

U.S. NUCLEAR REGULATORY COMMISSION  
OFFICE OF INSPECTION AND ENFORCEMENT

Region I

Report No. 50-271/80-19

Docket No. 50-271

License No. DPR-28 Priority -- Category C

Licensee: Vermont Yankee Nuclear Power Corporation  
1671 Worcester Road  
Framingham, Massachusetts 01701

Facility Name: Vermont Yankee Nuclear Power Station

Inspection at: Vernon, Vermont

Inspection conducted: November 17-21, 1980

Inspectors: *N. J. Blumberg* 1/6/81  
N. J. Blumberg, Reactor Inspector date signed

*E. G. Greenman* 1/13/81  
E. G. Greenman, Chief, Nuclear Support date signed  
Section No. 2, RO&NS Branch

Approved by: *E. G. Greenman* 1/13/81  
E. G. Greenman, Chief, Nuclear Support date signed  
Section No. 2, RO&NS Branch

Inspection Summary:  
Inspection on November 17-21, 1980 (Report No. 50-271/80-19):  
Areas Inspected: Routine, unannounced inspection by region-based inspectors of followup on previously identified inspection findings; administrative controls for facility procedures; facility procedures, checklists, and related forms and changes thereto for conformance to administrative controls and Technical Specification requirements and for technical adequacy; verification that procedural changes were in conformance to 10 CFR 50.59(a) and (b) requirements; compliance to recent license amendments and to ensure incorporation into facility procedures where applicable; and a facility tour. The inspection involved 46 inspector-hours onsite by one region-based inspector and one region-based NRC supervisor.

Results: Noncompliances: None in five areas and two in one area (Violation - Failure to approve valve lineups and changes to valve lineups - paragraphs 4.C(1) and (2); and (Violation - failure to properly document valve lineup valve position changes; approval of incomplete valve lineup; and issue of procedures in wrong categories and with no PORC review - paragraphs 4.C(3), (4), and (5)).

## DETAILS

### 1. Persons Contacted

- R. Branch, Assistant Operations Supervisor
- F. Burger, Quality Assurance Coordinator
- R. Butterfield, Operations Technical Assistant
- F. Donnelly, Instrument and Control Supervisor
- \*D. Girroir, Staff Mechanical Engineer
- \*M. Lyster, Operations Supervisor
- \*W. Murphy, Plant Superintendent
- \*J. Pelletier, Assistant Plant Superintendent
- \*D. Reid, Engineering Support Supervisor

#### USNRC

- \*K. Choi, Visiting Inspector, Republic of Korea Nuclear Regulatory Bureau
- \*S. Collins, Resident Reactor Inspector
- \*E. Greenman, Chief, Nuclear Support Section No. 2, RO&NS Branch
- \*W. Raymond, Senior Resident Reactor Inspector

The inspectors also interviewed other licensee employees during the inspection including reactor operators, technical support and clerical personnel.

\*Denotes those present at the exit interview.

### 2. Licensee Action on Previous Inspection Findings

(Closed) Unresolved Item (50-271/80-02-03): No alarm procedure for new annunciator window CRP 9-3, A2, 5-C (SV monitoring system). The inspector determined that an alarm procedure has been added for this window to procedure OP 3140, "Alarm Response [Procedures]".

### 3. Facility Administrative Control Procedures

The inspector reviewed on a sampling basis the minutes of Plant Operations Review Committee (PORC) Meetings and administrative procedures for conformance with Technical Specifications, Section 6, "Administrative Controls", ANSI N18.7-1976, "Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants". The following procedures were reviewed:

- AP 0001, Plant Procedures, Revision 6, September 25, 1979.
- AP 0002, Department Instructions, Revision 5, April 12, 1979.
- AP 0013, Plant Record Retention, Revision 8, September 25, 1979.
- AP 0030, The Plant Operations Review Committee, Revision 6, January 7, 1980.
- AP 0155, Valve Identification, Revision 6, July 24, 1979.
- AP 0156, Valve Lineup File, Revision 6, June 22, 1979.
- OP 0161, Operations Key Control System, Revision 3, August 29, 1980.

No unacceptable conditions were identified.

#### 4. Facility Procedures

- a. The inspector reviewed facility procedures and temporary procedure changes, on a random basis to verify the following:
  - Procedures and changes, if any, were reviewed and approved in accordance with the requirements of the Technical Specifications and the licensee's administrative controls.
  - The overall procedure format and content were in conformance with the requirements of the ANSI N18.7-1976, "Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants."
  - Acceptance and Operability Criteria were in conformance with the requirements of the Technical Specifications.
  - Procedures, checklists and related forms in Plant Working Files are current with respect to revision and on-the-spot changes in conformance with the requirements of the Technical Specifications.
  - The applicable checklists were compatible with step-wise instructions in the procedures.
  - Temporary changes were made in conformance with Technical Specification requirements and the licensee's administrative controls.

