U.S. ATOMIC ENERGY COMMISSION

DIRECTORATE OF REGULATORY OPERATIONS

REGION I

O Inspection Report No: 50-29/74-03 Docket No: 50-29

icensee: Yankee Atomic Electric Company License No: DPR-3

20 Turnpike Road Priority:

Westboro, Massachusetts 01581 Category: C

ocation: Rowe, Massachusetts

ype of Licensee: PWR, 600 MWt

ype of Inspection: Special, Announced, Training & QA

ates of Inspection: April 30 through May 2, 1974

ates of Previous Inspection: March 11 through 15, 1974

eporting Inspector: W. A. Ruhlman 5/9/74
W. A. Ruhlman, Reactor Inspector Date

ccompanying Inspectors: None
Date

Date

Date

Date

ther Accompanying Personnel:
Date

eviewed By:
E. C. McCabe, Jr., Senior Reactor Inspector Date
Reactor Operations Branch

SUMMARY OF FINDINGS

Enforcement Action

None

Licensee Action on Previously Identified Enforcement Items

Not inspected

Unusual Occurrences

None Identified

Other Significant Findings

A. Current Findings

1. Non-Deficient Areas

The following training areas/programs were inspected with no deficiencies identified.

a. Radiation Protection Training (Detail 2b)

b. First Air Training (Detail 2d)

c. Plant Fire Protection Training (Detail 2e(1))

d. Welder Training/Qualification (Detail 4)

e. Special Training - Auxiliary Operators (Detail 6)

2. Open Item

The Operator Retraining Program is not required to be, nor is it, fully operational. This item will remain open and will be reinspected after the first annual examination has been administered and graded. (Detail 5)

3. New Unresolved Items

The following items, based upon codes/standards which have been modified/issued subsequent to the facility license, were identified as unresolved items.

a. Plant Security Training (Detail 2a)

b. Quality Assurance Training (Detail 2c)

c. OSHA & Plant Safety Standard Training (Detail 2e(2))

d. Instrument and Control Personnel Training (Detail 4a)

e. Maintenance Department Training (Detail 4b)

B. Status of Previously Unresolved Items

The licensee had taken appropriate action to resolve eight (8) of the ten (10) deficiencies in the Quality Assurance Program that were identified in RO Inspection Report 50-29/73-05. (Detail 7)

Management Interview

The management interview was held at the site on May 2, 1974 with the following attendees:

Mr. H. A. Autio, Plant Superintendent
Mr. W. G. Jones, Assistant Plant Superintendent
Mr. N. N. St. Laurent, Technical Assistant to the Plant Superintendent
Mr. J. L. Staub, Technical Assistant
Mr. R. L. Berry, Training Coordinator

The Following summarized the items discussed:

A. Plant Security Training. (Detail 2a)

B. Radiation Protection Training. (Detail 2b)

C. Quality Assurance Training. (Detail 2c)

D. First Air Training. (Detail 2d)

E. Industrial Safety Training. (Detail 2e)

F. Instrument and Control Personnel Training. (Detail 3a)

G. Maintenance Department Training. (Detail 3b)

H. Welder Training/Qualification. (Detail 4)

I. Licensed Operator Training/Retraining. (Detail 5)

J. Special Training - Auxiliary Operators. (Detail 6)

K. Previously Unresolved Items - Quality Assurance. (Detail 7)

L. Inspection Documentation

The inspector noted that the licensee documented the results of the inspection and the management interview for internal use. The inspector stated that the official statement of the results of the inspection would be contained in the inspection report. The licensee acknowledged this information.

DETAILS

1. Persons Interviewed On Site

Yankee Atomic Electric Company

Mr. H. A. Autio, Plant Superintendent
Mr. R. L. Berry, Training Coordinator
Mr. W. D. Billings, Chemistry and Health Physics Supervisor
Mr. E. G. Bolognani, Maintenance Clerk
Mr. R. L. Boutwell, Engineering Assistant
Mr. R. P. Danek, Operations Supervisor
Mr. R. E. Durfey, Engineering Assistant
Mr. M. W. Ebert, Plant Reactor Engineer
Mr. J. A. Flanigan, Plant Health Physicist
Mr. R. A. Herzog, Shift Supervisor
Mr. W. G. Jones, Assistant Plant Superintendent
Mr. P. E. Laird, Maintenance Supervisor
Mr. E. A. Miles, Technical Assistant
Mr. R. C. Pettengill, Control Room Operator
Mr. E. H. Pierce, Control Room Operator
Mr. L. L. Reed, Quality Control and Audit Coordinator
Mr. N. N. St. Laurent, Technical Assistant to the Plant Superintendent
Mr. J. H. Shippee, Instrument and Control Supervisor
Mr. J. L. Staub, Technical Assistant
Mr. R. H. Streeter, Storekeeper

