ENCLOSURE 2

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Inspection Report: 50-382/95-20

License: NPF-38

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

Facility Name: Waterford Steam Electric Station, Unit 3

Inspection At: Waterford 3

Inspection Conducted: November 14-17, 1995, and January 16-18, 1996

Inspectors: William P. Ang, Senior Reactor Inspector, Engineering Branch
Division of Reactor Safety

Phillip M. Qualls, Reactor Inspector, Engineering Branch
Division of Reactor Safety

Approved: _____ 3-19-96
Chris A. VanDenburgh, Chief, Engineering Branch Date
Division of Reactor Safety

Inspection Summary

Areas Inspected: Routine, announced inspection of the licensee's fire protection program. Inspection Procedure 64704 was used.

Results:

Plant Support

- In general, the licensee had implemented an effective fire protection program. However, the inspector identified several fire system impairment compensatory action (fire watches) performance deficiencies (Section 1.6).

Summary of Inspection Findings:

- Inspection Followup Item 382/9520-01, regarding the licensee's revised definition of a continuous fire watch, was opened (Section 1.2).

- Violation 382/9520-02, Failure to Implement Fire Protection Program Fire Watch Procedures, was opened (Section 1.5).

- One Non-Cited violation for failure to initiate a condition report was identified (Section 1.5).

Attachments:

- Attachment 1 - Persons Contacted and Exit Meeting
- Attachment 2 - Waterford 3 Fire Protection Impairments/Fire Tours

DETAILS

1 FIRE PROTECTION/PREVENTION PROGRAM (64704)

1.1 Waterford 3 Fire Protection Requirements

The Operating License, NPF-38, for Waterford 3 requires, in part, that the licensee implement and maintain in effect all provisions of the approved fire protection program as described in the Updated Safety Analysis Report for the facility. Section 9.5.1 of the Waterford 3 Updated Safety Analysis Report contains the licensee's commitments for the Waterford 3 fire protection systems and fire protection program.

1.2 Review of Fire Protection Procedures

The inspectors reviewed the licensee's fire protection program as defined in the Updated Safety Analysis Report for the facility. The inspectors focused on the program requirements regarding fire protection system impairments and compensatory measures. Specifically, the inspectors reviewed the following fire protection program implementing procedures.

- UNT-005-013, "Fire Protection Program," Revision 5, dated November 29, 1995;
- UNT-005-013, "Fire Protection Program," Revision 4, dated June 22, 1994
- FP-001-15, "Fire Protection System Impairments," Revision 11, dated October 12, 1995;
- FP-001-014, "Duties of a Firewatch," Revision 9, Change 2, dated October 19, 1995
- FP-001-014, "Duties of a Firewatch," Revision 9, Change 1, dated October 20, 1993; and,
- UNT-006-011, "Condition Report," Revision 13, dated August 29, 1995.

The inspectors noted that Procedure FP-001-014, "Duties of a Firewatch," Revision 9, Change 2, dated October 19, 1995, had been revised to redefine a continuous fire watch. Section 5.2.1 of the revised procedure provided the following limitations for a continuous fire watch:

- Each location requiring a fire watch within a specified area will be patrolled once every 15 minutes with a margin of 5 minutes.
- A specified area is one or more locations, which are easily accessible to each other, that can be patrolled in 15 minutes.

- A specified area may consist of more than one fire area, so long as easy access can be demonstrated.

- Easily accessible means there are no key-locked doors, step-off pads, or hazards that would otherwise impede the continuous fire watch from patrolling the area within 15 minutes.

Prior to revising the procedure, the licensee reviewed the issue and concluded that the change would not decrease the effectiveness of their fire protection program. The inspector discussed the licensee's interpretation with a cognizant representative from the Office of Nuclear Reactor Regulation, who did not agree with the licensee's interpretation of the requirements for a continuous fire watch. Specifically, the licensee could not assign a continuous fire watch to visit more than one fire area, because the fire watch would be absent from a fire area requiring a continuous fire watch. The inspector contacted eight other Region IV licensees and determined that five licensees were using the same interpretation for a continuous fire watch. The remaining two were considering adopting the interpretation. The interpretation was based on a July 15, 1986, letter from the NRC to the licensee for the D.C. Cook facility, which allowed a single fire watch who was continuously positioned inside a single fire area to visit different zones in the fire area at 15 minute intervals. Therefore, the inspectors questioned the validity of the revised interpretation of a continuous fire watch and concluded that further NRC review was required. This item is open pending further evaluation of the requirements for a continuous fire watch (50-382/9520-01).

