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MEMORANDUM FOR: Phillip F. McKee, Chief
Section 1, Operating Reactor Programs Branch
Division of Quality Assurance, Safeguards,
and Inspection Programs, IE

FROM: Stephen Goldberg
Section 1, Operating Reactor Programs Branch
Division of Quality Assurance, Safeguards,
and Inspection Programs, IE

SUBJECT: SALIENT CONCLUSIONS FROM THE VERMONT YANKEE (VY)
QA INSPECTION

Enclosed for your information is a copy of the VY QA Inspection conducted by Region I (G. Napuda). I have summarized below the important conclusions, which are relevant to our program development efforts.

- VY and Yankee Atomic (the corporate engineering staff) do not use the term "important-to-safety" as part of their QA System. Further, there is no graded approach or any other hierarchal approach to QA, i.e., management controls activities affecting systems, structures, and components to an extent that is consistent with their importance to safety. It would be a major undertaking for the Yankee organizations to revise its policies, practices and procedures to cover the "important-to-safety" classification area properly.

- VY uses ANS-22, "Nuclear Safety Criteria for the Design of Stationary Boiling Water Reactor Plants (1973)" as their basis for determining what are safety-related systems. There are many examples for which the systems listed in ANS-22 deviate from R.G. 1.26, R.G. 1.29, and the Denton definition of what is safety-related (ex. steam lines to turbine beyond the main steam line isolation valves and the condensate system). The Q-listed systems are specifically described in the Yankee Atomic QA topical report but not in the updated FSAR.

- VY and Yankee Atomic use one-line, controlled drawings to indicate which components within safety-related systems are considered to be: safety class* one, two or three; Class 1E; and non-safety-related. The bases for these safety classifications are the IEEE categories for electrical equipment and ANS-22 for the determination of safety class. Occasionally, Yankee Atomic is requested by VY to reevaluate the classification of components, particularly, those at the safety-related/non-safety-related interface.

*Note all safety class components are safety-related and would require similar QA controls.

- The inspectors identified the following problems at VY and Yankee Atomic:

  Violations

  1) Insufficient number of independent inspections.
  2) Lack of QA/QC surveillances covering important, safety-related plant activities.
  3) Failure to provide accurate and complete information on MRs covering safety-related maintenance activities.

  Unresolved Items Concerning Safety Classification

  1) No system is in place in the procurement dept. to change or upgrade safety class of replacements or spares.
  2) Independent reviews are not performed concerning any procurement orders that were originally classified as non-safety-related (i.e., once off-the-shelf always off-the-shelf).
  3) Procedures do not exist for corporate QA and Engineering to formally review the classification of non-safety-related design modifications.
  4) No escalation procedures exist to handle unresolved issues between the engineering staff at VY and Yankee Atomic concerning safety classification.

- VY's Q-list was simple and was used by all levels of plant staff. VY had an adequate distribution system of Q-lists; had adequate instructions, procedures and directives for the use of the Q-list; had adequate training in the use of the Q-list; and had adequate audit controls for Q-listed items.

I plan to provide you a complete evaluation of the QA modules within the IE 2513-15 programs and of the companion licensing requirements, following completion of the QA overview project.

Stephen M. Goldberg
Section 1, Operating Reactor Programs Branch
Division of Quality Assurance, Safeguards,
and Inspection Programs, IE

Enclosure: VY QA Inspection Report

cc: J. Milhoan, IE
J. Partlow, IE
J. Taylor, IE
G. Napuda

Distribution: IE Files/IE Reading/ORPB Reading/DQASIP Reading/S. L. Golberg/

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OFFICE: ORPB:DQASIP:IE
NAME: S. L. Goldberg/tg
DATE: 9/15/83

Docket No. 50-271

Vermont Yankee Nuclear Power Corporation
ATTN: Mr. Warren P. Murphy
Vice President and Manager
of Operations
RD 5, Box 169
Ferry Road
Brattleboro, Vermont 05301

Gentlemen:

Subject: Inspection No. 50-271/83-22

This refers to the routine safety inspection conducted by Mr. E. Shaub of this office on July 11-15 and 18-20, 1983 at the Vermont Yankee Nuclear Power Station, your Brattleboro, Vt. corporate office and the Yankee Atomic Electric Company, Framingham, Mass of activities authorized by NRC License No. DPR-28 and to the discussions of our findings held by Mr. Shaub on July 15, 1983 with Messrs R. Burke and D. Reid and other members of your staff and by Mr. G. Napuda on July 20, 1983 with Messrs. D. Hunter and A. Shepard and other members of your staff at the conclusion of the inspection.

Areas examined during this inspection are described in the NRC Region I 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.

Based on the results of this inspection, it appears that certain of your activities were not conducted in full compliance with NRC requirements, as set forth in the Notice of Violation, enclosed herewith as Appendix A. These violations have been categorized by severity level in accordance with the NRC Enforcement policy (10 CFR 2, Appendix C) published in the Federal Register Notice (47 FR 9987) dated March 9, 1982. You are required to respond to this letter and in preparing your response, you should follow the instructions in Appendix A.

We have concluded based on our analysis of the identified items of noncompliance and unresolved items, detailed in the enclosed report, that portions of the Operational Quality Assurance (OQA) Program have not been adequately implemented. These areas include: (1) failure to provide accurate and complete information for safety-related maintenance activities; (2) lack of QA/QC surveillances for safety-related plant activities; and, (3) insufficient number of independent inspections. We are concerned that the Yankee Atomic Electric Company OQA Department staffing level is inadequate to effectively implement all the quality assurance (QA) functions of inspection, surveillance and audit of safety-related activities. Please address these issues in your response to this letter and specifically state the corrective actions you are taking, the proposed schedule for these actions, and the measures taken in the interim to assure the OQA Program implementation meets your commitments and will be effective, i.e. meets the intent of 10 CFR 50, Appendix B.

