



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
631 PARK AVENUE
KING OF PRUSSIA, PENNSYLVANIA 19406

SEP 29 1980

Docket No. 50-271

Vermont Yankee Nuclear Power Corporation
ATTN: Mr. Robert L. Smith
Licensing Engineer
25 Research Drive
Westborough, Massachusetts 01581

Gentlemen:

Subject: Inspection 50-271/80-13

This refers to the inspection conducted by Mr. W. Raymond of this office on August 11-September 12, 1980, at Vermont Yankee Nuclear Power Plant, Vernon, Vermont, of activities authorized by NRC License No. DPR-28 and to the discussions of our findings held by Mr. S. Collins with Mr. W. Murphy and other members of your staff periodically during the inspection.

Areas examined during this inspection are described in the Office of Inspection and Enforcement Inspection Report which is enclosed with this letter. Within these areas, the inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observations by the inspector.

Our inspector also verified the steps you have taken to correct the items of noncompliance brought to your attention in letters dated January 8, 1979 and June 10, 1980. We have no further questions regarding your actions at this time.

Within the scope of this inspection, no items of noncompliance were observed.

In accordance with Section 2.790 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosed inspection report will be placed in the NRC's Public Document Room. If this report contains any information that you (or your contractor) believe to be proprietary, it is necessary that you make a written application within 20 days to this office to withhold such information from public disclosure. Any such application must be accompanied by an affidavit executed by the owner of the information, which identifies the document or part sought to be withheld, and which contains a statement of reasons which addresses with specificity the items which will be considered by the Commission as listed in subparagraph (b) (4) of Section 2.790. The information sought to be withheld shall be incorporated as far as possible into a separate part of the affidavit. If we do not hear from you in this regard within the specified period, the report will be placed in the Public Document Room.

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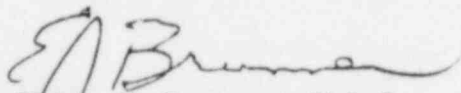
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No reply to this letter is required; however, if you should have any questions concerning this inspection, we will be pleased to discuss them with you.

Sincerely,



Eldon J. Brunner, Chief
Reactor Operations and Nuclear
Support Branch

Enclosure: Office of Inspection and Enforcement
Inspection Report No. 50-271/80-13

cc w/encl:

Mr. W. P. Murphy, Plant Superintendent
Mr. W. F. Conway, Vice President and Manager of Operations
Mr. J. E. Griffin, President
Mr. L. H. Heider, Vice President

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

Region I

Report No. 80-13
Docket No. 50-271
License No. DPR-28 Priority -- Category C
Licensee: Vermont Yankee Nuclear Power Corporation
25 Research Drive
Westborough, Massachusetts 01581
Facility Name: Vermont Yankee
Inspection at: Vernon, Vermont
Inspection conducted: August 11-September 12, 1980
Inspectors: William J. Raymond 9/19/80
W. J. Raymond, Senior Resident Inspector date signed
Samuel Kollum 9/19/80
S. J. Collins, Resident Inspector date signed
T. T. Martin 9/28/80
T. F. Foley, Resident Inspector date signed
Approved by: T. T. Martin 9/25/80
T. T. Martin, Chief, Reactor Projects date signed
Section No. 3, RO&NS Branch

Inspection Summary:

Inspection on August 11-September 12, 1980 (Report No. 50-271/80-13)

Areas Inspected: Routine, onsite, regular and backshift inspection by the Resident Inspectors. Areas inspected included: Actions Taken on Previous Inspection Findings; Review of Plant Operations, including: instrumentation and Alarms, Shift Manning, Radiation Protection Controls, Plant Housekeeping, Fire Protection/Prevention, Control of Equipment, and Shift Logs and Operating Records; System Operational Safety Verification; Licensee Staffing; Licensee Reporting; IE Bulletin Review; Witness of Surveillance Tests; Response to Plant Events; observations of Physical Security; Plant Maintenance, Modifications, and Refueling Preparations; T-Quencher-Weld Repair; and, Plant Computer Calculation of Core MTPF. The inspection involved 120 inspector hours onsite by three Resident Inspectors.

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

DETAILS

1. Persons Contacted

The below listed technical and supervisory level personnel were among those contacted:

Mr. L. Anson, Plant Training Supervisor
Mr. R. Branch, Assistant Operations Supervisor
Mr. P. Donnelly, Instrument and Control Supervisor
Mr. D. Girroir, Technical Assistant
Mr. S. Jefferson, Reactor Engineering Supervisor
Mr. M. Lyster, Operations Supervisor
Mr. W. Murphy, Plant Superintendent
Mr. J. Pelletier, Assistant Plant Superintendent
Mr. D. Reid, Engineering Support Supervisor
Mr. R. Sojka, Senior Operations Engineer
Mr. S. Vekasy, Technical Assistant

The inspectors also interviewed other licensee employees during the inspection, including members of the Operations, Health Physics, Instrument and Control, Maintenance, Security and General Office staffs.