2. General Employee Training

The inspector reviewed the training provided for regular employees with respect to the pertinent requirements delineated in 10 CFR 19, ANSI N18.1 - 1971 and Criterion II of Appendix B to 10 CFR 50. The following, based upon discussions held with and records furnished by licensee representatives, summarizes the inspector's findings.

a. Plant Security Training

New employees receive this training as part of the indoctrination required by the GENERAL PLANT TRAINING FOR NEW EMPLOYEES procedure. All plant employees receive a minimum of one (1) hour of training, on an annual basis, to satisfy the GENERAL PLANT TRAINING PROGRAM requirement in this area.

(1) Both the initial indoctrination and the periodic lectures include the following:

(a) Site Security Plan
(b) Security Responsibilities for Plant Personnel
(c) Emergency Security Procedures
(d) Plant Controlled Access Areas

(2) Participation in and subject matter covered during both the initial indoctrination and the periodic lectures are recorded and filed.

(3) When scheduled, the periodic lectures cover the same subject in two (2) lectures scheduled on different dates/times to allow all personnel to attend. Operations Department personnel who fail to attend either of the two scheduled lectures, are scheduled to attend similar lectures given as part of the Reactor Operator Retraining Program. Current practices neither identify nor reschedule non-operations department personnel.

(4) The current training program does not provide any management system whereby the effectiveness of the training is evaluated.

Licensee representatives stated that new program requirements would be incorporated to ensure that personnel from all departments would be made aware of the information disseminated at lectures which they failed to attend, where required. In addition, the representatives stated that a method of evaluation would be developed, incorporated into the program, and implemented to provide management with reasonable assurances that the training presented was effective.

This item is unresolved pending program changes incorporating the licensee's commitments.

b. Radiation Protection Training

New employees receive this training as required by the GENERAL PLANT TRAINING FOR NEW EMPLOYEES procedure. All plant employees are required by the GENERAL PLANT TRAINING PROGRAM to receive a minimum of three (3) hours of training in this area annually.

(1) The indoctrination of the new employees covers:

(a) Basic Radiation and Contamination Control
(b) Use and Care of Dosimetry Devices

(c) Use and Care of Survey Instruments
(d) Use of Respirators
(e) Use of Protective Clothing
(f) Entrance to and Exit from the Control Area
(g) Tour of the Control Area
(h) Use of the Vapor Container Personnel Hatch During Vapor Container Integrity
(i) Radiation Alarm Systems and Emergency Plan Training
(j) Health Physics Manual and Forms

(2) The training lectures for the annual training are required to cover the Accident Emergency Plan and the Radiation Protection Manual. The two identical lectures given in the month of April, 1974, are typical and are given here as an example of the scope and content of these lectures.

(a) 10 CFR 19, Parts 19.11, 19.12, 19.13, 19.14, 19.15 and 19.16
(b) Personnel Radiation Exposure Limits
(c) Film Badges and Dosimeters
(d) Access to the Control Area
(e) Radiation Work Permits
(f) Access to Radiation and High Radiation Areas
(g) Protective Clothing
(h) Respiratory Protective Devices
(i) Access to the Vapor Container
(j) Smoking and Eating Regulations
(k) Personnel Contamination
(l) Contaminated Lavatory Use
(m) Exit from the Control Area
(n) Injuries and Emergencies

(3) Participation in and subject matter covered during both the initial indoctrination and the periodic lectures are recorded and filed.

(4) Lecture attendance is reviewed and a determination is made of the names of persons that did not attend either lecture. Based on the number of people thus determined, either another lecture is scheduled or smaller/individual sessions are given to ensure that all required personnel receive the required training.

(5) The effectiveness of the training given is evaluated in discussions held at the end of the lectures for this purpose. In addition, a program of monitoring individual exposure records has been implemented to verify practical

application of training aimed at reducing exposure. This department will also adopt, according to the Health Physicist, an additional method, currently under development, for use in evaluating the other general employee training areas.

The inspector had no further questions in this area.

c. Quality Assurance Training

The GENERAL PLANT TRAINING FOR NEW EMPLOYEES procedure also requires training in Quality Assurance (Q/A). In addition, the GENERAL PLANT TRAINING PROGRAM stipulates that a minimum of three (3) hours of training will be given annually.

