

APPENDIX

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Inspection Report: 50-50-382/93-17

Operating License: NPF-38

Licensee: Entergy Operations, Inc.
P.O. Box B
Killona Louisiana 70066


Facility Name: Waterford, Unit 3

Inspection At: Waterford 3, Taft, Louisiana

Inspection Conducted: May 17-21, 1993

Inspector: Amarjit Singh, Reactor Inspector, Plant Support Section
Division of Reactor Safety

Approved:


G. L. Constable, Chief, Plant Support Section, Date
Division of Reactor Safety

6/8/93

Inspection Summary

Areas Inspected: Routine, announced inspection of the licensee's fire protection/prevention program and actions on a previous inspection finding.

Results:

- The inspection verified that the licensee has maintained an overall effective fire protection/prevention program (Section 1).
- The licensee's administrative control procedures and penetration replacement program were considered strengths (Sections 1.1 and 1.4).
- Weaknesses in the implementation of housekeeping were observed. (Section 1.4).

Summary of Inspection Findings:

- Inspection Followup Item 382/9314-02 was closed. (Section 2).

Attachments:

- Attachment 1 - Persons Contacted and Exit Meeting
- Attachment 2 - Documents Reviewed

DETAILS

1 FIRE PROTECTION/PREVENTION PROGRAM (64704)

The purpose of this inspection was to determine if the licensee had established and was implementing a program for fire protection and prevention in conformance with regulatory requirements, Technical Specifications (TS), and industry guides and standards.

1.1 Administrative Controls

The inspector reviewed the licensee's programs and procedures used to control combustible material and to reduce fire hazards. The inspector verified that the licensee had technically adequate procedures to implement the fire protection program. The licensee's program provided for control of combustible materials to reduce fire hazards. Administrative controls had been established to handle inoperable fire detection, suppression, and support equipment and fire doors. The licensee also had established personnel fire fighting qualifications, training, staff responsibilities, and controls for welding, cutting, grinding, and other ignition sources. Maintenance evolutions, which significantly increased fire risk, were properly controlled. The licensee's administrative control procedures were comprehensive and were considered a strength.

1.2 Surveillances

In this area, the inspector reviewed the records for surveillances conducted since the last inspection to verify that:

- The fire detection and suppression, fire dampers, and fire pumps met the established operability testing requirements, and
- Operability of these systems has been satisfactorily demonstrated at the required frequencies.

The inspector reviewed the surveillance procedure data packages listed in Attachment 2. The inspector found that required surveillances were being conducted at the established frequencies. Prompt actions had been taken to repair defective components, and it appeared that appropriate compensatory actions were taken when required.

1.3 Fire Protection Quality Assurance

The inspector reviewed the quality assurance audits for the past 3 years. These audits were identified as, "Fire Protection and Loss Prevention Program," dated November 26 through December 19, 1990; November 5, 1991, through January 7, 1992; and November 9, 1992, through January 21, 1993.

These audits were performed to assess the implementation and effectiveness of the Fire Protection and Loss Prevention Program at Waterford 3 Nuclear Station and included system and equipment alteration, tests, surveillance, maintenance records, organization, training and qualification of personnel, and fire barriers. The review indicated that these audits were comprehensive in scope and performed an in-depth evaluation of the Fire Protection/Prevention Program at Waterford 3. The discrepancies identified were formally presented to the responsible organizations. Responses were tracked to closeout and the actions taken were reviewed for adequacy by the appropriate organizations.

1.4 Physical Observations from Fire Area Walkdowns

A tour of accessible areas of the plant was conducted to assess general area conditions, work activities in progress, and the visual condition of the fire protection systems and equipment. Combustible materials, flammable and combustible liquids, and flammable gas usage were properly controlled in areas containing safety-related equipment and components. Items inspected included the position of selected valves, fire lockers, fire barrier conditions, hose stations, and the fire extinguishers for type, location, accessibility, and conditions. All of the installations and fire brigade equipment including emergency breathing apparatus were found to be functional and tested in accordance with the requirements established in the fire protection program. There were no construction activities in progress in the toured areas.

General plant housekeeping conditions were satisfactory and the licensee's administrative procedure governing housekeeping and control of combustibles were considered to be strong. However, the inspector encountered isolated examples of poor implementation of these procedures. Specifically, the inspector identified unattended lubricant cans near the condensate polishing pumps and cleaning rags that had been left in the cable spreading room after the completion of a work activity.

The licensee had experienced significant problems in the past few years with the fire barrier penetration seals. The problems involved defective initial construction, degraded seals because of poor work performance, surveillance test inspection problems with the penetration seals, and improper control of design changes that created or affected the penetration seals. The licensee initiated a major design modification change project which recently had been completed. During this inspection, the inspector verified that the seals had been properly installed in accordance with the established procedures.

The inspector also walked down the area where the licensee had installed Thermo-Lag as a fire barrier; these areas were the wing area at 21 feet elevation and diesel generator room and heating ventilation and air conditioning at 46 feet elevation. In accordance with NRC Bulletin 92-01 and its Supplement 1, the licensee had declared Thermo-Lag as an inoperable fire barrier and accordingly had instituted fire watches to meet the established requirements.

1.5 Plant Fire Brigade/Training

The licensee's fire brigade organization is composed of approximately 72 personnel from the plant operations and security staff. The on-duty shift fire brigade leader is normally one of the plant operators. The inspector reviewed the on-duty shifts for May 1993 and verified that sufficient qualified fire brigade personnel were on duty to meet established requirements.