2. Action Taken on Previous Inspection Findings

(Closed) Unresolved Item (50-271/80-05-01): Licensee submittal of supplement to LER 80-19 to provide results and conclusions of Advanced Off-Gas anomaly evaluation. LER 80-19/1T, Rev. 1 was issued by the licensee on September 2, 1980. The inspector reviewed subject document and noted it provides an event description, probable consequences, cause description, and corrective action summary. This item is considered resolved.

(Closed) Noncompliance (50-271/80-06-03): Failure to record data as required by a test procedure. A review of data sheets VYOPF 4424.01 for scram #94 of November 19, 1979, revealed that the required reactor power and reactor pressure readings at the time of scram #94 had been inserted. The inspector noted that a change to procedure VYOP 4424 Control Rod Scram Testing, Rev. 5, issued September 4, 1979, was needed to delete the procedure step requirement for recording accumulator pressure prior to, and following testing other than single rod scrams. The existing data form VYOPF 4424.01 notes that accumulator pressure is recorded for single rod scrams only. The inspector also noted that sheet 2 of VYOPF 4424.01 for scram # 94 had not been reviewed and signed by Dept. Supvr. and sheets 1 and 2 did not have the applicable scram type noted as either multiple or single. The inspectors observations were discussed with licensee representatives and prompt corrective action was taken. The inspector subsequently verified that Department Instruction (DI) 80-05, dated September 12, 1980, was issued to VYOP 4424 deleting requirement to record accumulator pressure for other than single rod scrams. This item is considered resolved.

(Open) Unresolved Item (50-271/80-07-01): Fire brigade training incorporating fighting various types of fires of similar magnitude and complexity as those which could occur at the plant. The inspector reviewed licensee's intentions and noted by discussions with the Training Supervisor and correspondence review that contact had been made with two firms to contract for a training service and facility to meet the above requirements. This item will remain open pending the licensee's decision to incorporate the guidelines into their training program and procurement of a suitable training facility.

(Open) Followup Item (80-09-01): Implementation of interim procedure for measuring airborne Iodine-131 in environment during emergency. The inspector reviewed VYOP 3013, Initial Evaluation of Off-Site Radiological Conditions, Rev. 3, dated November 11, 1979, and noted that Department Instruction 80-15, dated July 7, 1980, had been issued providing for I¹³¹ analysis of off-site air samples utilizing a SAM II type instrument. During the review of subject procedure change the inspector noted that the section titled Final Conditions had been omitted from the approved procedure change (DI 80-15). The inspector brought this to the attention of licensee personnel and a procedure change will be issued to reinstate the applicable Final Conditions. This item remains open pending issue of procedure change and review by the inspector.

(Closed) Inspector Follow Item (50-271/79-20-02): Possible Failure Trend on Snubber RR13. The inspector reviewed the inspection results for snubber RR13 documented in a maintenance department memo to J. Pelletier dated January 7, 1980. Snubber RR13 was inspected on January 5, 1980, during plant shutdown and fluid level, orientation and leakage were found satisfactory. No failure trend was established on snubber RR13. This item is closed.

(Closed) Inspector Follow Item (50-271/79-20-03): Cause Mechanism for Snubber Cylinder Wall Scoring. The inspector reviewed a maintenance department memo dated February 20, 1980, and interviewed licensee personnel regarding the plant engineering evaluation of cylinder wall scoring. The licensee's review identified no mechanism to cause the scoring of cylinder walls, verified that the scoring was not caused by the manufacturing process and, confirmed that the scoring did not cause visual or functional testing failures. Based upon discussions with the snubber manufacturer, it was concluded that the scoring is probably caused by snubber piston movements during installation. This item is closed.

(Closed) Inspector Follow Item (50-271/79-19-02): Leakage Identified during ILRT. Engineering Support memo to Licensee Engineering Supervisor, dated January 3, 1980, documented completion of the required actions. Work was completed under MR 79-0914 on November 6, 1979, to repair identified leaks at the South Core Spray bellows test plug and on penetration X101B test connections. This item is considered closed.

(Closed) Unresolved Item (50-271/79-19-01): Modifications to Improve Containment Boundary Integrity. Engineering support memo to Licensee Engineering Supervisor, dated January 3, 1980, documented completion of the licensee actions in this area. An engineering review of containment penetrations identified no other penetrations similar to X101B. Penetration X101B was capped. This item is closed.

