U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 50-271/89-03

Docket No. 50-271

License No. DPR-28 Priority ___--___ Category C

Licensee: Vermont Yankee Nuclear Power Corporation

Facility Name: Vermont Yankee Nuclear Power Station

Inspection At: Vernon, Vermont

Inspection Conducted: March 20-24, 1989

Inspectors: Robert A. McBrearty 4/13/89
R. A. McBrearty, Reactor Engineer date

Approved by: S. Chaudhary 4/13/89
S. K. Chaudhary, Chief, Materials and Processes Section, EB, DRS date

Inspection Summary: Inspection on March 20-24, 1989, (Report No. 50-271/89-03)

Areas Inspected: A routine, unannounced inspection was conducted of the licensee's inservice inspection activities to ascertain that the activites were conducted in accordance with applicable ASME Code and regulatory requirements. In addition, the licensee's action on previous inspection findings and its response to Generic Letter 88-01 was inspected.

Results: The inspector concluded, based on the areas inspected, that the licensee's activities complied with applicable requirements. The licensee's response to GL 88-01 was timely and addressed the areas required by the Generic Letter.

## DETAILS

### 1.0 Persons Contacted

Vermont Yankee Nuclear power Corporation

J. W. DeVincentis, Mechanical Engineer - Engineering Support
D. Dyer, Quality Assurance Engineer
*D. C. Girroir, Senior Quality Assurance Engineer - Engineering Support
*R. P. Grippardi, Quality Assurance Supervisor
D. J. Legere, Senior Engineer - Maintenance
*M. Metell, Engineering Support Supervisor
*R. D. Pagodin, Technical Services Superintendent
*J. P. Pelletier, Plant Manager
D. L. Phillips, Senior Electrical Engineer
*W. L. Wittmer, Construction Superintendent

EBASCO Services, Inc.

C. E. Pattillo, NDE Level III

U.S. Nuclear Regulatory Commission

*Geoffrey E. Grant, Senior Resident Inspector

*Denotes those present at exit interview.

### 2.0 Licensee Action on Previous Inspection Findings (92701, 92702)

(Closed) Unresolved Item (50-271/86-13-01) Condensate Storage Tank Repair

Thickness measurements of the tank floor were made in 1987 and compared to the 1986 inspection results. The tank floor thickness remained essentially unchanged indicating that the corrosion has been controlled. The licensee has commited to repeat the inspection during the 1990 refueling outage.

Based on the inspector's review of 1986 and 1987 inspection results and the licensee's commitment to reinspect in 1990 this item is closed.

(Closed) Unresolved Item (50-271/86-02-01) Thermal Sleeve NDE

The solvent removable, visible dye method was used to perform the surface inspection of thermal sleeves after evaluation by the licensee of the available alternative methods. The use of a borescope to perform the inspection and evaluate the results was chosen because the licensee determined that it provided better results than could be attained by using inspection mirrors. A right angle self illuminating magnifying borescope was used, and the examiners were given special training in its operation and use.

The inspector reviewed the licensee's memorandum dated June 2, 1986 which documented the licensee's Level III evaluation of the available examination techniques and the use of the borescope. Based on review of the evaluation and discussions with the Level III this item is closed.

(Closed) Open Item (50-271/85-41-01) Review Contractor Performance of Activities Covered in Pipe Replacement Work Packages

NRC inspections performed during the pipe replacement project and the results of a review by the licensee's QA Supervisor indicate that contractor activities were conducted in accordance with applicable requirements and procedures.

Based on the above this item is closed.

(Closed) Violation (50-271/86-12-02) Failure to Document Visual Weld Examination On Recirculation Piping Whip Restraints No. R6A and R9B

The inspector reviewed Morrison Knudsen and Vermont Yankee Nonconformance Reports No. 237 and 86-82, respectively. In addition, Visual Weld Examination Report Numbers 5080-1-2-C-X, 5080-13-1-C-X and 5080-15-1-C-X were reviewed and found to verify that the commitment to reinspect appropriate items was completed and the reinspections were properly documented. The NCRs were closed out based on completion of the documented corrective action.

Based on the above this item is closed.

