

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

REGION I

Report No. 50-271/79-16

Docket No. 50-271

License No. DPR-28 Priority -- Category C

Licensee: Vermont Yankee Nuclear Power Corporation

20 Turnpike Road

Westborough, Massachusetts 01581

Facility Name: Vermont Yankee Nuclear Power Corporation

Inspection At: Vernon, Vermont

Inspection Conducted: October 16-19, 1979

Inspectors: R P Zimmerman  
R. P. Zimmerman, Reactor Inspector

10/30/79  
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Approved by: H. B. Kister  
H. B. Kister, Chief, Nuclear Support Section  
No. 2, RO&NS Branch

10/30/79  
date

Inspection Summary:

Inspection on October 16-19, 1979 (Report No. 50-271/79-16)

Areas Inspected: Routine, unannounced inspection by a regional based inspector of licensee action on previous inspection findings; administrative control of safety related calibrations; surveillance calibration of safety related components and equipment required by Technical Specifications; calibration required by Technical Specifications of components and equipment associated with safety related systems and/or functions; calibration and control of test equipment, technician qualification; and, control room operations. The inspection involved 20 inspector-hours onsite by one regional based inspector.

Results: No items of noncompliance were identified during this inspection.

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## DETAILS

### 1. Persons Contacted

- \*R. Burke, Engineering Support Supervisor
- \*W. Conway, Plant Superintendent
- P. Donnelly, Instrument and Control Supervisor
- \*W. Murphy, Assistant Plant Superintendent
- J. Pelletier, Maintenance Supervisor
- \*D. Reid, Lead Technical Assistant
- R. Sojka, Operations Supervisor

The inspector also interviewed other licensee employees, including members of the technical and engineering staff and reactor operators.

\*denotes those present at the exit interview.

### 2. Licensee Action on Previous Inspection Findings

(Closed) Unresolved Item (271/78-09-03): Reactor Building/Torus vacuum breakers. Operating Procedure 4202 has been revised to include an inspection criteria for the vacuum breakers and a calibration requirement for the testing scale.

(Closed) Unresolved Item (271/78-09-04): Sampling and Testing Diesel Fuel Oil. Operating Procedure 4613 has been revised to address sampling the Fire Pump Diesel Fuel Oil Tanks. Further, the acceptance criteria for viscosity specifies a sample temperature of 37.8°C (100°F).

(Closed) Noncompliance (271/78-09-05): Failure to calibrate balance of plant instrumentation. The licensee has completed a review of vital plant instrumentation requiring calibration and has written five additional procedures covering balance of plant instrumentation requiring periodic calibration.

(Closed) Unresolved Item (271/78-29-01): Containment Integrity. The inspector reviewed Operating Procedure 3108, Loss of Containment Integrity, for format and technical content.

(Open) Unresolved Item (271/77-C8-01): HPCI/RCIC Keep Fill Line and Vents. A plant modification allowing venting of the HPCI and RCIC discharge piping is scheduled to be completed during the present refueling outage. The inspector reviewed Plant Design Change Request 79-11, which details the safety evaluation and work to be performed. The above item remains open pending completion of the plant modification and conformance with Technical

Specification 4.5.I.3, which requires the ability to vent from the high point of the system.

(Open) Unresolved Item (271/79-04-04): Buna-N components (IEB 78-14). Operating Procedure 5305, Solenoid Valve Maintenance, is presently under revision to include the frequency for replacement of Buna-N components for the required solenoid valves. This item remains open pending NRC:RI review of the revised procedure.

(Open) Unresolved Item (271/79-12-03): Reactor vessel water level instrumentation (SIL 299). The initial review by the Instrument and Control Department does not consider alteration or modification to the existing ECCS setpoints to be necessary. More extensive research and calculations are in progress and the BWR Owners Group is participating. The above item remains open and will continue to be reviewed during subsequent inspections.

### 3. Administrative Control of Safety Related Calibrations

Administrative procedures were reviewed to determine the licensee's program for implementing requirements associated with the control of safety related calibrations, as specified in Technical Specifications, Section 6; Regulatory Guide 1.33, Quality Assurance Program Requirements; and, ANSI N18.7, Administrative Controls for Nuclear Power Plants.