- Technical content was adequate, using FSAR system descriptions, piping and instrument diagrams, and Technical Specifications, where necessary, to verify that procedures were sufficiently detailed to control the operation or evaluation described within Technical Specification requirements and limitations. The procedures reviewed with respect to this are marked with an asterisk (\*).

b. The following procedures were randomly selected and reviewed:

(1) General Operating Procedures

- \*-- OP 0102, Power Operations (Maneuvering at Power), Revision 9, June 30, 1980.
- OP 0110, Shutdown to Low Power Standby, Revision 5, August 29, 1980.

(2) System Operating Procedures

- OP 2115, Primary Containment, Revision 8, September 15, 1978.
- \*-- OP 2120, High Pressure Coolant Injection System, Revision 11, September 25, 1980.
- OP 2111, Control Rod Drive System, Revision 9, August 23, 1979.
- OP 2180, Circulating Water/Cooling Tower Operation, Revision 7, April 12, 1979.
- \*-- OP 2186, Fire Suppression Systems, Revision 8, April 30, 1980.
- OP 2126, Diesel Generators, Revision 8, September 28, 1979.
- OP 2184, Fuel Pool Cooling System, Revision No. 8, September 8, 1980.
- OP 3004, Coordination and Communications, Revision 10, November 7, 1979.
- OP 2132, Average Power Range Monitor Channels, Revision 6, January 7, 1980.

(3) Emergency Procedures

- OP 3131, Shutdown From Outside the Control Room, Revision 5, March 7, 1979.

- OP 3109, Anticipated Transients Without Scram Emergency Procedure, Revision 0, April 12, 1979
- OP 3108, Loss of Containment Integrity Emergency Procedure, Revision 0, September 11, 1979.
- \*-- OP 3111, Loss of Condenser Vacuum Emergency Procedure, Revision 4, July 26, 1978.
- OP 3140, Alarm Response, Revision 4 April 16, 1980:
  - \*-- CRP 9-5, A-8, 5-C, Drywell Pressure HI Trip
  - \*-- CRP 9-3, A-1, 3-B, HPCI Exhaust Pressure HI
  - CRP 9-3, A-1, 4-B, HPCI Oil Cooler Discharge Temperature HI
  - CRP 9-5, A-8, 5-A, CRD Water Filter  $\Delta$ P HI.
  - CRP 9-5, A-8, 8-A, CRD Pump B Trip.
  - CRP 9-6, 6-A, 4-C, Circulating Water Pump C Trip
  - CRP 9-6, 6-A, 8-B, Circulating Water Intake to Trip
  - CRP 9-6, 6-C, 9-C, Electric Fire Pump B, Loss of Power
  - CRP 9-6, 6-C, 6-D, Diesel Fire Pump A Fail to Start Trouble
  - CRP 9-8, 8-B, 3-C, Diesel Generator A Breaker Overcurrent Trip
  - CRP 9-8, 8-B, 4-C, Diesel Generator Lube Oil Temperature HI/LO
  - CRP 9-4, A-6, 9-A, Fuel Pool Cooling System Trouble
  - CRP 9-5, A-7, 1-F, APRM Downscale
  - CRP 9-5, A-7, 2-F, APRM HI

(4) Maintenance Procedures

OP 5310, Repair of Safety-Related Instrumentation and Components, Revision 1, July 24, 1979.

OP 5211, Control Rod Drive Removal, Overhaul and Installation, Revision 5, July 24, 1979.

OP 5223, Emergency Diesel Generator Maintenance, Revision 3, September 30, 1980.

OP 1408, LPRM Removal and Replacement, Revision 4, September 14, 1979.

OP 1416, Replacement of Jet Pump Holdown Beams, Revision 1, October 17, 1980.

c. Findings

(1) During the inspection, the inspector observed, in the Control Room, the following valve lineup checkoff lists which were later revisions than those maintained in the master file or in the Control Room procedure book:

Valve Lineup	Revision in Progress	Current Revision in Master File
OP 2123, Core Spray System	R-10	R-9
OP 2181, Service Water System	R-9	R-8
OP 2112, Reactor Water Cleanup System	R-10	R-9
RP 2190, Service and Instrument Air System	R-7	R-6
RP 2170, Condensate System	R-6	R-5
OP 2124, Residual Heat Removal System	R-14	R-13

Valve Lineup	Revision in Progress	Current Revision in Master File
OP 2122, Auto Blowdown System	R-5	R-4
OP 2126, Diesel Generators	R-9	R-8
OP 2182, Reactor Building Closed Cooling Water System	R-9	R-8
OP 2150, Advanced Off-Gas System	R-9	R-8
OP 2143, 480 VAC System	R-9	R-8
OP 2136, Reactor Building and Containment Radiation Monitoring System	R-7	R-6
OP 2180, Circulating Water system	R-8	R-7
OP 2110, Reactor Recirculation System	R-10	R-9
OP 2125, Containment Atmosphere Dilution System	R-10	R-9
OP 2152, Drywell Equipment and Floor Drains	R-8	R-7