3.0 Inservice Inspection Program (73051)

Inservice inspection is mandated by the ASME B&PV Code, Section XI, and the code edition applicable to a specific facility is identified by 10 CFR 50.55a(g) based upon the issue date of the construction permit for the plant. The Vermont Yankee facility is committed to the 1980 Edition of Section XI through the Winter 1980 Addenda. Section XI requires that the 40 year life of each facility be divided into four 10-year inspection intervals which, in turn, are divided into three equal 40 month periods. The current refueling outage (XIV) is the last outage of the 2nd period of the 2nd inspection interval.

Section XI identifies the components and welds to be included in the facility's ISI program which must be completed within each 10 year interval. The Code additionally mandates the minimum and maximum percentage of the program which must be completed during each period of an interval.

The licensee complies with the code requirements with the aid of a computer data management program which is used to establish examination schedules for outages, periods, and inspection intervals. The ISI program for the 2nd, 3rd and 4th inspection intervals is entered in the data base which identifies the code item and category, examination method, and the applicable calibration block for ultrasonic examinations.

The system has been developed by the licensee and permits continuous status tracking of the ISI program.

No violations were identified.

4.0 Nondestructive Examination Implementing Procedures (73052)

The following procedures were selected for inspection to determine compliance with the ASME Code and regulatory requirements, and for technical adequacy:

- Procedure No. YA-ISI-1, Revision 11, "Inservice Inspection Requirements for Yankee Atomic Electric Company Plant"
- Procedure No. YA-ISI-3, Revision 1, "Inservice Inspection Program Requirements for Vermont Yankee Nuclear Power Station:
- Procedure No. YA-PE-2, Revision 6, "Liquid Penetrant Examination"
- Procedure No. YA-UT-1, Revision 5, "Ultrasonic Examination - General Requirements"
- Procedure No. YA-UT-10, Revision 7, "Ultrasonic Examination of Piping Austenitic Welds"
- Procedure No. YA-UT-85-1-1, Revision 0, "Ultrasonic Examination of Piping Dissimilar Metal Welds For Use at Vermont Yankee"
- Procedure No. YA-DCP-1, Revision 2, "Inservice Inspection Data Control Procedure"

Procedure YA-ISI-1 and YA-ISI-3 delineate responsibilities of licensee and vendor personnel regarding the reporting and evaluation of examination results and provide a time frame which must be observed by the vendor for submittal of data to the licensee. The procedure for control of ISI data provides for the use of a data log sheet for tracking examination status.

The inspector determined that the aforementioned procedures were in compliance with the applicable ASME Code and regulatory requirements. The procedures were approved by the licensee for use at Vermont Yankee, and were determined to be technically adequate for their intended use.

No violations were identified.

5.0 Observations of Examinations (73753)

The licensee performed visual inspections of feedwater spargers, core spray spargers, jet pump mixer inlet and shroud access hole cover welds using an underwater remote video system. The results were recorded and documented on video tape.

Portions of each inspection were selected for observations to ascertain compliance with code and regulatory requirements and to assess the quality of the tapes.

The video tapes related to the inspection of the core spray spargers and associated piping clearly showed the 0.001" diameter calibration wire as required by NUREG 0619, and the remaining tapes displayed a 1/32" wide line as required by the licensee's examination procedure. The calibration demonstrated the minimum flaw size that could be detected and the 1/32" line was used to demonstrate that the lighting was adequate to perform the visual inspection.

The inspector found that the inspections were performed by qualified personnel and that the video tapes were of good quality and clarity.

No violations were identified.

## 6.0 Engineering Support

The Engineering Support Department, of which the ISI Coordinator at Vermont Yankee is a member, becomes involved in the evaluation and disposition of ISI findings. An engineering notification/request for evaluation is submitted by the ISI Coordinator to the cognizant engineer via a memorandum. The engineering review/disposition is performed and the results are submitted to the ISI Coordinator. The items are discussed at daily outage meetings where the appropriate level of management is kept apprised of the outstanding items.