(Closed) Noncompliance (50-271/78-29-03): Removal of Interface Between the Demineralized Water System and Reactor Building Instrument Racks. Removal of demineralized water connections in the vicinity of the Reactor Building instrument racks was completed under PDCR 79-18, dated August 20, 1979, and JO 79-25, completed October 19, 1979. The inspector reviewed the job order file assembled by the I & C Department and noted that it was complete up to the point of OQA, QAC and ESS sign-off. Actions completed included submission of four marked up field sketches for revision. Based on discussions with the Document Control Section, the inspector determined that the field sketches are complete and the entire package is ready for OQA review pending incorporation of revised drawings in the JO file. This item is closed.

(Open) Unresolved Item (50-271/78-05-05): Decontamination Procedure. The inspector reviewed Revision 1 to OP 5204 dated February 26, 1980, cleaning and flushing, and noted that none of the procedure changes from the original version addressed the problems identified in NRC Region I Inspection Report 50-271/78-05, paragraph 7. a. through 7. d. This item remains unresolved pending further review by the inspector and completion of licensee action in this area.

3. Review of Plant Operations - Plant Inspection

The inspector reviewed plant operations through direct inspection and observation throughout the reporting period. Activities in progress included routine operations at rated power, a power reduction on August 4, 1980, for drywell entry to check Recirculation Pump Motor Cooling System, subsequent return to normal power level, plant preparation and coastdown for a scheduled refueling outage.

a. Instrumentation

Control room process instruments were observed for correlation between channels and for conformance with Technical Specification requirements. No unacceptable conditions were identified.

b. Annunciator Alarms

The inspector observed various alarm conditions which had been received and acknowledged. These conditions were discussed with shift personnel who were knowledgeable of the alarms and actions required. During plant inspections, the inspector observed the condition of equipment associated with various alarms. No unacceptable conditions were identified and, except as noted below the inspector had no further comments in this area.

During a control room inspection tour on August 9, 1980, the inspector noted panel 9-5 SLC Cont. Loss annunciator in an alarm condition in conjunction with a loss of status indication on 9-5 panel for valve V-11-14B Squibb Vlv. Ready. Discussions with the Shift Supervisor revealed that the on-shift operators were aware of the condition and were verifying squibb valve V-11-14B continuity once a shift by noting Standby Liquid Control continuity meter reading for valve V-11-14B greater than the indicated alarm setpoint. Following discussion with Operating Department personnel, the licensee agreed to note in the degraded component column of the Shift Turnover Data and Checklist, VYAPF 0152.01, the meter reading for squibb valve V-11-14B during the periods when Squibb Vlv. Ready indication is lost. The licensee noted that intermittent loss of the subject 9-5 panel front indication has occurred in the past and efforts to correct the problem have not been successful. The licensee intends to troubleshoot valve V-11-14B continuity indication in conjunction with upcoming scheduled surveillance. The results of the licensee's corrective actions will be evaluated during a subsequent inspection. (IFI 50-271/80-13-01)

c. Shift Manning

The operating shifts were observed to be staffed to meet the operating requirements of Technical Specifications, Section 6, both to the number and type of licenses. Control room and shift manning were observed to be in conformance with Technical Specifications and site administrative procedures.

d. Radiation Protection Controls

Radiation protection control areas were inspected. Radiation Work Permits in use were reviewed, and compliance with those documents, as to protective clothing and required monitoring instruments, was inspected. Proper posting of radiation and high radiation areas was reviewed in addition to verifying requirements for wearing of appropriate personal monitoring devices.

Except as noted below, the inspector had no further comments in this area.

During inspection tours on August 12, 1980, the inspector noted the posting and controls established for a high radiation area located in the NE corner of the Reactor Building, 280 foot elevation. (Note: NRC Region I Inspection Report 50-271/80-05 contains further discussions on this item). The high radiation area consisted of two process lines running vertically between the Reactor Building, 252 foot 6 inches and 280 foot elevations. The process lines were marked with "Hot Spot" stickers which indicated dose rates of 1.2 R/hr on contact with the pipe and 300 mR/hr at 18 inches. A rope barrier was constructed around the area, about 5 feet from the process lines, with posting which indicated dose rates at the barrier were 40 mR/hr. The inspector confirmed that the licensee's posting was accurate by conducting independent surveys and noted that dose rates decreased rapidly with distance from the lines (eg., readings obtained by the inspector were 900 mR/hr at 1 inch; 400 mR/hr at 8 inches). The inspector also noted that the 1.2 R/hr contact reading was constant along the length of the piping. As such, although the area was barricaded and posted, the process lines represented a source term which could result in a substantial whole body dose to an individual leaning against the line. Secondly, the source term created high general area dose rates (in an area frequented by plant personnel) that are not consistent with ALARA considerations.