In accordance with 10 CFR 2.790(a), a copy of this letter and the enclosure will be placed in the NRC Public Document Room unless you notify this office, by telephone, within ten days of the date of this letter and submit written application to withhold information contained therein within thirty days of the date of this letter. Such application must be consistent with the requirements of 2.790(b)(1). The telephone notification of your intent to request withholding, or any request for an extension of the 10-day period which you believe necessary, should be made to the Supervisor, Files, Mail and Records, USNRC Region I, at (215) 337-5223.

The responses directed by this letter and the accompanying Notice are not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction Act of 1980, PL 96-511.

Your cooperation with us in this matter is appreciated.

Sincerely,

Thomas T. Martin, Director
Division of Engineering and
Technical Programs

Enclosures:
1. Appendix A, Notice of Violation
2. NRC Region I Inspection Report Number 50-271/83-22

cc w/encl:
Mr. J. B. Sinclair, Licensing Engineer
Mr. W. F. Conway, President and Chief Executive Officer
Mr. J. P. Pelletier, Plant Manager
Mr. L. H. Heider, Vice President
Public Document Room (PDR)
Local Public Document Room (LPDR)
Nuclear Safety Information Center (NSIC)
NRC Resident Inspector
State of New Hampshire
State of Vermont

,blind 2 4
bcc w/encl:
Region I Docket Room (with concurrences)
Senior Operations Officer (w/o encls)
DPRP Section Chief
J. Taylor, IE
,end

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RI:DETP	RI:DETP	RI:DETP	RI:DETP	RI:DPRP
Shaub/pja	Napuda	Caphton	Ebneter	Gallo
9/13/83				

,end

APPENDIX A

NOTICE OF VIOLATION

Vermont Yankee Nuclear Power Corporation
Vermont Yankee Nuclear Power Station

Docket No. 50-271
License No. DPR-28

As a result of the inspection conducted July 11-15, and 18-20, 1983, and in accordance with the NRC Enforcement Policy (10 CFR 2, Appendix C), published in the Federal Register on March 9, 1982 (47FR9987), the following violations were identified:

A. 10 CFR 50, Appendix B, Criterion X; the NRC-approved Yankee Atomic Electric Company Operational Quality Assurance Topical Report (YOQAP-1-A); and, ANSI N18.7-1976, "Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants," require the following.

-- Examinations, measurements, or tests for each operation where necessary to assure quality

-- Inspection by other than those directly responsible for doing or supervising the work

-- Establishment and implementation of procedures providing guidelines to determine the need for inspections, requirements and acceptance limits, and inspection responsibilities

Contrary to the above, inspections of more important maintenance activities were not performed routinely; independence of inspection personnel was not maintained or determinable; and implementing procedures did not provide sufficient guidance regarding accomplishment of inspections. The following examples are provided.

-- Of approximately 75 Maintenance Requests (MRs) sampled for work that was accomplished between January 1, 1983 and June 1, 1983, only two MR's indicated inspection by QA/QC and only two other MRs indicated independent inspection of the work performed (MRs 83-0257, 0816, 0115 and 0162 respectively).

-- The inspections accomplished on MRs 83-0921 and 1068, were performed by first line supervisors during the 1983 outage.

-- Procedure A.P. 0021 did not provide sufficient guidance to personnel for determining the need, requirements, acceptance criteria, and responsibilities for inspections; this situation resulted in inadequate inspection effort and confusion among personnel, since workers also signed as the inspectors on MRs 83-0027 and 0487.

This is a Severity Level IV Violation (Supplement I)

B. 10CFR50, Appendix B, Criterion II, Quality Assurance Program, requires that the QA Program be established, documented by written policies, procedures or instructions to provide control over activities affecting the quality of items consistent with their importance to safety; and that these written controls be carried out throughout plant life. The NRC approved Yankee Atomic Electric Company Operational Quality Assurance Topical Report (YOQAP-1-A), Rev. 11, requires that the Yankee Atomic Electric Company (YAEC). Nuclear Services Division Operational Quality Assurance (OQA) Department conducts QA surveillance of plant activities including instructions, procedures, and drawings; purchased material and equipment; inspection; test control; inspection, test and operating status of items; and nonconforming items.

Contrary to the above, as of July 15, 1983, OQA had not established specific written procedures or instructions, nor did OQA conduct surveillances in the following areas.

-- Material and/or services control

-- Inspection activities and personnel

-- Control of the test program

-- Inspection, test and operational status of components and systems and their repair

-- Control, evaluation, and disposition of nonconforming material, parts and components, and repetitive nonconforming materials

This is a Severity Level IV Violation (Supplement I).

C. 10CFR50, Appendix B, Criterion V requires that activities affecting quality be prescribed by procedures and implemented thereto. The NRC approved Yankee Atomic Electric Company Operational Quality Assurance Topical Report (YOQAP-1-A) states that the plant is responsible for the preparation, approval and implementation of procedures associated with plant activities. Approved plant procedure A.P. 0021, Maintenance Requests, Revision 11, requires that any inspections or tests including surveillance test procedure numbers, be defined and documented in the appropriate Maintenance Request blanks. It also states that the Material Issue Slip numbers be likewise recorded for any parts used on safety-related equipment or systems.

Contrary to the above, as of July 15, 1983, the following Maintenance Requests (MRs) did not provide consistent, accurate and complete information on the maintenance requests involving safety-related maintenance. The following examples are provided.

-- MR 83-0527, Reactor Circuit Breaker Failure. The words "operational" were entered into the operational testing blank and "breaker functions properly" was entered into the acceptance criteria blank.

-- MR 83-0999, Loss of SRM Position Indications. The words "operational" was entered into the operational testing blank and "verify proper setpoint" was entered into the acceptance criteria blank.

-- MR 83-1068, Torus Level Indicators Differing by 25%. The words "operational check" were entered into the operational testing blank and "proper operation" were entered into the acceptance criteria blank.

