

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

Region I

Report No. 50-29/80-19

Docket No. 50-29

License No. DPR-3

Priority - -

Category C

Licensee: Yankee Atomic Electric Company

20 Turnpike Road

Westborough, Massachusetts 01581

Facility Name: Yankee Atomic Power Plant

Inspection at: Rowe, Massachusetts

Inspection conducted: November 18 - 21, 1980

Inspectors: *Peter S. Koltay*  
Peter S. Koltay, Reactor Inspector

12/11/80  
date signed

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date signed

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date signed

Approved by:

*S. D. Ebner*  
S. D. Ebner, Chief, Engineering  
Support Section No. 2, RC&ES Branch

12/30/80  
date signed

Inspection Summary:

Inspection on November 18-21, 1980 (Report No. 50-29/80-19)

Areas Inspected: Routine unannounced inspection of the plant Fire Protection/Prevention Program, including: implementation of administrative procedures; fire brigade training; observation of ignition source and combustible materials control; review and observation of plant modifications; and observation of critical plant fire areas. The inspection involved 21 hours on site by one NRC regional based inspector.

Results: No items of noncompliance were identified. A deviation from an applicable code was identified in one area (paragraph 2a).

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## REPORT DETAILS

### 1. Persons Contacted

- \*H. Autio, Plant Superintendent
- L. French, Engineering Assistant
- \*N. St. Laurent, Assistant Plant Superintendent
- \*E. May, Technical Assistant-Fire Protection Coordinator
- L. Reed, Operational QA Coordinator
- \*J. Staub, Technical Assistant to Plant Superintendent

\*denotes those present at the exit interview.

### 2. Fire Protection/Prevention Program

#### a. Administrative Controls

The inspector reviewed the following licensee administrative procedures:

- AP 0216 revision 1, Plant Housekeeping Program;
- AP 5005 revision 5, Standard Welding and Inspection Procedure.

The inspector verified that the licensee has developed administrative controls which include:

- (1) Requirement for periodic inspection for accumulation of combustibles.
- (2) Control over the storage of flammable materials.
- (3) Prohibition on smoking in safety related areas except where "smoking permitted" areas have been specifically designated.
- (4) Special authorization for activities involving welding and other open flame operations. Administrative procedure AP 5005 requires that the supervisor responsible for the cutting or welding operation evaluate the combustible loading in the proximity of the work area prior to approving the operations. However, the procedure does not specify the radius of area from the point of operations that should be examined nor does the procedure address the handling and protection of combustible materials within a specified radius of the work area. During a walk-through inspection of the Turbine Generator Building, operating floor elevation, the inspector noted a welding operation in progress, within 10 feet of a wood working area, where 20-30 sheets of plywood were being cut, allowing an accumulation of sawdust on the floor.

The inspector reviewed Amendment No. 56 to Facility Operating License No. DPR-3. Licensee submittal dated May 10, 1978 commits the licensee to conformance with guidelines of Attachment G of the NRC document titled, "Nuclear Plant Fire Protection, Functional Responsibilities, Administrative Controls, and Quality Assurance." Licensee's procedure AP-5005 did not incorporate the following NRC guidelines adopted from the National Fire Protection Association Code 51B:

- Before issuing the permit, the responsible foreman or supervisor should physically survey the area where the work is to be performed and establish that the following precautions have been accomplished:
  - (1) All movable combustible material below and within a 35 foot radius of the cutting, welding, grinding, or open flame work has been removed. (See NFPA 51B)
  - (2) All immovable combustible material below and within a 35 foot radius has been thoroughly protected by asbestos curtains, metal guards, or flameproof covers, and fire extinguishers, hose, or other firefighting equipment are provided at the work site. (See NFPA 51B)

The licensee's failure to incorporate the above guidelines into implementing instructions/procedures is considered to be a deviation from the licensee's commitment in Amendment No. 56 (29/80-19-01).

The inspector noted that administrative procedures for the control of combustible and flammable materials have not been revised to reflect the requirements of 10 CFR 50 Appendix R. The licensee stated that the applicable procedures will be updated in accordance with the schedule outlined in 10 CFR 50.48, Fire Protection, paragraph C.