The following procedures were reviewed:

- Administrative Procedure 0001, Plant Procedures, Revision 6, September 25, 1979.
- Administrative Procedure 0301, Calibration and Control of Test Equipment, Revision 6, July 26, 1978.
- Administrative Procedure 0022, Instrument Setpoint Changes, Revision 2, September 25, 1979.

No items of noncompliance were identified.

### 4. Surveillance Calibration of Safety Related Components and Equipment Required by Technical Specifications

- a. Calibration procedures/data were reviewed on a sampling basis to verify the following:
  - Calibration frequency requirements have been met;

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- Applicable system status during component calibration was in conformance with Technical Specification limiting conditions for operations;
  - Procedure format provided detailed stepwise instructions;
  - Procedure review and approval were as required by Technical Specifications;
  - Trip points of calibrated components were in conformance with Technical Specification requirements; and,
  - Technical content of procedures was sufficient to result in satisfactory component calibration.
- b. Selected Technical Specifications (TS) surveillance requirements, associated test procedures and data (indicated by dates of performance) are listed below:
- TS Table 3.2.5, Operating Procedure (OP) 4308, Average Power Range Monitor Calibration, Revision 2, May 25, 1978. Data: March 16, July 20, August 17, and September 14, 1979.
  - TS Table 3.2.1, OP 4346, Core Spray Pump Discharge Pressure Functional/Calibration, Revision 7, May 25, 1978. Data: July 3, July 30, August 27, and October 4, 1979.
  - TS Table 3.2.3, OP 4333, Reactor Building Vent and Standby Gas Treatment Subsystem A/B Logic Test, Revision 7, March 28, 1978. Data: February 2 and August 6, 1979.
  - TS Table 3.1.2, OP 4338, Drywell High Pressure ECCS Functional/Calibration, Revision 7, May 8, 1978. Data: January 9, April 9, June 6, and September 5, 1979.
  - TS Table 3.2.1, OP 4325, Condenser Low Vacuum Isolation Function Test/Calibration, Revision 8, May 25, 1978. Data: January 25, March 1, August 27, and October 4, 1979.
  - TS Table 3.2.2, OP 4323, Main Steam Line High Flow Functional Test/Calibration, Revision 9, July 28, 1977. Data: December 19, 1978, March 20, June 21, and September 20, 1979.
  - TS Table 3.2.6, OP 4374, HPCI-Torus Water Level Functional Test/Calibration, Revision 11, August 23, 1979. Data: May 16 and August 16, 1979.

- TS Table 3.2.1, OP 4354/4355, RHR Subsystem A/B Logic Test, Revision 8, April 12, 1979. Data: November 30, 1978 and July 11, 1979.

No items of noncompliance were identified.

5. Calibration Required by Technical Specifications of Component and Equipment Associated with Safety Related Systems and/or Functions

- a. The calibration program (addressed in Regulatory Guide 1.33 and ANSI N18.7) for components associated with safety related systems was reviewed on a sampling basis. These components are used to monitor system parameters to comply with Technical Specification (TS) safety limits; limiting conditions for operation and surveillance requirements. The following were verified:
  - Specific requirements have been established for the above calibrations, including schedules and frequencies;
  - Procedures have been reviewed and approved in accordance with the Technical Specifications, contain acceptance criteria consistent with the Technical Specifications, and contain detailed instructions commensurate with the complexity of the calibration; and,
  - Technical content of procedures are adequate to perform a satisfactory calibration.
- b. The selected TS parameter, associated instrument calibration procedures and data (indicated by date of performance) are listed below:
  - HPCI pump flow rate and discharge head (TS 4.5.E.1), OP 5314, Calibration of HPCI Balance of Plant Instrumentation, Revision 0, July 13, 1978. Data: May 23, 1979 (FI-23-108) and May 14, 1979 (PI-23-81).
  - SGTS flow rate and filter differential pressure (TS 4.7.B.1.a), OP 5329, Calibration of SGTS Balance of Plant Instrumentation, Revision 0, June 6, 1978. Data: November 9, 1978 (FT 1-125-1A) and November 6, 1978 (dPI 7A(7B), dPI 9A(9B)).
  - RCIC pump flow rate (TS 4.5.G.1), OP 5315, Calibration of RCIC System Balance Plant Instrumentation, Revision 0, May 8, 1978. Data: June 8, 1979 (FI-13-91).