(1) Both the initial indoctrination and the periodic training lectures cover:

(a) Quality Assurance Procedures
(b) Workmanship, Documentation, Personnel Attitudes Toward Quality Assurance
(c) Quality Assurance Manual
(d) Company Policy Towards Qulaity Assurance

(2) Participation in and subject matter covered during both initial indoctrination and periodic lectures are recorded and filed.

(3) All personnel that fail to attend the lectures are not identified and rescheduled.

(4) The training given in this area is not evaluated to determine its effectiveness.

Licensee representatives stated that new program requirements would be incorporated to ensure that required personnel from all departments either attend the lectures or receive the information disseminated at the lectures. They also stated that a method of evaluation would be developed, incorporated as a program requirement, and implemented to provide management with reasonable assurances that the training presented was effective.

d. First Aid Training

Records indicated that permanent plant employees, appointed by the respective department heads, have received First Aid Training. At least two (2) operators on each shift have received either the STANDARD or the ADVANCED National Red Cross Training and have been certified for competency. In addition, all of the regular guard force personnel have received this training and certification. Since certification expires after three years, recertification training is an ongoing program.

The inspector had no further questions in this area.

e. Industrial Safety Training

In addition to the training given to new employees as required by the NEW EMPLOYEE TRAINING procedure and the minimum of ten (10) hours of lectures required for plant personnel under the GENERAL PLANT TRAINING PROGRAM, regular Plant Safety Meetings are held monthly.

(1) Plant Fire Protection Training

Fire Protection training is required by both the procedure for new employees and the one for annual training of all employees. In addition to the lectures given, which are documented for both subject matter and attendance, the plant has sponsored a one (1) day Fire Protection and Control course taught by a vendor of extinguishers and fire control apparatus. It was also noted that over one-half of the local volunteer fire department, including the Chief and Deputy Chief, are employed as regular members of the plant staff. A documented fire drill was furnished which indicated not only a blow-by blow description of the events that took place but also indicated management review to evaluate the effectiveness. Another fire drill was scheduled for after the refueling outage.

The inspector had no further questions in this area.

(2) OSHA & Plant Safety Standard Training

Training in these two (2) areas is also required by both the new employee and the annual retraining procedures. Content of and attendance at lectures covering these subjects is documented but not evaluated. Consistent with the licensee's commitments in the areas of Plant Security and Quality Assurance Training (Detail 2a & 2c), represent-

atives stated that program changes would be initiated to eliminate the noted deficiencies.

This item is unresolved pending implementation of the licensee's commitments.

3. Non-Licensed Technician/Repairman Training

The inspector reviewed the training provided for Instrument and Control (I&C) and Plant Mechanics Electrical and Mechanic[illegible] with respect to the pertinent requirements of ANSI N18.1 - 1971, ANSI N45.2.6 - 1973 as modified by Regulatory Guide 1.58, and Criterion II of Appendix B to 10 CFR 50. The following summarizes the inspector's findings.

a. Instrument and Control Personnel Training

Based on the review of licensee furnished documents and discussion held with the I&C Supervisor, currently:

(1) Training is conducted in this department in accordance with a licensee approved Administrative Procedure titled INITIAL AND REVIEW QUALIFICATION TRAINING OF I&C PERSONNEL.

(2) The training procedure requires and documents that initially, and on an annual basis after qualification, the following subject areas are covered.

(a) Plant Administrative Procedures
(b) I&C Department Administrative Procedures
(c) Plant Technical Specification (pertinent to I&C)
(d) Plant Final Safety Analysis Report (pertinent to I&C)
(e) I&C Dept. Instrument Changes
(f) Plant Abnormal Occurrences (pertinent to I&C)
(g) Plant Information Reports (pertinent to I&C)
(h) Safety Related System Classification
(i) I&C Work Log Book
(j) Parts Requisitioning and Procurement Procedures
(k) I&C Department Work Procedures
(l) Plant Design Changes and Modifications (pertinent to I&C)
(m) Areas covered in the General Plant Training Program

(3) In addition, the initial qualification card requires both training and demonstration of knowledge on seventy-six (76) separate systems, instruments or pieces of equipment.

(4) Rotation of work assignments is done to ensure that all personnel qualify on all equipment. This on-the-job rotation is accomplished by review of the I&C Work Log Book, and assignment of jobs based upon that review. This process is not required by the program and is not documented by other than entry in the I&C Work Log.