### 3. Fire Brigade Training

The inspector noted the licensee procedure, AP-0503, Fire Protection Training, is under review. The procedure will be completed in accordance with the schedule outlined in 10 CFR 50.48.

No items of noncompliance were identified.

### 4. Facility Tour

The inspector examined fire protection water systems, including fire pumps, fire water piping and distribution systems, yard fire protection equipment

including indicator valves, hydrants and contents of hose houses. The inspector toured all accessible vital and nonvital plant areas and examined fire detection and alarm systems, automatic and manual fixed suppression system interior hose stations, fire barrier penetration seals, fire doors, and fire dampers.

The inspector examined the control room, switchgear room and the turbine building which are identified as critical fire areas in TI2515/19.

The inspector noted that there are two rows of windows along the north wall of the turbine building at approximate elevations 1056 ft. and 1065 ft. The roof of the office building, located in the northwest area of the turbine building is within 10 ft. of the lower row of windows. The combustibility of the office building roof, insulated metal deck type, could not be determined during the inspection.

The inspector determined, however, that the interior suspended ceiling is of combustible fiberboard, attached to a wood lath. The interior fire loading of the building is above the average for this type of occupancy, 15-20 lbs/ft.sq. due to overloading of office equipment and materials.

The available fire protection for the office building consists of portable extinguishers, hose station and yard hydrants.

The inspector could not find evidence that the exposure of the office building to the turbine building structure and its contents and thus exposure to equipment required for safe reactor shutdown has been considered either by the licensee or the NRC review team.

This item is considered unresolved pending NRC review of:

- a. determination of the combustibility of the office building roof construction,
- b. determination of impact of an office building fire on equipment and structures required for safe shutdown. (29/80-19-2)

#### 5. Fire Protection Modifications Required by Amendment No. 56 to DPR-3

By review and examination of records, including specifications, drawings, and associated quality assurance documents, and by examination of installed fire protection equipment throughout the plant, the inspector verified the licensee's implementation of scheduled modifications identified in Amendment No. 56 to DPR-3.

The inspector verified that the following modifications have been completed in accordance with Section 3 of the Fire Protection Safety Evaluation Report, attached to Amendment No. 56.

### Item 3.1.2 Fire Water Supply

The starting pressure for the two fire pumps was increased to 100 and 110 psig respectively. Post-indicator valves were numbered.

### Item 3.1.12 Control of Combustibles

- Air flow alarms were installed in the battery room exhaust. System failure alarm provided in the control room. (Plant Modification 79-22)
- Diesel fuel oil line was rerouted outside the auxiliary building. (PDCR 79-16)
- A curb, fireproof partition and adequate drainage inside curb has been provided below the diesel oil fuel line outside the diesel generator rooms. (PDCR 79-2)
- Fire proofing of structural steel has been completed in the diesel generator rooms. Two hour fire resistance rating has been achieved using Pyrocrete 241 material. (EDCR 79-52)
- An adequate size dike was installed around the turbine lube oil reservoir. (EDCR 79-22)
- The berm height for the diesel oil storage tank has been increased. (EDCR 79-24)

The inspector verified that all other modifications including installation of water, gaseous and foam suppression systems, hose stations, water storage tank and fire pump house are 50 - 90% completed. The licensee stated that installation schedules outlined in 10 CFR 50.48 will be met.

The inspector reviewed the following document and verified that the licensee established a quality assurance program applicable to fire protection, in accordance with NRC guidelines outlined in Fire Protection Functional Responsibilities, Attachment No. 6.

YA - Gen. - 9 Fire Protection Systems Design, 4/13/78;

The inspector verified that for all fire protection related modifications, the design and installation of equipment is in accordance with the codes and standards of the National Fire Protection Association. Also, all fire protection equipment is Underwriters Laboratories listed.

No items of noncompliance were identified.

6. Unresolved Items

Unresolved items are matters about which more information is required to ascertain whether they are acceptable items, items of noncompliance, or deviations. An unresolved item disclosed during the inspection is discussed in paragraph 2a.

7. Exit Interview

The inspector met with the licensee representatives denoted in Details (paragraph 1) at the site on November 21, 1980, and summarized the purpose and scope of the inspection findings.