The inspectors determined that the fire protection program procedures provided adequate implementing instructions except as noted above. However, the inspectors also noted that the procedures and the process for identification of fire impairments and performance of compensatory actions was fragmented and cumbersome. As a result, it appeared that the process was vulnerable to missed and/or incorrect performance of compensatory fire watches. Licensee representatives acknowledged the inspector's observations and initiated a review of the fire impairment and compensatory action process subsequent to this inspection.

1.3 Plant Tour

The inspector accompanied a fire watch tour and observed other fire watch tours in progress. The inspector observed the various activities performed during the tour. The inspector noted that the fire watch personnel appeared to be well trained and performed a good tour of each item listed on the fire tour log. The fire watch logged in to various areas of the plant by means of a Morse Watchman. The Morse Watchman used bar codes on a fixed station, which the licensee would place in areas which required a fire watch tour. Using a hand held scanner, the fire watch electronically scanned each bar code during a fire watch tour. At the completion of a fire watch tour, the fire watch downloaded the scanned information into a computer, which identified any missed fire tour locations, thus, ensuring that the required compensatory

actions were accomplished. A fire watch tour took approximately 1/2 hour, so ample time would remain to return to any missed fire areas. The inspector noted that the Morse Watchman scan points were generally positioned in locations that required the fire watch to enter and perform a visual inspection of an entire fire area. In addition, the fire watch checked off each tour location on the fire watch log when that portion of the tour was performed.

1.4 Fire Watch Qualifications

The licensee had established a specific training program for individuals who were assigned as fire watch personnel. The fire watch training program was detailed in Nuclear Operations Training Plan N005-001-05, dated May 27, 1993. The inspectors reviewed the training documents and records for all security department personnel who were currently assigned fire watch duties. The inspectors verified that personnel were trained in accordance with the established training requirements and that the fire watch training of all security department personnel was current.

Fire watch personnel were responsible for informing the control room of a fire and for attempting to extinguish small fires. The inspectors interviewed 12 individuals that were assigned and performed fire watch tour duties concerning their duties and responsibilities. The inspector determined that the fire watch personnel were knowledgeable of the station fire watch duties, responsibilities, and general program requirements.

1.5 Fire Watch Log and Records Review

The fire protection license condition required implementation of the approved fire protection program. The fire protection program implementing Procedure UNT-005-013, "Fire Protection Program," Revisions 4 and 5, required compensatory actions for degraded fire protection systems. These compensatory actions that were specified in the Waterford 3 Technical Requirements Manual Sections 3/4.3.3.8, 3/4.7.10.2, 3/4.7.10.3.and 3/4.7.11. The Technical Requirements Manual also specified the compensatory measures that were required for each type of fire protection system impairment. These compensatory measures included continuous fire watch, hourly tours, or hourly barrier (door) checks.

Fire protection system impairments were controlled by licensee Procedure FP-001-15, "Fire Protection System Impairments." The procedure required that fire protection program impairments be identified and that compensatory actions be specified on impairment forms by the operations shift supervisor. Impairment forms were then sent to the security department for performance of compensatory actions (usually fire watch tours). A security shift supervisor transferred the information from the impairment form to a

fire watch tour log to specify areas and specifics of the fire watch tour. A security guard then performed the required tour and signed off on the fire watch log. As previously noted in Section 1.2 of this report, this process appeared to the inspectors to be vulnerable to missed or incorrectly performed fire watches.

A licensee letter to NRC Region IV, dated October 13, 1995, informed the NRC of several fire watch performance concerns that they had investigated. The letter stated that evidence existed to support three failures to follow licensee procedures for conducting fire tours.

- The first fire watch deficiency reported by the licensee concerned an anonymous telephone call the licensee received on July 28, 1995, which indicated that fire watch personnel were placing tape on fire doors to see if an area had been entered or a door had been opened. The fire watches then checked the tape on the door rather than making the required fire tours. The licensee's investigation identified tape or tape residue on eight doors; therefore, the licensee concluded that the fire watches were checking for tape on doors rather than completing required fire tours.