(5) Qualification Tests have been administered in some cases and where completed, they are graded and filed. Although these tests do in fact form the basis for certification and promotion, there is no formal certification requirements stipulated in the program.

The licensee representative acknowledged the inspector's concerns and stated that the Training Program was currently being reviewed for compliance with the new (late 1973) ANSI standard (N45.2.6) and that changes to the program required by that standard had not yet been made. The licensee stated that when these changes had been incorporated, the inspector's concerns would be eliminated.

This item is unresolved pending changes to the program to incorporate the requirements of ANSI N45.2.6 - 1973.

b. Maintenance Department Training

Discussions held with and documentation furnished by the Maintenance Supervisor and members of his staff indicate that currently, there is a documented training effort in progress to train and upgrade Plant Mechanics Electrical and Mechanical. The following summarizes the inspector's findings.

(1) Current training in this department exists because of the direction of the Maintenance Supervisor, it is not required by a documented program. A program incorporating current standards was in various stages of completion but has been delayed because of requirements placed on the department in preparing for the upcoming refueling outage. A documented program, similar in scope and content to the I&C program, will be approved tentatively by August 30, 1974.

(2) Documented training exists in the following areas:

(a) Department personnel have participated in on-site and off-site vendor taught schools. e.g. Valve and pump packing school taught by the packing vendor.

(b) Personnel are qualified to perform ultra-sonic, dye penetrant and X-ray examination and testing in accordance with applicable codes and standards.

(c) Personnel are trained, examined and certified qualified to operate lift trucks, portable cranes, Yard and Turbine Hall Overhead Cranes.

(d) Personnel are trained, examined, and certified qualified to operate certain machine shop equipment such as: laths, drill presses, shapers, band saws and milling machines.

(3) Qualification tests are administered as follows:

(a) A pre-employment screening test of one-hundred (100) questions.

(b) Written classification tests made up of both a theoretical and a practical performance section is given, graded and retained.

(4) Some employees have been involved in preparation and/or review of maintenance related plant procedures.

(5) Mechanics are given a training manual (136 pages) to use to study for job advancement.

(6) Various sections of the plant Safety Manual are reviewed and discussed as well as the training which is required under the General Plant Training Program.

(7) Formal certification, with the required recertification review on a periodic basis as required by current standards, has not yet been implemented.

The licensee representative stated that the documented program currently under development would meet the current requirements of ANSI N18.1 - 1971 and ANSI N45.2.6.

This item is unresolved pending the approval and implementation of the proposed Maintenance Department Training procedure.

4. Welder Training/Qualification

The inspector reviewed the licensee's records with respect to the pertinent requirements delineated in Section IX of the ASME B&PV Code. No deficiencies were identified. The inspector had no further questions in this area.

5. Licensed Operator Training/Retraining

The Operator Licensing Branch of the Directorate of Licensing stated, in a letter dated March 28, 1974, that the Yankee Rowe Requalification Program submitted on December 7, 1973, the additional information submitted March 20, 1974 and the information furnished by Mr. Berry of the plant staff met the requirements of Section 50.54 (i-1) of 10 CFR 50 and Appendix A of 10 CFR 55.

a. Retraining Program Review

Using the above referenced documents as the basis, the inspector reviewed the licensee's documentation and action in this area. The following summarized his findings.

(1) Sixty (60) lectures in the retraining series had been given and documented for content and attendance under the retraining program through May 2, 1974. Of the twenty-five (25) licensed operators at the facility, three (3) had just been licensed, four (4) attended most of the lectures in the series and eighteen (18) had not attended any of the lectures. Since the first annual requalification examination had not yet been given, lecture attendance is not required.

(2) The first annual examination, required by the Retraining Program, has been prepared and will be given, according to the Training Coordinator, after the up-coming refueling outage is completed probably by the last week in July. This examination, when graded, will form the basis for lecture attendance and other training mandated by the Requalification Program.

(3) Three (3) examinations had been given as part of the evaluation of the Retraining Program. Of the four (4) licensed operators participating in the program, on the first examination (February 1, 1974) two of the four operators scored less than 80% on one or more of the five sections of the examination; one of the four scored less than 80% overall. The second examination (April 5, 1974) consisted of six (6) sections and three of the four licensees scored less than 80% in one or more sections; one licensee made less than 80% overall. The third examination also had six (6) sections (April 11, 1974) and three of the four licensees taking the examination scored less than 80% on one or more sections with two of the four scoring less than 80% overall. Training was in

progress with the four (4) individuals involved with special emphasis being given to the weak areas disclosed by the examination. The final examination in this training series is scheduled to be given on May 10, 1974.