-- MR 83-0162, Replace Pressure Switch Isolation Valve. The word "shop stock" was entered into the parts used/material issue slip number blank.

-- MR 83-0921, "A" Diesel Room PCV-73-A Manual Override Stem Broken. Although the repairs performed blank states the valve stem was replaced the letters "N/A" were entered into the parts used/material issue slip number blank.

This is a Severity Level IV Violation (Supplement I).

Pursuant to the provisions of 10 CFR 2.201, Vermont Yankee Nuclear Corporation is hereby required to submit to this office within thirty days of the date of the letter which transmitted this Notice, a written statement or explanation in reply, including: (1) the corrective steps which have been taken and the results achieved; (2) corrective steps which will be taken to avoid further violations; and (3) the date when full compliance will be achieved. Where good cause is shown, consideration will be given to extending this response time.

U. S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 50-271/83-22

Docket No. 50-271

License No. DPR-28 Priority -- Category C

Licensee: Vermont Yankee Nuclear Power Corporation

RD5 Box 169

Ferry Road, Brattleboro, Vermont 05301

Facility Name: Vermont Yankee

Inspection At: Vernon and Brattleboro, Vermont and Framingham, Massachussetts

Inspection Conducted: July 11-15 and 18-20, 1983

Inspectors:

E. Shaub, Reactor Engineer — date

G. Napuda, Lead Reactor Engineer — date

S. Goldberg, Operations Engineer, IE — date

Approved by:

D. Caphton, Chief, MPS, EPB — date

Inspection Summary: Inspection on July 11-15 and 18-20, 1983 (Report No. 50-271/83-22)
Area Inspected: Special announced inspection by two region-based engineers and one IE Headquarter-based engineer of the quality assurance program including administrative controls for procurement; administrative controls for corrective and preventive maintenance; non-licensed technical training; and QA audits, surveillances and inspections. The inspection involved 10(hours onsite and 44 hours at the corporate offices by two regional-based engineers and one IE Headquarters engineer.

DETAILS

1. Persons Contacted

Vermont Yankee

L. Anson, Plant Training Supervisor
E. Bowles, Training Supervisor
F. Burger, Quality Assurance (QA) Coordinator
* R. Burke, Operations Support Manager
P. Donnelly, Instrument and Controls Supervisor
J. Edelhauser, Operations Engineer
G. Faulkner, Lead Plant Mechanic
R. Gianfrancesco, Maintenance Supervisor
G. Gilmore, Storekeeper
J. Golonka, Records Clerk
S. Jefferson, Operations Superintendent
G. LeClair, Shift Supervisor
***W. Limberger, QA Engineer
R. Lopriore, Senior Engineer, Maintenance
M. Metell, Senior Mechanical Engineer
* R. Pagodin, Engineering Support Supervisor
J. Pelletier, Plant Manager
C. Porrovecchio, Stores QA Technician
* R. Purinton, Stores and Purchasing Supervisor
* D. Reid, Technical Services Superintendent
D. Taylor, Assistant Maintenance Foreman
S. Vekasy, Senior Systems Engineer
R. Wanczyk, Senior Engineer, Operations
* W. Wittmer, Maintenance Superintendent

Yankee Atomic Energy Company

* L. Bozek, Senior Operational QA Engineer (onsite)
D. Dyer, Operational QA Engineer (onsite)
**D. Hansen, Principal Engineer
J. Haseltine, General Engineering Manager
**D. Hunter, Vice President, Operation Projects
J. Lance, Engineering Manager, Mechanical
**A. Kadak, Project Manager, Vermont Yankee
**L. Marsolais, Principal Engineer
**R. Martin, Senior Engineer
***D. Pike, Manager, Operational Quality Assurance
* L. Reed, Senior QA Engineer
**A. Shepard, Director of Quality Assurance
**R. Smith, Project Engineer, Vermont Yankee
**S. Urbanowski, Senior Engineer, Electrical

Mercury Corp. (Contractor)

J. Duguay, Construction Supervisor

NRC

* W. Raymond, Senior Resident Inspector

* attended exit meeting at site on July 15, 1983.
** attended exit meetings at Yankee Atomic Energy Co., Corporate Office, July 20, 1983
*** attended both exit meetings

The inspectors also interviewed other licensee personnel including technicians, craftsmen, and administrative personnel.

2. Maintenance Activities

2.1 Requirements/References

-- Technical Specification, Section 6, "Administrative Controls"

-- ANSI N18.7-1976, "Administrative Controls and Quality Assurance for the Operational Nuclear Power Plants"

-- Regulatory Guide 1.33-1978, "Quality Assurance Program Requirements"

-- ASME Boiler and Pressure Vessel Code, Section XI, Articles IWP-3000 and IWV-3000

2.2 Preventive Maintenance

2.2.1 Administrative Control for Preventive Maintenance

Administrative procedures were reviewed to verify conformance to the requirements listed in paragraph 2.1 and to assure that they include, as a minimum, the following controls.

-- Responsibility for the program

-- Schedules for preventive maintenance (PM)

-- Methods and responsibility for establishing PM frequencies

-- Review and documentation of completed, preventive maintenance activities

The following procedures were reviewed and discussed with applicable departmental supervision.

-- AP 0200, Maintenance Program, Revision 8, October 2, 1981

-- AP 0310, Safety-Related Instrument and Components Preventative and/or Corrective Maintenance, Revision 0, October 14, 1982

2.2.2 Program Review & Implementation

The inspector reviewed safety-related preventative maintenance procedures and associated data sheets to verify that the program had been implemented in accordance with applicable procedures detailed in paragraph 2.2.1. The following procedures were reviewed.