The above valve lineups were being implemented and were in progress or about to begin. The licensee stated that the above valve lineups had been reviewed by the PORTC but had not been approved by the Plant Superintendent and/or the Manager of Operations. Further, the licensee stated that the decision to use valve lineups which had not received final administrative approvals was approved by the Plant Superintendent based on the fact that the valve lineups were improved over earlier revisions; that plant safety was not affected since the core was completely defueled at this time; and that it was desired to start the lineups as early as possible in the current outage. Based on a random review of valve lineups, the inspector concurred that the later revisions appeared to be satisfactory. However, the inspector informed the licensee that the administrative section of Technical Specifications must be complied with and the valve lineups should have been fully approved prior to use.

Failure to obtain proper approvals for valve lineups COLs is contrary to Technical Specifications 6.5.a and 6.5.c and is an example of an item of noncompliance (271/80-19-01). An additional example is detailed in paragraph 4.c.(2) below.

- (2) Copies of the latest completed system valve lineups are maintained in the Control Room until they are replaced by later valve lineups. The inspector reviewed the completed valve lineups which were performed during the 1979 refueling outage and determined that valves were added to or deleted from the following valve lineups without documenting the changes, obtaining PORC review, and Plant Superintendent approval:

- Valve CV-50 (CV-15 Steam Drain) was deleted from OP 2112, Reactor Water Cleanup System, Appendix A.
- Valve VG-4B-1A (PT-VG-4B isolation) was added to OP 2125, Containment Atmosphere Dilution System, Appendix A.
- Valves LWR-79A, B, C and D were added to OP 2151, Liquid Radwaste System, Appendix A.
- Valves SW-200 A, B, C and D (H<sub>2</sub> Cooler Drains) were deleted from OP 2181, Service Water System, Appendix A.
- Valves RCW-929 (PI-104-37 Supply to Equipment Sump) and RCW-930 (Drain PI-104-37) were added to OP 2182, Reactor Building Closed Cooling Water System, Appendix A.

In addition circuit breaker nomenclature were changed for Circuit Breakers 1 and 21 of OP 2143, 480 VAC System, Appendix A (Breaker Lineup) without obtaining an approved change.

Because Department Instructions (temporary change documents) were not issued for the above valve lineup changes the inspector observed that the above changes were not included in later revisions to OP 2112, OP 2181, OP 2125, and OP 2182 valve lineups which were currently in progress (see paragraph 4.c(1) above).

Failure to document temporary procedure changes and to obtain PORC review and Plant Superintendent approval is contrary to Technical Specification 6.5.D and is an example of an item of noncompliance (271/80-19-01). An additional example is detailed in paragraph 4.c(1) above.

- (3) During inspection of completed valve lineups performed during 1979, the inspector observed many instances in which valves were repositioned from the position specified by the valve lineup in the following valve lineup COLs:
- OP 2143, 480 VAC System, Appendix A sheets 3 and 6.

- OP 2153, Solid Radwaste, Appendix A sheets 2, 3 and 4.
- RP 2171, Condensate Demineralizer System, Appendix A, numerous sheets.
- OP 2180, Circulating Water/Cooling Tower Operation, Appendix A sheet 7.

Procedure AP 0156 requires that when a valve lineup is performed that if valves are placed in positions other than that specified by the valve lineup then the change in position must be initialled by the Shift Supervisor and a reason for the change must be written on the valve lineup sheet. This was not done for the valve lineup changes noted above.

Failure to initial and identify reasons for valve lineup position changes is contrary to ANSI 18.7-1976 and AP 0156 and is an example of an item of noncompliance (271/80-19-02). Additional examples are detailed in paragraphs 4.c(4) and (5) below.

- (4) AP 0156 requires that completed valve lineup sheets be reviewed and signed by the Shift Supervisor. For the latest completed valve lineup for OP 2150, advanced Off Gas System, Appendix D the positions of the following valves were not verified and they were annotated as "Can't Locate" on the valve lineup sheet:

- OG-8, DOP Generator Discharge
- SRS-8, Stack Gas II Vent

Although the valve lineup was incomplete, it was signed by the Shift Supervisor as complete.

The inspector informed the licensee that valve lineups should be completed and action taken to locate all valves; if valves are not in the system then a formal change should be issued to delete the valves from the valve lineup. During this inspection, a Shift Supervisor reviewed the system drawing and stated that valves OG-8 and SRS-8 are shown as installed in the system.