In addition, the inspector verified that the licensee had provided one five-man fire brigade per shift in support of Waterford 3 Nuclear Station. The basic qualification requirements and training including physical were established. The inspector also reviewed selected lesson plans, training attendance records, and fire brigade drill records. This review confirmed that the licensee had covered the required training topics, provided the required drills and practice sessions, and met the required frequency of training elements.

1.6 Fire Brigade Equipment

The inspector checked the fire brigade equipment lockers located in the different areas of the plant. These lockers contained turnout gear (coats, boots, helmets, etc.). Based on this inspection, the designated fire brigade equipment appeared to be properly maintained and stored in ready condition. The inspector also inspected hose stations outside the plant. Each station appeared to have adequate equipment and had maintained the required inventory.

1.7 Appendix R Fire Protection Features

The inspector walked down Appendix R related suppression and detection systems, raceways, and the emergency lighting units in the following areas: cable spreading room, switch gear room, and diesel generator rooms. Based on this walk down, the inspector determined that above systems provided sufficient fire protection in these areas.

1.8 Fire Watches and Other Personnel

The inspector interviewed five fire watch individuals who stand fire watches at Waterford 3. All the personnel interviewed were found to be knowledgeable of their watch duties, responsibilities and the fire protection program at Waterford 3. The licensee had established a specific training program for individuals who had been classified as fire watch personnel. The inspector also verified that personnel were trained in accordance with the established procedures. Personnel assigned as fire watches for a particular day had no other duties on that day.

The inspector interviewed five other randomly selected licensee personnel to determine their understanding and knowledge of the fire protection program at Waterford 3. The individuals interviewed had adequate knowledge of fire

protection/prevention, which was apparently part of the licensee's indoctrination program.

1.9 Conclusions

The licensee had maintained an overall effective fire protection/prevention program. The licensee's administrative procedures and penetration modification project were considered strengths in the fire protection/prevention program. However, housekeeping weaknesses were noted.

2 LICENSEE ACTIONS ON PREVIOUS INSPECTION FINDINGS

(Closed) Inspection Followup Item 382/9314-02: Hydrogen Excess Flow Valve

This item involved the licensee's response to NRC Information Notice 87-20. The licensee identified that corrective action was required as documented in Condition Report 281951. The licensee proposed to replace a spring in Valve HG-122 in order to change the flow setting which was not to exceed more than 2 percent in case of a hydrogen line break. During the initial inspection, the inspector questioned the quality classification of the valve. However, the quality classification is not a requirement because there are three options provided as a guidance in the Standard Review Plan (NUREG-0800). These options are: hydrogen lines in safety-related areas should be designed to seismic Class I requirements; hydrogen lines in safety-related areas should be sleeved so that the water pipe is directly vented to the outside; or hydrogen lines in safety-related areas should be equipped with excess flow valves so that in case of a line break, the hydrogen concentration in the affected areas will not exceed 2 percent. The latter option was approved by the NRC staff.

During this inspection, the inspector reviewed the work authorization package for the replacement of the Valve HG-122 instead of only the spring. The licensee had performed calculations which showed that, in the case of a hydrogen line break, the hydrogen concentration would not exceed more than 2 percent. This is consistent with the NRC guidance provided in Standard Review Plan (NUREG-0800).

ATTACHMENT 1

1 PERSONS CONTACTED

1.1 Licensee Personnel

- *R. Allen, Manager Security & General Support
- *R. Azzarello, Director Design Engineer
- *T. Becker, Licensing Engineer
- R. Bennett, QA Supervisor
- R. Crawley, Safety
- M. Ferri, Training Manager
- *T. Gaudet, Operational Licensing Supervisor
- *A. Haase, Security Superintendent
- *A. Holder, Lead Senior Engineer Fire Protection
- T. Leonard, Technical Services Manager
- *D. Packer, General Manager Plant Operations
- O. Pipkins, Senior Licensing Engineer

1.2 NRC Personnel

- *E. Ford, Senior Resident Inspector
- *D. Garcia, Intern Resident Inspector

In addition to the personnel listed above, the inspector contacted other personnel during this inspection.

*Denotes personnel that attended the exit meeting.

2 EXIT MEETING

An exit meeting was conducted on May 21, 1993. During this meeting, the inspector reviewed the scope and findings of the report. The licensee did not identify as proprietary any information provided to, or reviewed by, the inspector.

ATTACHMENT 2

<u>Procedure No.</u>	<u>Title</u>	<u>Date</u>
FP-001-014 Revision 7	Duties of a Fire Watch	February 19, 1993
FP-001-023 Revision 3	Fire Protection Records	February 19, 1993
FP-001-015 Revision 9	Fire Protection System Impairments	February 19, 1993
FP-001-015 Revision 9	Hot Work Activities	February 19, 1993
FP-001-017 Revision 9	Transient Combustibles and Designated Storage Areas	February 18, 1993
FP-001-018 Revision 6	Pre-Fire Strategies	December 4, 1992
FP-001-019 Revision 4	Fire Brigade Equipment	September 3, 1991
FP-001-022 Revision 4	Design Change Fire Protection/Safe Shutdown Review	February 28, 1992
UNT-005-013 Revision 3	Administrative Procedure Fire Protection Program	August 17, 1992
ME-004-445 Revision 9	Maintenance Procedure Self-Contained Battery Powered Emergency Lighting Units	August 17, 1992
N592-410-01	Fire Brigade Training Lesson Plan Fire Brigade Drill	November 12, 1992
OP-903-056 Revision 8	Surveillance Procedure Fire Protection Functional Test	October 9, 1990
ME-003-006 Revision 5	Fire Barrier Penetration Seals	April 30, 1993
ME-003-004 Revision 4	Surveillance Procedure Fire Dampers	March 24, 1992
FP-001-015 Revision 9	Fire Protection System Impairments	February 19, 1993