-- OP 5303, MSIV Pilot Valves (Numatics) Preventive Maintenance and Functional Test, Revision 6, July 6, 1982

-- OP 5304, Maintenance on GE Relays, Revision 2, January 20, 1983

-- OP 5305, Solenoid Valve Maintenance, Revision 4, July 6, 1982

-- OP 5323, Filters Preventive Maintenance, Revision 5, February 14, 1982

-- OP 5301, TIP System Preventive Maintenance, Revision 7, July 24, 1982

-- OP 5200, Safety System Rotating Equipment, Revision 5, December 9, 1982

-- OP 5201, Safety System Valves, Revision 5, May 1, 1982

-- OP 5220, Limitorque Operator Inspection, Revision 5, August 6, 1981

-- OP 5221, 480 VAC Ckt. BKRS, Inspection, Calibration and Testing, Revision 4, November 11, 1981

-- OP 5222 4kv VAC CKT BKRS Inspection, Calibration and Testing, Revision 5, September 30, 1982

The inspector reviewed data sheets for Limitorque valve operator inspections, 4kv and 480v breaker inspections and solenoid valve preventive maintenance, performed during the 1983 outage.

2.2.3 Findings

No violations were identified in the preventive maintenance program.

2.3 Corrective Maintenance

2.3.1 Corrective Maintenance Program and Implementation

The corrective maintenance program and its implementation were inspected for conformance to appropriate plant administrative procedures listed in paragraph 2.2.1. to verify the following.

-- Administrative controls for the program were established

-- Safety-related maintenance was performed by qualified individuals

-- Work classifications (safety vs. non-safety) were appropriate and supporting activities (procurement, testing, and inspection) were performed accordingly

-- documentation of maintenance activities was established

The inspector selectively sampled approximately 50 completed maintenance request to verify 1) proper equipment classification, 2) procurement of replacement parts, 3) post maintenance and operational testing and/or inspection and 4) adequate supervisory review. The maintenance activities selected were both routine (excluding valve packings) and non-routine maintenance and included some preventive maintenance performed via work requests.

2.3.2 Findings

The required operational testing and acceptance criteria, required prior to returning equipment to service, were not defined or specified on the following MRs: 83-0527, Reactor Circuit Breaker Failure; 83-0999, Loss of SRM Position Indications; and 83-1068, Torus Level Indicators Differing by 25%. Additionally, the Material Issue (MIs)

slip numbers for parts used during repairs were not documented on MRs 83-0921, "A" Diesel Room PCV-73-A Manual Override Stem Broken; and 83-0162, Replace Pressure Switch Isolation Valve.

The inspectors determined that the licensee failed to provide proper attention to detail with respect to information required on MRs. The questions raised by the lack of inaccurate or unclear information on several MRs were thoroughly followed up by the inspectors and no safety concerns were identified (see other sections of this report). This condition should have been identified and corrected during various levels of review by the licensee. The inspectors discussed this review issue with, and it was acknowledged by, licensee management.

The entering of information on MRs is contrary to the following:

-- 10 CFR 50, Appendix B, Criterion V that states in part, "Activities affecting quality shall be prescribed by documented ... procedures ... appropriate to the circumstances and shall be accomplished in accordance with these ... procedures ....";

-- The YOQAP-1-A, Section V.B.2, that states in part "The Plant shall be responsible for the ... implementation of all ... procedures associated with plant activities.";

-- Administrative Procedure (A.P.) 0021, Maintenance Requests, Rev. 11, that states in part "Define ... any inspections, tests ... which must be performed prior to releasing the equipment to the designated test department for functional testing ... If it has been determined that post-repair functional testing is the responsibility of the repair department, specify the test requirements and acceptance criteria ... in Section IV of the MR, including any Surveillance or Test Procedure numbers that may apply." (Paragraph, Procedure: 6.h and i) and "Document any parts or materials used on safety-related jobs by recording Material Issue Slip numbers in the appropriate blanks in Section III of the MR." (Paragraph, Procedure: 7.e).

This failure to properly document the required information is a violation. (271/83-22-01).

3. PROCUREMENT

3.1 References

-- 10 CFR 50, Appendix B

-- ANSI N18.7-1976, "Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants"

-- ANSI N45.2.2-1972, "Packaging, Shipping, Receiving, Storage and Handling of Items for Nuclear Power Plants"

-- ANSI N45.2.9-1974, "Requirements for Collection, Storage, and Maintenance of Quality Assurance Records for Nuclear Power Plants"

-- ANSI N45.2.13-1976, "Quality Assurance Requirements for Control of Procurement of Items and Services of Nuclear Power Plants"

-- ANS-22, "Nuclear Safety Criteria for the Design of Stationary Boiling Water Reactor Plants"

3.2 Program Review

The inspector reviewed the procurement program to verify that the requirements contained in the references cited in Section 3.1 were met. The licensee's program is described in the following administrative documents.

-- A.P. 6020, Material and Service Purchase Approval, Revision 9, November 26, 1980

-- A.P. 0800, Material and Service Procurement, Revision 7, April 14, 1983

-- A.P. 0806, Issuing and Returning of Material, Parts, and Components, Revision 1, February 14, 1983

-- OQA-IV-2, Procurement Document Review, Revision 13, February 24, 1983

-- WE-200, Material and/or Service Purchase Request, Revision 5, October 4, 1982.

-- OPVY-102, Material and/or Service Purchase Reports, Revision 2, February 8, 1983

-- YOQAP-1-A, Yankee Atomic Electric Company Operational Quality Assurance Program Topical Report, Revision 11, March 1, 1982

The inspector reviewed the licensee's procurement program to verify the following.

-- Administrative procedures and instructions existed for the control of the procurement of safety-related items.

-- Licensee has suitably included or referenced applicable regulatory requirements for the procurement of safety-related items.

-- Adequate, timely and objective review was performed concerning procurement program associated activities and documents.

-- Changes to procurement documents were subject to the same review and overview as during their preparation.

-- Procedures or instructions were established and the licensee has implemented actions to demonstrate control of suppliers' QA programs.

-- Licensee exhibited an adequate program to report all defects and noncompliances.