The inspector's concerns were discussed with the plant health physicist, who indicated the source term was probably due to deposits of Co^{60} internal to the line. It was agreed that either flushing the lines or constructing a concrete shield would be necessary to reduce the general area dose rates. The inspector was informed that a concrete shield wall would be constructed around the lines. Work Request (WR) 800366 dated August 13, 1980, was issued to construct a wall on both the 252 foot and 280 foot elevations of the Reactor Building. This item is unresolved pending completion of the above walls and subsequent review by the inspector (UNR 50-271/80-13-02).

e. Plant Housekeeping Controls

Storage of material and components was observed with respect to prevention of fire and safety hazards. Plant housekeeping was evaluated with respect to controlling the spread of surface and airborne contamination. There were no unacceptable conditions identified.

f. Fire Protection/Prevention

The inspector examined the condition of selected pieces of fire fighting equipment. Combustible materials were being controlled and were not found near vital areas.

g. Control of Equipment

During plant inspections, selected equipment under safety tag control was examined. Equipment conditions were consistent with information in plant control logs.

h. Shift Logs and Operating Records

During the inspection period, the inspector reviewed on a sampling basis the following logs and records for the period of August 11-September 12, 1980:

- Shift Supervisor's Log
- Control Operator's Round Sheet
- Auxiliary Operator's Round Sheet
- Shift Turnover Data and Checklist
- Night Order Book

The logs and records were reviewed to verify that entries are properly made; entries involving abnormal conditions provide sufficient detail to communicate equipment status, deficiencies, corrective action, restoration and testing; records are being reviewed by management; operating orders do not conflict with the Technical Specifications; logs and incident reports detail no violations of Technical Specifications or reporting requirements; logs and records are maintained in accordance with Technical Specification and Administrative Control Procedure requirements.

Several entries in these logs were the subject of additional review and discussion with licensee personnel. No unacceptable conditions were identified.

i. Switching and Tagging Order File Review

The Switching and Tagging Order File was reviewed for the period covering May 1, 1980 to August 19, 1980. Out of 95 total tagging orders issued during the subject period, nine were still in effect. Tagging orders 3880, 3924, 3934, 3941, 3963, 3966, 3997, 3998 and 4003 were reviewed for a determination of the types of equipment affected, duration of temporary system alteration and impact on Technical Specification LCO requirements. None of the tagging orders reviewed were deemed to constitute a LCO degradation nor an item requiring a 10 CFR 50.59 review. Five of seven tags issued under Order 3941 were verified to be hung on the specified equipment, with the equipment positioned as specified by the Order.

No items of noncompliance were identified.

4. System Operational Safety Verification

A detailed review was conducted of the Reactor Core Isolation Cooling System (RCIC) and the Low Pressure Coolant Injection (LPCI) system to verify the systems were properly aligned and fully operational in the standby mode. Review of the above systems included the following:

- a. Verification that plant valve lineup procedures were consistent with plant system drawings. Plant procedures OP 2124 and 2121, and drawings G-191172 and G-191174 were used to verify proper lineups for the LPCI and RCIC systems, respectively.
- b. Walkdown of system by inspector with licensee personnel to verify positions of accessible valves in the flow path were correct by visual observation of the valve or its remote position indication.
- c. Visual inspection of major components for leakage, proper lubrication, cooling water supply, general condition and other conditions that might prevent fulfillment of their functional requirements.
- d. Verification by observation that instrumentation essential to system actuation and performance was operational.

No items of noncompliance were identified.

5. Licensee Staffing

Effective September 1, 1980, the following changes in licensee personnel were made:

M. D. Lyster, Operations Supervisor

R. E. Sojka, Senior Operations Engineer

These changes were reviewed against the requirements of Technical Specification, Appendix A, Section 6.1 and ANSI N18.1-1971.

There were no unacceptable conditions identified.

6. In-Office Review of Licensee Event Reports

The licensee event reports (LERs) listed below were reviewed in the NRC Resident/Regional Office. The reports were reviewed to determine whether: the information provided was clear in the description of the event and identification of safety significance; the event cause was identified and corrective actions taken (or planned) were appropriate; the report satisfied requirements with respect to information provided and timeliness of submittal; and, on-site followup was warranted. Those reports annotated with an asterisk (*) concern events that occurred when the inspector was onsite and inspector review/evaluation of the event is documented elsewhere, in this or other inspection reports.

* 80-19/IT, Rev. 1: Supplementary information concerning AEOG Rad Monitors being made inoperative under controlled conditions while evaluating low AOG recombiner temps.

80-24: Loss of uninterruptable power supply, UPS-IB, for approximately 5 hours due to failed diode in logic power supply board.

80-25: Main Steam differential pressure indicating switch MS-DPIS-2-120C setpoint above T.S. Table 3.2.2 due to setpoint drift.

7. Review of Periodic and Special Reports

Upon receipt, periodic and special reports submitted by the licensee pursuant to Technical Specification 6.7 and Environmental Technical Specification 5.4 were reviewed by the inspector to verify that reporting requirements had been met.

-- Monthly Operating Report, August 1980.

No unacceptable conditions were identified.

