Maintenance Risk Assessment and Emergent Work Evaluation

a. Inspection Scope

The inspectors reviewed the maintenance risk assessment and work controls associated with the following activities:

- Troubleshooting on the main station battery A charger and an emergent work associated with the temporary modification to place a spare charger in service.
- Planned maintenance on the B emergency diesel generator during the week of September 18-22.

- Maintenance on the B standby liquid control system squib valve 11-14B meter on September 28 which placed the plant in a seven day shutdown LCO.

- Maintenance on a stator water cooling pump motor and breaker on September 27 which increased the likelihood of a loss of generator stator cooling.

b. Issues and Findings

There were no findings identified.

1R14 Personnel Performance During Non-routine Plant Evolutions

a. Inspection Scope

The inspectors observed portions of the following evolutions

- Reactor and plant startup from hot standby following the reactor scram on September 13.

b. Issues and Findings

There were no findings identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed operability determinations associated with the following plant issues:

- Primary containment isolation system Group 2 isolation signals to residual heat removal system valves that close to ensure no diversion of low pressure coolant injection flow during accident conditions (reference ER 2000-1294).

- Combined effects of a main steam and feed water line break on the high energy line break analysis as addressed in Basis for Maintaining Operation 2000-22, dated September 18, 2000.

b. Issues and Findings

There were no findings identified.

1R16 Operator Workarounds

a. Inspection Scope

The inspectors reviewed the cumulative effects of operator workarounds identified in VY's Workaround List dated August 4, 2000. The inspectors also interviewed operators to determine if any significant items were not on the list.

b. Issues and Findings

There were no findings identified.

1R19 Post Maintenance Testing

a. Inspection Scope

The inspectors reviewed and/or observed portions of the post maintenance testing associated with the following work activities:

- Preventive maintenance and 18 month inspections of the B emergency diesel generator during the week of September 18-22.

- Corrective maintenance to replace the mechanical seal of the B reactor water cleanup pump (P-49-1B) on September 26 (WO# 00-001922-000). The pump tripped automatically on cooling water temperature, and failed its post maintenance test. VY initiated ER 2000-1454 to document, evaluate, and correct this problem.

- Preventive maintenance associated with electrical power to containment isolation valve V12-18 for the reactor water cleanup system (WO# 98-007860-000). The valve stroked satisfactorily and met the acceptance criteria with no problems.

b. Issues and Findings

There were no findings identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors reviewed and observed portions of the following surveillance testing:

- Reactor core isolation cooling (RCIC) system quarterly pump operability and full flow test, performed on September 1 in accordance with OP 4121.

b. Issues and Findings

There were no findings identified.

1R23 Temporary Plant Modifications

a. Inspection Scope

The inspectors reviewed the following temporary plant modifications:

- Connection of battery charger BC-1-1C (the spare main station battery charger) to allow maintenance to main station battery charger BC-1-1A. This modification was necessary because corrective actions for cable separation problems precluded use of the spare charger's original wiring.

- The temporary bypass of a protective trip for the A reactor recirculation pump based on the pump's suction valve (V2-43A) being less than fully open. This modification was necessary to eliminate a DC bus electrical ground caused by a degraded portion of the logic circuit located in the drywell.

b. Issues and Findings

There were no findings identified.

1EP6 Drill Evaluation

a. Inspection Scope

The inspectors observed portions of an off-year emergency preparedness drill to evaluate the drill and VY's critique. The inspector focused on the event classification and notification, and communication of priorities among the emergency response organizations.

Through observation of VY's critique the inspectors verified that problems associated with an incorrect protective action recommendation were receiving immediate management attention and that this problem was entered into the corrective action program (ER 2000-1363).

b. Issues and Findings

There were no findings identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicators

.1 Data Collecting and Reporting Process Review (TI 2515/144)

a. Inspection Scope

The inspectors reviewed VY's program procedure AP 0094, "NRC Performance Indicator Reporting," dated May 19, 2000, in accordance with NRC Inspection Manual Temporary Instruction 2515/144. This administrative procedure described the data that various departments need to collect, the process that departments will use to deliver the data, and how the PI data will be transmitted to the NRC.

b. Issues and Findings

There were no findings identified.