Approval of an incomplete valve lineup COL is contrary to ANSI 18.7-1976 and AP 0156, paragraph 3, and is an example of an item of noncompliance (271/80-19-02). Additional examples are detailed in paragraphs 4.c(3) and 4.c(5).

- (5) AP 0001 provides the following definitions for plant procedures:
- Operating Procedures (OP) - Procedures for operation of equipment, components, systems, or combinations of systems which are listed as safety class in the Yankee Atomic Quality Assurance Plan.

- Routine Procedures (RP) - Procedures for operation of equipment, components, or systems which are nonsafety class.
- Department Procedures (DP) - Procedures which effect department equipment, test methods, schedules, logs and recordkeeping.

In addition, AP 0001, requires that OPs and RPs be reviewed by the PORC prior to issue but PORC review is not required for DPs. The inspector determined that the following procedures which were issued as DPs should have been issued as either OPs or RPs and, in addition, they had not been reviewed by the PORC:

(a) Procedures which involved safety class items as defined in YOQAP-1A, Appendix and should have been issued as OPs:

- DP 1412, Jet Pump Inspection
- DP 2430, High Density Fuel Rack Boral Test
- DP 2445, IRM Calibration to Heat Balance
- DP 5306, Refuel Crane Calibration
- DP 5334, SRM/IRM Detector Insert/Retract Mechanism Maintenance.

(b) Procedures which involved a nonsafety class system and should have been issued as RPs:

- DP 5334, TIP Shear Valve Squib Charge Replacement
- DP 5331, TIP Indexing Mechanism Preventative Maintenance
- DP 5332, TIP Tubing Removal and Replacement
- DP 5330, TIP Drive Mechanism Maintenance

The following procedures were issued as DPs but should have been issued as OPs; however, the procedures had received PORC review:

- DP 1413, Jet Pump and Shroud Annulus Inservice Inspection

- DP 1414, Core Spray Sparger Inspection
- DP 1415, Jet Pump Beam Assembly UT Inspection

Issuance of Department Procedures to perform operations, inspections, or maintenance of plant equipment, components, or systems and failure to obtain PORC review where required is contrary to ANSI 18.7-1976 and AP 0001 and is an example of an item of noncompliance (271/80-19-02). Further examples are detailed in paragraphs 4.c(3) and 4.c(4) above.

- (6) ANSI 18.7-1976 requires a review of procedures at least every two years. The inspector identified thirty-eight procedures which had not had their biennial review completed although most of the procedures had been in the review "process" for two months to one year. The inspector informed the licensee that time taken to perform biennial reviews on procedures was far too long. The licensee acknowledged the inspector's comments and stated this problem had been recognized by management and that a Quality Assurance Department audit was in progress concerning this problem. Documentation was provided to the inspector indicating that an audit had been started on October 23, 1980.

The licensee stated that the audit will be completed by February 1, 1981 and that dates for completion of corrective actions will be established by March 1, 1981. This is considered a licensee identified item of noncompliance and is unresolved pending completion of licensee action and subsequent NRC:RI review (271/80-19-03).

#### 5. Procedure Changes Resulting From License Amendments

The inspector reviewed license amendments (Amendments 49 through 57) which included Technical Specification changes, issued during the past twenty-three month period and verified that applicable procedures were revised as necessary to reflect these changes.

No unacceptable conditions were identified.

#### 6. Changes to Procedures as Detailed in the Safety Analysis Report (Pursuant) to 10 CFR 59.59(a) and (b)

The inspector verified, on a sampling basis, that changes made to facility procedures during the past twenty month period were in compliance with 10 CFR 50.59(a) requirements and that records of these changes were maintained in compliance with 10 CFR 50.59(b). For the procedures reviewed, the licensee had determined that 10 CFR 50.59 safety evaluation documentation was not required (no change in procedures as described in the FSAR). The inspector had no questions in this area.

7. Facility Tour

The inspectors toured accessible areas of the facility as well as the control room. Specific items examined included housekeeping, posting of radiation areas, RWPs and observations of general plant conditions. A refueling outage was in progress at the time of this inspection.

No unacceptable conditions were identified.

8. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable, deviations or items of noncompliance. One unresolved item was identified and is detailed in paragraph 4.c(6).

9. Management Meetings

Licensee Management was informed of the purpose and scope of the inspection at the entrance interview, and the findings of the inspection were periodically discussed with the licensee representatives as follows:

<u>Date</u>	<u>Reportable Details Covered</u>
November 17	Entrance Interview
November 19	4.c(6), 4.c(5)
November 20	4.c(1), 4.c(2), 4.c(3) 4.c(4)
November 21	Exit Interview

The inspector conducted an exit interview with licensee representatives (denoted in paragraph 1) at the conclusion of the inspection, where the findings of the inspection were presented and acknowledged. A subsequent telephone discussion concerning inspection findings was conducted between Mr. N. Blumberg and Mr. W. Murphy on December 1, 1980.