(4) A Training Coordinator has been assigned to administer the Retraining Program. Systems and records have been established to require/document the following items:

(a) Review of Emergency/Abnormal Procedures
(b) Review of Systems, Procedures, Reports required in the Program
(c) Required Reactivity Control Manipulations
(d) Required Operations/On-the-job training
(e) Individual Operator Participation in the Program
(f) Quizzes and Examination Results
(g) Review of Changes to Procedures, Equipment or Drawings

(5) By direct questioning of two (2) licensed operators, selected at random by the inspector, it was verified that these two (2) operators were familiar with two (2) procedures, selected at random, for which they had initialed to signify their understanding. No attempt was made to evaluate the operators' proficiency; only their familarity with the content of the two (2) procedures selected was verified.

This item will remain open until it has been reinspected following administration of the first annual examination.

6. Special Training-Auxiliary Operators

Due to the expected increase in the workload of the Health Physics Department during the up-coming refueling outage, four (4) Auxiliary Operators were selected and given a special training course to qualify them to aid the Health Physicist. Documentation furnished by the licensee indicated that the following training has been accomplished.

a. Classroom Instruction

Ten (10) hours of classroom instruction were given covering the following areas.

(1) Yankee Rowe Commitment to As Low As Practicable

(2) Sixteen (16) Administrative and Health Physics Procedures
(3) Use and Care of Portable Survey Meters

(a) Jordan Rad Gun
(b) PIC-6A
(c) E-500B
(d) RM-14

b. Practical In-the-field Instruction

Practical experience in the field was given which consisted of seven (7) hours of actually conducting radiation and contamination surveys, taking air samples and using control point counting instruments. The surveys were made in various parts of the Control Area to duplicate conditions to be found during refueling operations.

c. Problem Solving/Calculations

Three (3) hours were devoted to solving typical radiation problems in the following areas:

(1) Respirator Selection and Fitting
(2) Stay Time Calculations
(3) Man-Rem Calculations
(4) Airborne Activity Calculations

d. Self Study

Approximately one (1) hour was devoted to self study which was followed by a question and answer period.

The inspector had no further questions in this area.

7. Previously Unresolved Items-Quality Assurance

In the letter dated November 6, 1973, RO:I defined several deficiencies in the Plant Quality Assurance Procedures for the operations phase. These items were detailed and listed as unresolved in inspection report 50-29/73-05 which accompanied the letter. In a letter dated January 9, 1974 from Yankee Atomic Electric Company to RO:I, steps were defined to solve the deficiencies noted in the report (73-05). The inspector checked the implementation of the steps defined in the letter. The following summarizes his findings.

a. Resolved Items

The actions defined in the letter, when implemented, were sufficient to resolve the noted deficiency. The defined actions had been implemented for the following items. All "DETAILS" refer to 50-29/73-05.

(1) Detail, Paragraph 3
(2) Detail, Paragraph 4b and 4c
(3) Detail, Paragraph 5
(4) Detail, Paragraph 6
(5) Detail, Paragraph 8
(6) Detail, Paragraph 9
(7) Detail, Paragraph 10

These items are now resolved based upon your corrective actions.

b. Unresolved Items

The action defined in your letter for the following areas was either inappropriate or not yet implemented and these items are still unresolved for the reasons indicated. Details referenced are from 50-29/73-05.

(1) Detail, paragraph 4a states that the procedure for making modifications to safety systems is not clear. Your action, of extensively revising AP-0201 was inappropriate since this action now gives the plant two (2) procedures for making a change to safety systems (AP-0200 and AP-0201) and no guidance is provided on which procedure should now be used.

(2) Detail, Paragraph 7 stated in part that AP-044 did not require work and inspection instructions. Your answer states "Procedure No. AP-044, now AP-0212 has been revised to require work and inspection in accordance with reference 4, Departmental Procedure No. DP-0600, Material Handling, Shipping, Packaging, Cleaning, Storage and Preservation."

Your action is considered inadequate in that Departmental Procedure No. DP-0600 has not yet been typed, approved or issued.

Discussions with and documentation furnished by the plant Storekeeper did indicate that operations were in fact being carried out in accordance with ANSI N45.2.2 as modified by Regulatory Guide 1.38. The referenced docu-

ments, according to the draft copy of DP-0600 shown to the inspector, are the source documents used in the preparation of DP-0600.

Items 7b(1) and 7b(2) are still unresolved.