-- Personnel involved in the procurement activities were properly trained and were aware of controls placed on safety-related items.

-- Documentary evidence exists that the equipment or material conforms to procurement requirements.

-- Safety-related replacements and spare parts were controlled in accordance with the licensee's QA/QC procedures.

-- Adequate audits and surveillances were conducted by QA personnel.

3.3 Implementation

Implementation of the procurement program was reviewed for conformance to the referenced requirements and procedures in paragraphs 3.1 and 3.2. The inspector selectively sampled procurement actions for both safety-related and non-safety-related items to verify the following.

-- Licensee's administrative control procedures and requirements were adequately implemented.

-- Documents were available to support equipment and materials conformance to procurement requirements.

-- Documents were prepared in accordance with licensee's administrative controls.

-- Items were purchased from "qualified" vendors.

-- An approved bidders list was used.

-- Sufficient documentation was available from suppliers to perform component traceability.

-- Supplier audits and evaluations were performed.

-- Personnel assigned to perform QA audits were trained and cognizant of QA requirements for purchasing these items.

-- Documents were reviewed by QA prior to purchase.

-- Purchased items were properly packaged and stored prior to use to ensure quality.

-- Purchased items were properly segregated to ensure disposition of nonconforming material.

More than 250 purchase orders were reviewed as part of this verification. Of those, the following six were selected for extensive review to determine if the appropriate safety classification had been selected and implemented throughout the procurement process.

	Type	Purchase Order Nos.
1.	O rings sizes 2-469 and 2-475	PO#10636, PO#4844, PO#21240
2.	Small parts for suppressor	PO#11052
3.	ASCO spare parts kit	PO#17646
4.	V13-15 spares	PO#18854
5.	Handset amplifier	PO#21258
6.	RTS lube oil cleaner	PO#20732

The inspector referred to the appropriate procurement requests from maintenance, I&C Material Issue Forms (MI's), and the applicable operating procedures in the review effort. The inspector utilized extensively the computer codes referred to by the procurement staff and other plant personnel; the computer printout referred to by stores; and stock codes indicated on the material and service procurement requests (MSPRs). Operating procedures (OPs) were reviewed, particularly OP-1200 (Preparation of the Reactor Vessel for Refueling, May 14, 1982), in the course of analyzing the application of P.O. #10636, P.O. #4844, and P.O. #21240.

3.4 Findings

No violations were identified however two unresolved items are discussed below.

3.4.1. There is no surveillance, audit or independent review of procurement orders that have been classified as non-safety-related. Additionally the store department doesn't have a procedure to update the computer for material and component classification changes. Non-safety-related orders are orginated on MSPR/MI forms without having any cross check/review performed by individuals outside the department which originated the order. This could result in a situation where non-safety-related purchase orders and associated MSPR's/MI's are not reviewed by plant personnel, when the material/components order via MSPR/MI are not utilized in conjunction with a maintenance work request (MR) or plant design change request (PDCR). An example of this is material and components issued via an MI for use with a refueling procedure (i.e., OP 1200), when an MR is not required.

The procurement department uses codes to identify classes that reflect the classification of the item at the time of original purchase. The concern is that safety classifications could have changed for systems, for which MSPR have been issued. Therefore without a method to update the computer classification codes or an independent review, accurate classification cannot be assured. This item is unresolved pending licensee action and subsequent NRC:RI review (271/83-22-03).

3.4.2 According to A.P. 0806, departments requesting procurement services should accurately complete Material Issue (MI) slips in order to reference correctly the computer classification list provided by stores. Further, A.P. 0806 states that stores will make corrections and changes to the computer parts list for any inaccuracies. However, when the MSPR and MI were completed for P.O. #21240 (i.e. O-rings), the MSPR incorrectly stated that these parts would be used for the suppression chamber instead of the seal-plate manways around the drywell; tne MI was not filled out completely and thereby failed to describe where the items would be used. Failure to correctly complete MI's could potentially lead to the procurement of sub-standard replacement parts. This item is unresolved pending licensee actions to address this concern and subsequent NRC RI review (271/83-22-03).

4. Craft and Technician Training

4.1 Requirements

-- ANSI 18.1-1971, "Selection and Training of Nuclear Power Plant Personnel"

-- Technical Specifications, Administrative Section, 6.0

4.2 Training Program and Implementation Review

The training programs were reviewed to verify consistency with the above requirements and the licensee's commitments in the following areas.

-- Formal and on-the-job training (OJT) for craftsmen and technicians

-- Qualification/certification of personnel as applicable

-- Delineation of the training organization and assignment of responsibilities

-- Documentation of training and retention of records

-- Refresher training and requalification/evaluations are being performed as required

-- Replacement training as applicable

The current status of the training program for craftsmen and technicians was reviewed with instructors and supervisors responsible for the training. The programs and the inspection findings are discussed below.

4.2.1 Maintenance Craftsmen

The inspector reviewed training procedure D.P. 0204, "Maintenance Department Training", Revision 3, May 24, 1982, which delineates formal maintenance training.

The program consists of a combination of on-the-job training and vendor supplied training in theory as well as maintenance and repair of particular plant systems and components. Document reviews are required as part of the annual retraining program to ensure the craftsmen are familiar with applicable station administrative procedures,

maintenance department procedures, plant modifications, LER's, the Plant Safety Manual, and the Site Emergency Plan.

The inspector selectively sampled and examined training records of six craftsmen to verify that the required training and annual retraining were accomplished.

The inspector noted that portions of the 1982 annual reviews have not been completed i.e., LERs, Modifications, and the Safety Manual for 1982. The licensee representative acknowledged the inspector finding and stated the required reviews for 1982 modifications and LERs as well as the 1983 outage modifications would be completed together. Completion of the 1982 and 1983 annual retraining/document review will be reviewed during a subsequent NRC RI inspection (271/83-22-04).