8. IE Bulletin Review and Followup

Licensee responses and actions taken for the IE Bulletins listed below were reviewed to verify that:

- the bulletins were received onsite and reviewed for applicability to the facility;
- bulletin action items, if applicable, and identified problems were appropriately dispositioned;
- corrective actions taken, or planned, were appropriate; and,
- responses to the NRC were accurate and within the time period specified in the bulletin.

Inspector followup on selected bulletins is summarized below. The inspector had no further comment on the subject bulletins, except as indicated below.

a. IEB 80-17, Supplement 3, Failure of Control Rods to Fully Insert at a BWR, dated August 25, 1980

- References: (1) VYNPC letter WVY 80-123 to NRC dated September 2, 1980
 (2) VYNPC letter WVY 80-122 to NRC dated September 2, 1980
 (3) Licensee internal memo RES to JPP dated August 19, 1980
 (4) USNRC letter to VYNPC, W. F. Conway, dated September 11, 1980
 (5) Licensee internal memo, RB to JPP dated August 27, 1980

IEB 80-17, Supplement 3 required certain procedural changes be made to specify operator actions to be taken in the event that a degradation of the control air system occurs. Department Instruction (DI) 80-45, Rev. 1 was issued on August 28, 1980, for OP 2111 to require the reactor to be immediately shut down whenever (i) scram pilot air header pressure decreases to 65 psig as indicated on PI-3-229; (ii) confirmed multiple rod drift alarms occur; or, (iii) there is a significant increase in the number of control rods with a high temperature alarm. The requirement to scram the reactor when scram pilot air pressure reaches 65 psig is based on minimum operating pressure of 25 ± 2 psig and 40 ± 2 psig for the scram inlet and outlet valves, respectively.

The licensee's initial response to Supplement 3 dated September 2, 1980, stated that no actions would be taken at that time to incorporate a requirement to functionally test the SDV instrument volume level switches prior to each reactor startup. Following additional discussions between the licensee and the NRC: Region I staff, in accordance with Reference (4), DI 80-44 was issued on September 10, 1980, to OP 0100 to require the functional testing.

The inspector also verified by review of completed data sheets for the period August 1, 1980, to September 8, 1980, that daily UT examination of the SDV headers for residual water was conducted. The measurements revealed no change from previous results obtained during the scram time tests, in that all header points monitored were empty except location N-2 which had less than 0.5 inches of water. (Reference: NRC: Region I Inspection Report 50-271/80-10, paragraph 10).

The inspector also reviewed operator training records for classes given during the period of July 7-15, 1980, covering details of the Browns Ferry Event and VY plant specific changes resulting from the incident.

The inspector had no further comments in this area. No items of noncompliance were identified.

b. IEB 78-11, Examination of Mark I Containment Torus Welds, dated July 24, 1978

Licensee responses dated August 3 and August 8, 1978, provided all information requested by the bulletin in regard to the procedures, methods and acceptance criteria used for examination of torus welds.

No items of noncompliance were identified.

c. IEB 80-02, Inadequate QA for Nuclear Supplied Equipment, dated January 21, 1980

- References:
- (1) VY P.O. No. 12503 to GE Company dated June 12, 1979
 - (2) GE P.O. 205-AM131
 - (3) PQC No. 22860 dated October 16, 1979
 - (4) Receipt Inspection Checklist with QA entries on October 3, 1979 and July 3, 1980
 - (5) PQC 22847 dated October 15, 1979
 - (6) Warranty Claim Notice dated April 9, 1980
 - (7) VY Response letter dated April 4, 1980
 - (8) GE Service Company letter to VYNPC dated June 19, 1980

Subsequent to receipt of the bulletin, the licensee in conjunction with GE conducted an extensive review of records for materials/components supplied to VY. The licensee determined that the only component in his possession supplied from the Marvin Engineering Corporation was a feedwater sparger thermal sleeve, which was in storage in the South warehouse as of April 4, 1980. The thermal sleeve was procured in advance of the 1979 refueling outage (Purchase Order dated June 12, 1979 and receipt inspected on site on October 3, 1979) for possible use in the VY reactor vessel, pending the outcome of the feedwater sparger inspection during the outage. The 1979 sparger inspections showed no need for the spare thermal sleeve and by his April 4, 1980, bulletin response, the licensee stated there are no plans at present to use the sleeve.