- RHR pump flow rate and discharge heat (TS 4.5.A.1.b), OP 5313, Calibration of RHR/LPCI System Balance of Plant Instrumentation, Revision 0, December 6, 1977. Data: August 18, 1979 (FI-10-139A); September 4, 1979 (PI-10-107B); and, August 18, 1979 (FI-10-107A).
  - Containment spray pump flow rate (TS 4.5.H.1), OP 5313, Calibration of RHR/LPCI System Balance of Plant Instrumentation, Revision 0, December 6, 1977. Data: August 18, 1979 (FI-10-136A) and September 1, 1979 (FI-10-136B).
  - Core spray pump flow rate (TS 4.5.A.1.b), OP 5312, Calibration of Core Spray Balance of Plant Instrumentation, Revision 0, December 22, 1977. Data: July 11, 1979 (FI-14-50A(B)).
- c. During the above review, the inspector noted the following instances where recorded calibration data did not receive an adequate secondary review.
- HPCI flow indicator (FI-23-108) - data for May 23, 1979 calibration - at 10 ma input signal, the output indication was recorded as 10 gpm, vice 0 gpm.
  - RHR flow indicator (FI-10-139B) - data for August 18, 1979 calibration - two output data points recorded instead of the necessary three points for adequate calibration.
  - Containment spray flow indicator (FI-10-136A) - data for August 18, 1979 calibration - at 50 ma input signal the recorded output did not satisfy the acceptance criteria of the procedure. Further review showed the acceptance criteria to be incorrect and in need of revision.

The inspector further noted that the applicable procedures did not address secondary review of balance of plant (BOP) instrumentation and that no review was documented on the individual instrument calibration cards where the data is recorded. The licensee representative stated that the Instrument and Control Foreman performs a review of all BOP calibration data although no responsibility is designated in writing. The licensee representative agreed that a more thorough review of data is necessary and that delegation of responsibility to perform the review would be put in writing. The above item is unresolved pending licensee action and subsequent NRC:RI review (271/79-16-01).

6. Calibration and Control of Test Equipment

- a. The calibration and control of test equipment used as standards in the calibration of components identified in Paragraphs 4 and 5 above were reviewed on a sampling basis to verify the following:
- Establishment and adherence to calibration schedules;
  - Maintenance of calibration records identifying standards used which have traceability to the National Bureau of Standards or other independent testing organizations;
  - Proper storage and labeling of test equipment; and,
  - Adequate control of test equipment including recordkeeping.
- b. The selected devices are listed below.
- Mansfield and Green Deadweight Tester, S/N 3961;
  - Fluke 8600A DVM, S/N 0855299;
  - Weston DC Voltmeter, S/N 82587;
  - Leeds and Northrup Resistance Temperature Bridge, VY #40;
  - Hewlett-Packard Electronic Counter, S/N 5216A;
  - Foxboro Current Calibrator, VY #97; and,
  - Fluke 8600 A DVM, VY #483.

No items of noncompliance were identified.

7. Technician Qualification

The inspector reviewed the qualification records of selected technicians having responsibility for calibration of safety related systems and components to verify that the individuals' experience level and training were in accordance with ANSI N18.1, Selection and Training of Nuclear Power Plant Personnel.

No items of noncompliance were identified.

8. Control Room Operations

The inspector observed control room operations for proper control room manning, and facility operation in accordance with selected Administrative and Technical Specification requirements.

No items of noncompliance were identified.

9. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, items of noncompliance, or deviations. An unresolved item identified during this inspection is discussed in Paragraph 5.c.

10. Exit Interview

The inspector met with licensee representatives (denoted in Paragraph 1) at the conclusion of the inspection on October 19, 1979. The inspector summarized the scope and findings of the inspection.