4.2.2 Instrument and Control Technicians

The inspector reviewed training procedure DP 0303, "Instrument and Control Department Training and Retraining Procedure" which delineates the formal I&C training.

The training program consists of on-the-job training, vendor supplied technical courses and annual procedure and program reviews. The object of the training and retraining programs is to ensure a person entering the I&C Department is fully aware of all administrative and technical aspects concerning the position and to maintain that level of expertise. The inspector reviewed the records of six I&C Technicians to verify the required training/retraining including procedure and program reviews were completed and documented. No discrepancies were noted.

4.2.3 QA Overview

In addition to the above reviews the inspector also reviewed the Annual Training Department Evaluation and Quality Assurance audit report of plant training (see Paragraph 7). The inspector discussed the findings and corrective actions associated with these audits/evaluations with the Plant Training Supervisor, Senior Engineer, Operations QA, respectively. Both the audit and the evaluation were completed recently and the formal responses to the findings have not yet been prepared. No violations were identified in the training program.

5. Independent Inspections

5.1 References

-- 10 CFR 50, Appendix B, Criteria X and XVII

-- Yankee Atomic Electric Company Operational Quality Assurance Topical Report (YOQAP-1-A), Sections II and X

-- ANSI N18.7-1976, Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants

5.2 Program Review

The inspector reviewed the following implementing procedures to verify that they provided for: independent inspection including QA/QC hold or witness points; guidelines for determining activities requiring inspection; and inspection and acceptance criteria.

-- AP 0021, Maintenance Requests, Revision 11

-- OP 4124, Residual Heat Removal and RHR Service Water System Surveillance, Revision 14

-- OP 4126, Diesel Generators Surveillance, Revision 14

-- OP 4323, Main Steam Line High Flow Functional Test/Calibration, Revision 12

5.3 Implementation Review

The inspector reviewed the approximately fifty Maintenance Requests (MRs) discussed in Paragraph 2.3 to verify that the inspection system was implemented including the following.

-- Independent inspection was being accomplished

-- QA/QC and witness points were utilized

-- Inspectors were independent of the work activity

-- Inspectors were qualified to perform their assigned activity

-- Acceptance criteria were specified.

5.4 Findings

5.4.1 Modification Work Activities

The modification work packages for EDCRs 82-01 and 06, still under review by the contractor, contained installation procedures, QC nonconformance reports, megger data sheets, and weld data sheets. The installation procedures were developed so as to include inspection points at appropriate phases of the work. Also, a sample review indicated the inspectors were independent of the work performed and qualified to do the particular inspections. The foregoing was objective evidence that QA program inspection requirements were being implemented with respect to modification activities.

5.4.2 Routine Maintenance Activities

Only two of the fifty MRs discussed in Paragraphs 2.3 and 5.3 established specific QC hold points (which had been signed off by appropriate QA personnel). Approximately 20 additional MRs were reviewed to ascertain the number of inspections or QC hold points involved. None were identified. Inspection activity was limited due to the OQA staffing level with the emphasis placed on the audit program. Initials identifying those who did the work and those doing the inspections were the same on MRs 83-0027, Control Room Panel 9-15 relay; 83-0350, HPCI Shock Suppressor; and, 83-0487, Diesel A&B solenoids. Interviews with a number of the workers involved revealed confusion and misunderstanding about the inspection system as described in AP 0021, and how it was to be implemented. The interviewees claimed their intent was to indicate that they attested to the quality of their work, and not their participation in independent inspection.

The recent outage duty roster indicated that the individual who verified the completed inspection points on MRs 83-0921, a Diesel Room Valve PCV-73-A; and, 83-1068, Torus Level Indicators, was also assigned first line supervision duties during this time frame. Also, examples of the many important work activities that did not require any independent inspection were MRs 83-0309, Rebuild SW Pump C; 83-0427, RCIC Trip Throttle Motor Operator Cycling Continuously; and 83-0527, Reactor Protection System Circuit Breaker Replaced and Tested.

The failure to perform a meaningful number of independent inspections and to incorporate guidelines in plant procedures regarding maintenance activities to receive independent inspections is contrary to the following and is considered a violation (271/83-22-05):

-- 10 CFR 50, Appendix B, Criterion X, that states: "A program for inspection of activities affecting quality shall be established and executed by or for the organization performing the activity to verify conformance with the documented instructions, procedures, and drawings for accomplishing the activity. Such inspection shall be performed by individuals other than those who performed the activity being inspected. Examinations, measurements, or tests ... shall be performed for each operation where necessary to assure quality. If mandatory hold points ... are required, the specific hold points shall be indicated in appropriate documents.";

-- The NRC approved Yankee Atomic Electric Company Operational Quality Assurance Topical Report, Section X, that states: "B-2 The Plant shall be responsible for ... Assuring that activities requiring quality assurance meet predetermined requirements ...C.1. Satisfaction of this criteria shall be assured through ...a. Independence of personnel ...d. Inspection of repairs and replacements in accordance with the original design and inspection requirements or acceptable alternatives ...g. Review of maintenance documents ... to determine the need for inspection ...";

-- ANSI N18.7-1976, Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants (a requirement established by Section II.C of the YOQAP-1-A), Section 5.2.17, that states: "Inspection of safety related activities shall be performed in accordance with approved written procedures, which set forth the requirements and acceptance limits and specify the inspection responsibilities."

6. QA/QC Surveillance

6.1 References

-- 10 CFR 50, Appendix B, Criterion II

-- Yankee Atomic Electric Company Operational Quality Assurance Manual (YOQAP-1-A), Revision 11

-- ANSI N18.7-1976, "Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants"

6.2 Program Review

The inspector reviewed implementing procedure OQA-XVIII-4, "Surveillances", Revision °, to verify that it provided guidance for determining which ongoing activities required QA/QC surveillance (monitoring) and the accomplishment of such overview.