In parallel with the licensee's bulletin responses, the licensee also filed a warranty claim notice with GE on April 9, 1980, citing NRC concerns identified in IEB 80-02 as problems, along with licensee questions regarding the material finish on the thermal sleeve based on a receipt inspection by the plant maintenance department. The sleeve was put on QC Hold. A GE letter dated June 19, 1980, rejected the Warranty Claim Notice on the grounds that the material finish was normal for the manufacturing process used and therefore satisfactory. Additionally, questions regarding the quality of the product were dismissed based on the signed PQC dated October 16, 1979, and GE's attestation that the part was manufactured in accordance with the GE QA program, PO requirements and the Marvin Engineering Corporation QA Manual No. 7 dated August 1, 1977, inclusive of Supplements dated February 24, 1979. GE stated further that full time GE QA inspectors in residence at the Marvin plant reviewed all documentation associated with the thermal sleeve and witnessed key points during its manufacture. Following receipt of June 19, 1980, letter from GE, the licensee completed final receipt inspection on July 3, 1980, and the thermal sleeve was removed from a QC Hold status.

The inspector noted that the thermal sleeve was still in storage in the South warehouse on August 27, 1980. The inspector also noted that the thermal sleeve was receipt inspected at VY on October 3, 1979, which was two weeks after the NRC QA inspection at Marvin Engineering Corporation, in which 27 deviations from QA codes, standards and requirements (involving material identification and control, process control, welding and NDE) were identified. Finally, the inspector noted that the licensee bulletin response did not address Item 3 of the subject bulletin, which required that information be provided on the component suppliers QA/QC program in effect at the time the component was purchased, with sufficient basis provided to judge the adequacy of the component integrity.

The inspector's concerns were discussed with the licensee. The inspector stated that if the thermal sleeve may eventually be used, then the licensee must address the questions of Item 3 in IEB 80-02. The licensee stated that he still has no plans to use the thermal sleeve, but that its eventual use could not be ruled out. The licensee stated that the thermal sleeve will be returned to a QC Hold status pending either a complete QA review of the components manufacture or a complete NDE on all welds. Final disposition of the feedwater sparger thermal sleeve will be followed by the inspector on a subsequent inspection (IFI 50-271/80-13-03).

9. Surveillance Observation

The inspector witnessed the performance of surveillance testing of selected components to verify that the surveillance test procedure was properly approved and in use; test instrumentation required by the procedure was calibrated and in use; technical specifications were satisfied prior to removal of the system from service; test was performed by qualified personnel; the procedure was adequately detailed to assure performance of a satisfactory surveillance; and, test results satisfied the procedural acceptance criteria, or were properly dispositioned. The inspector witnessed the performance of:

- Residual Heat Removal (RHR) and RHR Service Water (RHRSW) surveillance per OP 4124, Rev. 12, resulting in verification of backflow thru RHRSW "D" discharge check valve (V70-38B) when RHRSW "E" pump was run. The licensee subsequently repaired subject valve by replacing internals and reperformed surveillance test satisfactorily.

The inspector reviewed licensee records of the following surveillance tests to verify procedures are being followed; testing was performed within the approved schedule; and test results satisfied the procedural acceptance criteria, or were properly dispositioned.

- Standby Liquid Control (SLC) monthly pump operability surveillance per OP 4114, Rev. 11, for period of April thru August, 1980.
- Standby Liquid Control (SLC) quarterly verification of boron tank concentration per OP 4114, Rev. 11, for July 25, 1980.

- Reactor Core Isolation Cooling (RCIC), monthly pump operability surveillance per OP 4121, Rev. 12, for period of January 29 thru August 7, 1980, and Motor operated valve operability surveillance for July 8, 1980.
- ECCS Integrated Auto Initiation Test, refueling surveillance per OP 4100, dated October 25, 1979.

10. Response to Plant Events

a. Strike:

At 6:00 A.M., September 8, 1980, a picket line was established at the plant entrance by the International Brotherhood of Electrical Workers (IBEW) Local 421 in protest over construction practices at the Vermont Yankee site and other power plant sites. VY plant personnel, represented by the IBEW local 300 union, honored the picket line established by Local 421 and did not report for work. Included in the membership of the union were licensed reactor operators. Plant operations during the strike were conducted by supervisory personnel. SRO - licensed operators from licensee management and supervisory staffs satisfied minimum shift crew composition as required by Technical Specifications.

The strike lasted for approximately eleven hours until the picket line was taken down under direction from the IBEW National Organization pending further negotiations to settle a jurisdictional dispute between IBEW member unions.

The inspector monitored plant conditions prior to the strike, turnover of plant operations to supervisory personnel, and plant conditions during the strike. Training records were reviewed by the inspector to verify that during the strike an individual qualified in radiation protection procedures was scheduled to be on site at all times as required by technical specifications.

No concerns relative to shift relief and reactor operations by supervisory personnel were identified. The inspector monitored followup of the strike plan, plant security, manning of the Security Force, and communications.