The inspectors observed that AP 0094 did not provide any specific information regarding VY's practices for developing the PI data. For example, VY credited operator action during the monthly emergency diesel generator surveillances because the system will not automatically respond to accident signals. VY's basis for crediting operator action had not been verified by VY to be consistent with the criteria in NEI 99 - 02 (i.e., operator stationed locally, simple task, procedure direction, etc.). This issue was discussed with VY management and ER 2000-1452 was generated to evaluate how unavailability hours are counted for the emergency diesel generators.

Because VY did not have specific guidance on how to develop the PI data, the inspectors were not able to verify that VY's PI data collecting and reporting process would appropriately implement the NEI/Industry guidance. VY's interpretation and use of the NEI guidance will be evaluated by the inspectors during review of the individual performance indicators in accordance with NRC Inspection Procedure 71151.

.2 PI Verification - Emergency AC Power Unavailability

a. Inspection Scope

The inspectors performed a selective sample of the first and second quarter 2000 PI data submitted to the NRC for the Emergency AC Power System Unavailability PI to determine its accuracy and completeness. This review was performed in accordance with NRC Inspection Procedure 71171. The availability of the emergency diesel generators was determined through review of plant records and comparison with the definitions outlined in NEI 99 - 02, "Regulatory Assessment Performance Indicator Guideline," Revision 0.

b. Issues and Findings

The inspectors identified one issue associated with VY's practice of counting unavailability hours for the emergency diesel generators. During the monthly operability test OP 4126, "Diesel Generator Surveillance," operators are directed to change the droop setting on the diesel engine's governor. VY has not evaluated the impact of this setting on the diesel generator's ability to automatically perform its intended safety function or the ability of operators to promptly restore the diesel generator under accident conditions. VY initiated ER 2000-1452 on September 26 to evaluate how unavailability hours should be counted for the emergency diesel generators during surveillance testing. The inspectors determined this is a minor issue, because the additional unavailability hours (if required) would not cause the PI for Emergency AC Power System Unavailability to exceed a threshold that would change the PI color or require increased NRC attention.

4OA3 Event Follow-up

.1 Reactor Scram on September 13, 2000 - Loss of Condenser Vacuum

a. Inspection Scope

The inspectors observed the control room operators' response to a loss of the steam jet air ejector (SJAE) system and subsequent initiation of a manual reactor scram on September 13.

On September 13 a short circuit occurred as a control room operator was changing a light bulb for SJAE valve position indicating on the main control board. A blown fuse caused the loss of control power and indication for several valves in the motive steam supply flow path. These valves are air operated and designed to close on loss of power to their control solenoids. With the SJAE system out of service, main condenser vacuum began to decrease due to the accumulation of non-condensible gases (the loss of condenser vacuum is also referred to as "increasing condenser backpressure").

Operators commenced a power reduction using reactor recirculation flow in accordance with procedure OT 3120, "Condenser High Backpressure." As directed by OT 3120, a manual reactor scram was inserted when main condenser backpressure increased to 6.5 inches of mercury. Reactor power had been reduced to 77 percent at the time of the scram. Following the scram operators started the mechanical vacuum pump and used the main condenser for decay heat removal.

The inspectors were in the control room at the time and observed that the plant response to the scram was normal and that the operating crew responded properly to this challenge.

b. Issues and Findings

No findings were identified.

.2 Unplanned Power Reduction - Feedwater Regulating Valve Failure

a. Inspection Scope

On September 14 a reactor startup was commenced, and the main generator was placed on line the following day. During power ascension an instrument and controls (I&C) technician observed that the A feedwater regulating valve (FRV) was only 20 percent open, while the B FRV was 50 percent open. Reactor power was reduced from approximately 80 percent to less than 50 percent in support of troubleshooting. A failed pneumatic positioner has resulted in the undetected lockup of the FRV. The faulty positioner was replaced and the A FRV was returned to service. The inspectors reviewed VY's response to this event.

This issue was appropriately entered into VY's corrective action process (ER 2000-1385). The ER screening committee identified this event as a NRC performance indicator occurrence and a potential maintenance rule functional failure.

b. Issues and Findings

No findings were identified.