6.3 Implementation Review

The inspector discussed the scheduling, planning and documentation of vendor surveillance with selected Yankee Atomic Electric Company Operational QA (OQA) personnel and reviewed schedules, reports, etc. The inspector also discussed QA surveillance of ongoing activities at the plant with OQA personnel stationed at the site and reviewed the log of QA surveillances and selected reports.

6.4 Findings

6.4.1 Vendor Surveillance

The inspector verified that several vendors who supplied items used for maintenance repairs/replacements associated with several of the reviewed Maintenance Requests (MRs) were on the approved vendor list and survey/audit records supported their approval (see Paragraphs 2.3 and 5.4).

6.4.2 Onsite Surveillance

The OQA surveillances conducted on the work activities of the major onsite contractor and of Radwaste shipments were appropriately scheduled and this second level QA overview was adequate. This effort also appeared effective based on indicators of the contractor's performance such as the review of modification packages (see Paragraph 8.3).

However, due to limited OQA staffing and emphasis on the audit program, there is no OQA surveillance conducted of the following plant activities.

-- Instructions, Procedures, and Drawings

-- Control of Purchased Material and Equipment

-- Inspection

-- Test Control

-- Inspection, Test and Operating Status

-- Nonconforming Materials, Parts, and Components

The failure to conduct surveillances of these activities is contrary to the YOQAP-1-A which requires the Nuclear Services Division Quality Assurance Department (OQA) to conduct such surveillances and states in part that such surveillances will be conducted of "... instructions, procedures, and drawings." (Section V.B.1.a); "... plant or vendor ... material and/or services control." (Section VII.B.1.c); "... inspection activities and personnel." (Section X.B.1.c); "... the control of the test program." (Section XI.B.1.a); "... inspection, test and operational status of components and systems and their repair." (Section XIV.B.1); and "... the control, evaluation, and disposition of nonconforming material, parts and components." and "... repetitive nonconforming materials." (Section XV.B.1.a and c). Section XVII.B.1.e also requires "... random informal surveillance of plant activities." by OQA. The failure of OQA to conduct such surveillances is an apparent violation (271/83-22-06).

In addition, the inspector concluded that the current onsite OQA staff of one part time and two full time engineers is insufficient to implement an effective QA Surveillance Program due to other demands on their time (see Paragraphs 5, 7, and 8.4.). This manpower issue will be followed in subsequent NRC:RI inspections.

7. Audits

7.1 References

-- 10 CFR 50, Appendix B, Criterion XVIII

-- Yankee Atomic Electric Company Operational Quality Assurance Topical Reports (YOQAP-1-A), Revision 11

-- ANSI N18.7-1976, "Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants"

-- ANSI N45.2.12-1977, "Requirements for Auditing of Quality Assurance Program for Nuclear Power Plants"

-- ANSI N45.2.23-1978, "Qualification of Quality Assurance Program Audit Personnel for Nuclear Power Plants"

7.2 Program Review

The inspector selectively reviewed the following procedures to verify that they provided guidelines for scheduling, planning (including checklists) and conducting audits and corrective action followup.

-- OP-002, Inplant Audits, Revision 0
-- OQA-II-2, Indoctrination and Training, Revision 5
-- OPVY-107, Inplant Audits, Revision 2
-- WO-107, Inplant Audits, Revision 7

7.3 Implementation Review

The inspector reviewed the 1982-83 audit schedules to verify that the areas to be audited and the audit frequencies were consistent with Technical Specification and YOQAP-1-A requirements. The following audit packages were reviewed to verify they were conducted in accordance with written checklists; audit findings were documented and reviewed; followup action was initiated/completed, and general audit conduct was in accordance with established schedules and procedures. These audits were selected to be compatable with and support the inspection of the other areas discussed herein.

-- ARs 82-05 and 83-05, Training

-- AR 82-06, Maintenance

-- ARs 82-08 and 83-08, Procurement and Material Control

-- AR VY-82-17, Operating Experience Feedback

7.4 Findings

No violations were identified, however two items that will be followed during a subsequent inspection are discussed below.

7.4.1 General Conduct of Audits

The audit schedule was developed so as to space audits evenly throughout the year and the schedule was being met with little or no deferment. Seventeen functional areas are audited during the annual cycle with three areas being audited twice. The 1982-83 audits completed to date average eleven man days each, and the current OQA staff should complete the current schedule as planned unless other demands are made on their time (see Paragraphs 5.4 and 6.4). Audit checklist characteristics are not "canned"

(e.g. once developed, used each succeeding year), but each characteristic is chosen based on the auditor's review of procedures, previous audits, findings, etc. A beneficial practice that has recently been instituted is a separate assessment of the area audited, including effectiveness, that is documented on an attachment to the audit report.

The scheduled 1983 audits were completed as scheduled but at the expense of QA surveillance and inspection activities.

7.4.2 Procurement Audits

The inspector noted that the checklists for Audits 82-08 and 83-08 did not contain a specific characteristic that would assure that all Purchase Orders (POs) were being classified correctly as either safety-related or non-safety-related. The inspector interviewed the auditor who conducted the 1982 audit. Prior to the conclusion of the inspection, the Operations QA Manager stated that an item had been added to the 83-08 checklist to sample non-safety-related POs to assure correct classification. The inspector will review this area during a subsequent inspection(s) to verify that the correct classification of POs continues to be assured in some fashion (271/83-22-07).

7.4.3 Comprehensiveness of Audits

Per inspection report 309/82-02, the inspector discussed that a matrix/chart be developed to determine that all quality elements be audited for each quality activity. A response by the licensee to that inspection, dated June 15, 1983, describes actions to be taken to develop such a matrix. The OQA Manager stated that the subject response will also be applied to Vermont Yankee audits. The inspector will verify this action during a subsequent inspection(s) (271/83-22-08).

8. Design Control and Modifications

8.1 References

-- 10 CFR 50, Appendix B.