11. Observations of Physical Security

The inspector made observations, witnessed and/or verified during regular and offshift hours that selected aspects of plant physical security were in accordance with regulatory requirements, the physical security plan and approved procedures.

a. Physical Protection Security Organization

- observations indicated that a full time member of the security organization with authority to direct physical security actions was present as required.
- manning of all shifts on various days was observed to be as required.

b. Access Control

Observations of the following items were made:

- identification, authorization and badging
- access control searches, including the use of compensatory measures during periods when equipment was inoperable
- escorting.

c. Physical Barriers

- selected barriers in the protected area and vital area were observed and random monitoring of isolation zones was performed. Observation of vehicle searches were made.
- alternations to the gatehouse #2 structure and established compensatory controls were monitored. The inspectors observed the transition during the period revised gatehouse #2 procedures were implemented for entry to and exit from the vital area, including revised traffic flow patterns and utilization of additional monitoring equipment.

No items of noncompliance were identified.

12. Plant Maintenance, Modifications and Refueling Preparationsa. Torus Draining to Support Modifications During Refueling

The inspector interviewed licensee personnel, reviewed plant procedures and reviewed tank liquid storage capacities to ascertain licensee plans for draining the Mark I torus during the upcoming refueling outage, and determine whether liquid discharges to the environment would be required. The licensee has anticipated the need to transfer about 525,000 gallons of water from the torus through the SFP demineralizers to the CST, Reactor Cavity and condenser hot well, as needed. The transfer operations can be accomplished using procedure OP 2124, Rev. 13, RHR System, as well as an additional procedure presently in preparation that will use a portable demineralizer system. The inspector had no further comment on this item at the present time.

No items of noncompliance were identified.

b. Fuel Handling Activities

The inspector witnessed new fuel handling activities in progress on September 2 and 3, 1980. During this period, the licensee was transferring new fuel from the new fuel storage vault to the spent fuel pool. The activities were reviewed to verify that:

- fuel handling activities were performed in compliance with the requirements of OP 1401, Rev. 8, New Fuel Inspection and Channeling, including a verification that procedural prerequisites and precautions were satisfied;
- licensed operators and qualified individuals were present to work the refuel bridge and direct fuel move activities;
- health physics coverage was provided in accordance with Standard RWP 00809, and activities were accomplished in accordance with the RWP;
- the refueling status board was maintained up to date for each fuel move;
- fuel accountability forms were maintained up to date for each fuel move per SNM transfer form VYOPF 0400.02, Rev. 16; and,
- load testing of the RB 140 ton crane was completed.

The inspector had no comments in this area, except as noted below:

-- Crane Testing

The inspector witnessed load testing of the RB 140 ton crane on September 3, 1980. The initial test was conducted following a modification to install a micro drive motor for slow speed operation. The initial test was unsuccessful due to a failure of the motor drive brake to release when the motor attempted to drive. The licensee investigated the problem and corrected the brake solenoid wiring installation. The load test was then completed successfully. The inspector had no further comment on this item.

No items of noncompliance were identified.

-- RB Air Sampling

During review of health physics controls for fuel move activities, the inspector noted a low volume air sampler (BANTAM S/N 03-71-011, VY 338) in operation in the vicinity of the spent fuel pool per RWP 00809 requirements. The inspector noted on the calibration sticker affixed to the sampler that the unit's calibration due date had passed, but that it was still within 25% of the required calibration frequency. This item was brought to the licensee's attention and actions were taken immediately to replace the air sampler with one that had been recently calibrated prior to resumption of work in the spent fuel pool area. The inspector noted through discussions with licensee personnel that measured RB air activity was on the order of 6.0×10^{-10} $\mu\text{Ci/cc}$ with a flow correction factor for the first sampler of 0.81 prior to its calibration. The corrected flow correction factor following calibration was 0.75, which resulted in an increase in the measured air activity values. However, the corrected air activity values were still well below MPC limits.

The inspector had no further comments on this item.

13. T-Quencher Weld Repair

The inspector noted during inspection tours and discussions with licensee personnel on September 2, 1980, that a weld repair program had been established for the T-Quenchers that will be used during the 1980 refueling outage. There are a total of four T-Quenchers that will replace the ramshead assemblies on the discharge of the safety relief valve inside the torus. The following information which documented problem identification, repair and history was reviewed:

-- Radiographic Test (RT) results by a Level II examiner from Peabody Testing, Inc.

- Repair Procedure for Main Steam Relief Valve Tee Quenchers, dated August 29, 1980
- ENDCR 80-11, Torus Modifications Resulting from Mark I Containment Long Term Program, August 28, 1980
- Specifications for Modification of the VYNPS Torus, VY-80-11-S1
- Yankee Operational Quality Assurance Plan (YOQAP)
- Yankee Atomic General Quality Specifications (YA-GEN-1)
- VY Purchase Order No. 12124 dated February 5, 1979 and Supplement 1 dated May 15, 1979
- GE Product Quality Certification No. LL 502, dated August 17, 1979
- GE Proposal and Quotation No. 416-4230-HB1, Dated March 14, 1978
- VY APF 0801.01, Rev. 8, Receipt Inspection Checklist dated January 14, 1980

One item in the Mark I Containment Long Term Program Modification package involves the replacement of ramshead assemblies on the discharge of the safety relief valves with T-Quenchers. The T-Quenchers were demonstrated during development testing to provide acceptable loads to torus internal components during SRV operation. The March 14, 1978, GE proposal and engineering specification for the T-Quenchers recommended that the components be supplied, fabricated, examined, and tested pursuant to the quality assurance requirements of ASME Code Section III, Subsection ND as safety class 3 components. VY purchase order 12124 dated February 5, 1979, requisitioned the T-Quenchers in accordance with the GE proposal.