The inspector determined that, although it is not documented, there is a system at Vermont Yankee which provides for engineering evaluation and disposition of ISI finding, and for the notification of the proper level of management. He determined that appropriate personnel were aware of the method by which ISI findings were evaluated and dispositioned, and the proper level of management was kept informed of outstanding items.

No violations were identified.

## 7.0 Quality Assurance Involvement In Inservice Inspection Activities (73051)

Licensee vendor audit 88-070 and QA surveillance report 89-29 were selected for inspection to ascertain that the licensee's ISI vendor, EBASCO Services, Inc., was properly included on the approved vendors list, and that the licensee's QA group was involved in vendor ISI activities at Vermont Yankee.

Audit No. 88-070 was performed at the EBASCO facilities at Port Kearny, New Jersey and Lyndhurst, New Jersey on September 20-21, 1988 to assess EBASCO's capability to perform inservice inspection at Vermont Yankee. The audit found that EBASCO used vendors that were not included on the EBASCO approved vendors list. Corrective action was initiated by EBASCO,

and was reviewed and found acceptable by the licensee before the findings were closed out. Based on the audit results, EBASCO was placed on the licensee's approved vendors list.

Surveillance No. 89-29, which was performed during the period from February 6, 1989 through March 20, 1989, included observations of ultrasonic examinations and hydrostatic tests which were found to comply with applicable procedures. Additionally, examination personnel were found to be certified to the appropriate level of qualification for the function they performed.

No violations were identified.

8.0 Licensee Response to Generic Letter (GL) 88-01 "NRC Position on IGSCC in BWR Austenitic Stainless Steel Piping" (92703)

This Generic Letter applies to all BWR piping made of austenitic stainless steel that is four inches or larger in nominal diameter, and contains reactor coolant at a temperature above 200°F during power operation, regardless of Code classification. It also applies to reactor vessel attachments and appurtenances such as jet pump instrumentation penetration assemblies and head spray and vent components. Licensees are requested to respond to the GL within 180 days of the receipt of the letter. The GL provides a list of specific items which should be included by licensees to constitute an acceptable response to the GL.

The technical bases for these positions are detailed in NUREG-0313, Revision 2, "Technical Report on Material Selection and Guidelines for BWR Coolant Pressure Boundary Piping." NUREG-0313, Revision 2 describes the technical bases for the staff positions on materials, processes, and primary coolant chemistry to minimize and control IGSCC problems. Inspection schedules and inspection sample sizes are based on the susceptibility of weldments to initiation and propagation of IGSCC. Inspection schedules are comparable to those specified in Section XI of the ASME B&PV Code in cases where the piping material is IGSCC resistant.

The licensee's response to the GL dated July 27, 1988, was reviewed by the inspector to ascertain that applicable systems were identified, welds were categorized, and inspection schedules were established in accordance with Table 1 of NUREG-0313, Revision 2.

As a result of the pipe replacement project at Vermont Yankee, all piping systems subject to Generic Letter 88-01 are classified as Category A with the exception of six specific items which are classified as Category D. The licensee identified the six items and committed to examine them during the 1989 refueling outage.

The inspector reviewed ultrasonic examination data for the six category D items, two core spray Inconel 600 safe ends which contain a non-welded crevice, two core spray safe end to nozzle welds which are weld overlay repaired, and two core spray low carbon safe end to pipe welds (Inconel 600 welded to type 316 low carbon stainless steel), to ascertain that the licensee's commitment was met.

The inspector determined that the examinations were performed and the results were evaluated by examiners who were listed on the latest EPRI register of IGSCC qualified personnel. In addition, the licensee's Level III verified, by reviewing the EPRI performance documentation summary sheet, that the examination procedure used at Vermont Yankee was equal to the procedure which was used at EPRI for qualification.

The inspector found that the licensee responded to the Generic Letter within the allotted time and that the response addressed the areas listed by the letter.

No violations were identified.

9.0 Exit Meeting

The inspector met with licensee representatives (denoted in paragraph 1) at the conclusion of the inspection on March 24, 1989. The inspector summarized the scope and findings of the inspection.

At no time during the inspection was written material provided by the inspector to the licensee. The licensee did not indicate that proprietary information was involved within the scope of this inspection.