-- ANSI N18.7-1976, "Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants"

-- Regulatory Guide 1.29, Revision 3, "Seismic Design Classification"

-- ANS-22, "Nuclear Safety Criteria for the Design of Stationary Boiling Water Reactor Plants"

8.2 Program Review

The inspector reviewed the QA Program relating to the control of design changes and modifications, as described in the following administrative documents.

-- A.P. 6000, Plant Design Change Request, Revision 8, January 8, 1981

-- A.P. 6003, Plant Alteration Requests, Revision 8, January 8, 1981

-- OPVY-101, Plant Design Change Requests, Revision 2, June 30, 1982

-- OPVY-103, Engineering Design Change Report, Revision 2, June 30, 1983

-- WE-101, Plant Design Change Request, Revision 3, March 13, 1981

-- WE-100, Engineering Design Change Request, Revision 10, October 4, 1982

-- OQA-III-2, Review of Plant Design Change Request, Revision 6, August 20, 1982

-- OQA-III-2, Review of Engineering Design Change Request, Revision 5, March 31, 1983

-- YA-GEN-1, Specification of Mechanical and Quality Control Requirements for Maintenance, Repair and Changes, Revision 9, March, 1981

-- WE-005, Standard Memorandum, Revision 4, April 3, 1981

-- YOQAP-1-A, Yankee Atomic Electric Company Operational Quality Assurance Program Topical Report, Revision 11, March 7, 1982

The inspector reviewed the licensee's design control program to verify the following.

-- The plant and corporate management conduct effective overview of Q-listed items.

-- Those participating in design control or modification activities are aware of the classification lists and are using proper and current documentation.

-- The documentation associated with Q-listed items are up-to-date and define, in detail, how items have been classified.

-- Procedures are established for control of design and modification change requests including:

  - o Method for initiating a design or modification change request.

  - o Design change request control form, or equivalent, with provisions for documenting completion of required reviews, evaluations, and approvals prior to implementing the change.

  - o Method for assuring that proposed change does not involve an unreviewed safety question as described in 10 CR 50.59 or a change in the technical specifications.

-- Procedures and responsibilities for design control have been established including:

  - o Identifying the organization(s) or person(s) that performs design work.

  - o Conducting safety evaluations.

  - o Identifying, reviewing, and approving design input requirements.

  - o Performing independent design verifications.

  - o Handling design interfaces (internal and/or external) when design responsibility is to be shared by more than one design organization

  - o Approving of design documents.

  - o Reviewing design change commensurate with the original design review.

-- Administrative controls and responsibilities have been established to assure that design changes and modifications will be incorporated into:

- o Operator training programs

- o Updated plant drawings

8.3 Implementation

The inspector reviewed the plant and corporate procedures, memoranda between corporate and plant personnel addressing safety class changes, and selective EDCR and PDCR documentation, including the following.

EDCR/PDCR NO.	TITLE
PDCR 82-01	Containment H_2O_2 Monitor
PDCR 82-15	HSIV Actuator Upgrade
EDCR 82-01	(Mechanical) CRD System Modification
EDCR 82-06	(Electrical) CRD System Modification
EDCR 79-51	Post accident Sample
EDCR 82-37	Torus Instrumentation

The inspector discussed the following two major safety classification areas in depth, with corporate engineering staff:

- o Weld Overlay Designs

- o VY Safety Classification of Main Steam Piping Turbine Stop and Bypass Valves.

8.4 Findings

8.4.1 Plant Alteration Requests (PAR) describe the method or sequence of review by plant QA and OQA of PARs. OQA does not have a procedure to review PARs. The concern is that Engineering Support could misclassify the design change as non-safety-related without a proper review by QA personnel. This item is unresolved pending licensee action to address this issue and subsequent NRC RI Review (271/83-22-09).

8.4.2 Engineering instructions written for the purpose of reviewing PDCRs and EDCRs do not specifically require a formal review of each for safety classifications. OQA instructions written for the purpose of reviewing PDCR's do not specifically require OQA to review safety classifications. The concern is that the cognizant engineer for PDCR's and EDCRs could have misclassified these design changes without the proper review by OQA or the corporate

engineering staff. This item is unresolved pending license action to address this issue and subsequent NRC RI Review (271/83-22-10).

8.4.3 There is no escalation procedure to handle unresolved issues between VY and YAEC engineering staffs resulting from communication relating to safety classifications. The inspector reviewed several memoranda concerning safety classification issues, generated by the corporate staff in accordance with standard instruction, WE/005, "Engineering Instruction for Transmittal of Information Related to Activities performed within Engineering Departments". The concern is that this instruction does not provide a mechanism for YAEC to escalate disagreements with VY, if VY denies YAEC recommendations concerning YAEC's engineering judgement, including safety classifications. This item is unresolved pending licensee action to address this issue and subsequent NRC:RI review (271/83-22-11).

8.4.4 The licensee's current program for drawing control does not provide for "as-built" information in the control room prior to system operation. However, the licensee does provide outage training for the operators to ensure that the operators are aware of outage modifications and associated procedure revisions. This issue was previously identified by PAB and INPO and the licensee is currently revising, the drawing control program to provide "as-built" information in the control room prior to system operation. The licensee's representative acknowledged the inspector's concern and committed to have the revised program in place by October 1, 1983. This item is unresolved pending licensee action to implement the revised drawing control program and subsequent NRC RI review (271/83-22-12).

9. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable, deviations or violations. Unresolved items identified during this inspection and are detailed in Paragraphs 3.4 and 8.4.

10. Management Meetings

Licensee management was informed of the scope and purpose of the inspection at an entrance interview conducted on July 11, 1983. The findings of the inspection were periodically discussed with licensee representatives during the course of the inspection. Exit interviews were conducted on

July 15, 1983 at the site and July 20, 1983 at the Yankee Atomic Energy Corporate Offices (see Paragraph 1 for attendees) at which time the findings of the inspection were presented.

At no time during this inspection was written material provided to the licensee by the inspectors.