4OA5 Management Meetings

.1 Exit Meeting Summary

On October 19, 2000, the inspectors presented their overall findings to members of VY management led by Mr. Robert Sojka, Superintendent of Maintenance. VY management acknowledged the findings presented and did not contest any of the inspectors' conclusions. Additionally, they stated that none of the information reviewed by the inspectors was considered proprietary.

.2 Predecisional Enforcement Conference

On August 25, the NRC held a predecisional enforcement conference at the Region I office in King of Prussia, Pennsylvania (reference EA 00-165). The meeting was held to discuss apparent violations identified during an investigation performed by the NRC Office of Investigations (Case No. 1-1999-027). The results of this investigation were communicated to VY in a letter dated August 8, 2000. Overhead projection slides used by VY management during the predecisional enforcement conference are included as Attachment 2 of this report.

The results of the predecisional enforcement conference were issued to VY in a letter dated September 18, 2000. A Severity Level III violation was issued with no civil penalty. At the close of this inspection report period, VY management had not concluded whether they would formally contest the violation.

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed During this Inspection

none.

LIST OF ACRONYMS USED

NRC	Nuclear Regulatory Commission
VY	Vermont Yankee
SDP	Significance Determination Process
LCO	Limiting Condition for Operation
PI	Performance Indicator
NEI	Nuclear Energy Institute
URI	Unresolved Item
ECCS	Emergency Core Cooling System
FRV	Feedwater Regulating Valve

ATTACHMENT 1

NRC's REVISED REACTOR OVERSIGHT PROCESS

The federal Nuclear Regulatory Commission (NRC) recently revamped its inspection, assessment, and enforcement programs for commercial nuclear power plants. The new process takes into account improvements in the performance of the nuclear industry over the past 25 years and improved approaches of inspecting and assessing safety performance at NRC licensed plants.

The new process monitors licensee performance in three broad areas (called strategic performance areas): reactor safety (avoiding accidents and reducing the consequences of accidents if they occur), radiation safety (protecting plant employees and the public during routine operations), and safeguards (protecting the plant against sabotage or other security threats). The process focuses on licensee performance within each of seven cornerstones of safety in the three areas:

Reactor Safety	Radiation Safety	Safeguards
● Initiating Events	● Occupational	● Physical Protection
● Mitigating Systems	● Public	
● Barrier Integrity		
● Emergency Preparedness		

To monitor these seven cornerstones of safety, the NRC uses two processes that generate information about the safety significance of plant operations: inspections and performance indicators. Inspection findings will be evaluated according to their potential significance for safety, using the Significance Determination Process, and assigned colors of GREEN, WHITE, YELLOW or RED. GREEN findings are indicative of issues that, while they may not be desirable, represent very low safety significance. WHITE findings indicate issues that are of low to moderate safety significance. YELLOW findings are issues that are of substantial safety significance. RED findings represent issues that are of high safety significance with a significant reduction in safety margin.

Performance indicator data will be compared to established criteria for measuring licensee performance in terms of potential safety. Based on prescribed thresholds, the indicators will be classified by color representing varying levels of performance and incremental degradation in safety: GREEN, WHITE, YELLOW, and RED. GREEN indicators represent performance at a level requiring no additional NRC oversight beyond the baseline inspections. WHITE corresponds to performance that may result in increased NRC oversight. YELLOW represents performance that minimally reduces safety margin and requires even more NRC oversight. And RED indicates performance that represents a significant reduction in safety margin but still provides adequate protection to public health and safety.

The assessment process integrates performance indicators and inspection so the agency can reach objective conclusions regarding overall plant performance. The agency will use an Action Matrix to determine in a systematic, predictable manner which regulatory actions should be taken based on a licensee's performance. The NRC's actions in response to the significance

(as represented by the color) of issues will be the same for performance indicators as for inspection findings. As a licensee's safety performance degrades, the NRC will take more and increasingly significant action, which can include shutting down a plant, as described in the Action Matrix.

More information can be found at: http://www.nrc.gov/NRR/OVERSIGHT/index.html.

ATTACHMENT 2

SLIDES FROM VERMONT YANKEE PRESENTATION DURING THE PREDECISIONAL ENFORCEMENT CONFERENCE AT THE NRC's REGION I OFFICE IN KING OF PRUSSIA PENNSYLVANIA, AUGUST 25, 2000.