Subsequent in-house review of the modification by the licensee and the Yankee Atomic Nuclear Service Division concluded that the T-Quenchers should more properly be designated as safety class 2, in that the T-Quenchers and attached piping below the drywell/torus vent lines are pressure retaining boundaries whose integrity must be assured to protect the torus and its pressure suppression capability. The concern raised by the licensee involved a postulated break in the T-Quencher/piping assembly at a location that would result in venting the SRV discharge above the torus water level and in the torus air space. Additional licensee review concluded that under the provisions of YOQAP and YA-GEN-1 the components could be procured under ASME III subsection ND and then upgraded to subsection NC classification after receipt on site in that the only difference in the classifications by the YOQAP requirements was one of QC (nondestructive examination).

The four T-Quenchers were purchased under ASME Section III, Subsection ND through GE. The components were manufactured by the Pipe Fabrication Division of Dravo Corporation, with material supplied by Youngstown Welding and Engineering Company. GE PQC LL 502 dated August 17, 1979 certified that the components were provided in accordance with PO 12124 requirements, with liquid penetrant and mag. particle examination results acceptable. Initial receipt inspection at the VY site occurred on August 20, 1979, and final acceptance of the components occurred on January 14, 1980. The T-Quencher welds were radiographed in August, 1980, with the following findings:

<u>Item</u>	<u>Finding</u>
Piece No. 4, Weld 4	lack of weld penetration
Piece No. 4, Weld 3	cracks on root pass
Piece No. 4, Weld 1	slag, high density inclusions
Piece No. 2, Weld 4	lack of fusion, penetration
Piece No. 1, Weld 3	cracks on root pass

Based on the above findings, the T-Quenchers were put on QC hold and a weld procedure was developed to effect repairs. Repair work is scheduled to be completed by September 15, 1980.

The inspector had no further questions regarding this item at the present. However, the item is considered unresolved pending completion of the following: (i) further NRC staff review of the engineering specifications, component classification and QA requirements; and, (ii) licensee actions to complete component repair and nondestructive examination, and subsequent review by the NRC (UNR 50-271/80-13-04).

14. Plant Computer Calculation of Core Design MTPF

Information received at the VY Resident Office on August 20, 1980, indicated a potential generic problem had been identified at BWR facilities, which concerned the calculation of the core design maximum total peaking factor (DMTPF) by the plant computer. It had been determined at another facility that the computer calculations erroneously assumed a standard fuel length of 12 feet for all fuel types, whereas in actuality, fuel lengths varied according to fuel type from 12 feet to 12.5 feet. Use of the wrong fuel lengths in the plant computer calculations resulted in a nonconservative calculation of total peaking factor and a nonconservative APRM gain setting.

Information available to the inspector was provided to the plant Reactor Engineer and during the ensuing discussions the following was determined:

- a new VY computer software package was undergoing proof testing as of August 20, 1980, which was scheduled to be completed by August 27, 1980. The new software incorporated the appropriate fuel lengths in the total peaking factor calculations. (Conversion to the new software package subsequently occurred on August 29, 1980).
- as of August 20, 1980 the VY core was operating at less than rated thermal power (90%) due to end of cycle coastdown and thus, margins to core thermal limits were sufficiently large to preclude concerns that the limits would be exceeded through use of the existing software.
- a comparison of calculated design MTPF using both old and new software showed insignificant (third decimal place) differences in the calculated values.

Based on the above, the inspector concluded that continued operation under the existing programs and procedures was acceptable, but that the matter should be further evaluated by the licensee to determine what further actions/changes, if any, would be warranted. This item will be followed on subsequent inspections (IFI 50-271/80-13-05).

15. Unresolved Items

Unresolved items are items about which more information is required to ascertain whether they are acceptable items, items of noncompliance, or deviations. Unresolved items are discussed in Details 3.d. and 13 of this inspection report.

16. Management Meetings

During the period of the inspection, licensee management was periodically notified of the preliminary findings by the resident inspectors. A summary was also provided at the conclusion of the inspection and prior to report issuance. Additionally, the resident inspectors attended the entrance and exit interviews on August 12 and August 15, 1980, respectively, conducted by a region-based inspector in regard to an inspection of the licensee's maintenance program.