- The second fire watch deficiency reported by the licensee concerned a quality assurance surveillance that identified a failure to perform a required fire watch tour. During the surveillance, the quality assurance auditor waited inside Door 126 located in the reactor auxiliary building +7 elevation on August 18, 1995, to observe the performance of the 1 p.m. fire watch tour. The auditor waited inside the area until 1:52 p.m., but did not observe a fire watch enter the room; therefore, the auditor concluded that the tour inside the area was not performed. The auditor subsequently determined that the fire watch log had been signed indicating that the tour had been completed by the assigned fire watch. Condition Report 95-0690 was written to address this specific issue. Licensee Procedure FP-001-014, "Duties of a Firewatch," Revision 9, Change 1, dated October 20, 1993, required that the fire watch log be completed and maintained by the assigned fire watch and required that the fire watch check the fire watch log upon physical observation of the room or area. Technical Specification 6.8.1 required the licensee to maintain and implement procedures for various plant programs. Technical Specification 6.8.1.f specifically lists the fire protection program as requiring procedural implementation. The failure to implement the fire protection program procedures, as noted above, is the first example of a violation of Technical Specification 6.8.1.f (382/9520-02).

- The third fire watch deficiency reported by the licensee concerned a fire watch who signed for completion of a fire watch tour that was performed by another qualified fire watch. During the licensee's investigation of fire watch performance, a fire watch admitted to signing a fire watch log for a fire tour that was performed by another fire watch. Procedure FP-001-014, Revision 9, Change 1, dated

October 20, 1993, required that the fire watch log be completed and maintained by the assigned fire watch at all times during the fire tour. The licensee initiated Condition Report 95-0688 on April 17, 1995, to address this specific issue. Although the licensee could not identify the specific date or location of this occurrence, the failure to implement the fire protection program procedures is the second example of a violation of Technical Specification 6.8.1.f. (382/9520-02).

The inspectors reviewed the licensee's October 13, 1995, letter, the associated impairments, condition reports and investigation report and discussed these documents with licensee representatives. In addition, the inspectors reviewed additional fire impairment forms and fire watch logs. The additional fire system impairments and associated records reviewed by the inspectors are listed in Attachment 2 to this report. The inspectors noted performance deficiencies in 9 of the 20 fire system impairments. These performance deficiencies included:

- Fire Impairment 95-475, issued on October 6, 1995, recorded the reactor auxiliary building annulus fire detectors as out-of-service on October 6, 1995. Waterford 3 Technical Requirements Manual required the performance of a fire watch tour of the annulus area every 8 hours. Although the fire watch tour logs (for the period that the fire detectors were inoperable) required and verified performance of an hourly check of the annulus door, the area was not toured every 8 hours, as required by Procedure UNT-005-013, "Fire Protection Program," Revision 4, dated June 22, 1994. The detectors were returned to service and the impairment closed on October 8, 1995.

- Fire Impairment 95-224, issued May 25, 1995, recorded that a 3-hour fire barrier in the reactor auxiliary building holdup tank room was not installed. Licensee Procedure FP-001-015, Revision 11, Change 2, dated May 4, 1995, required the shift supervisor to forward a copy of the fire watch impairment form directly to the security shift supervisor and ensure receipt acknowledgement. The receipt for the impairment form was not signed by the security shift supervisor until August 11, 1995. The Waterford 3 Technical Requirements Manual required that an hourly fire tour of the area be conducted as a compensatory measure. Licensee Procedure UNT-005-013, "Fire Protection Program," Revision 4, dated June 22, 1994, required a fire watch tour of the reactor auxiliary building holdup tank room every hour when a rated 3-hour fire barrier is impaired. Fire watch tours for the impairment were not initiated until August 11, 1995. Therefore, the compensatory action for this fire system impairment was not performed for over 2 months. The licensee identified this deficiency and wrote Condition Report 95-0670, on August 11, 1995.

The inspectors noted that the licensee had performed a good investigation for the fire watch deficiencies they had identified and had initiated good corrective actions. For example, as indicated in Section 1.3 of this report, the licensee had installed and required the use of a Morse Watchman to provide

positive verification of fire watch tours in appropriate areas. However, the additional discrepancies identified by the inspectors indicated that compensatory fire watches were not being performed. The failure to implement the fire protection program procedures, as noted above, represent two additional examples of a violation of Technical Specification 6.8.1.f. (382/9520-02).

Due to the number and similarity of these occurrences, the licensee initiated Condition Report 95-691 on August 22, 1995, to analyze adverse trends in the security department. The condition report concluded that security department personnel were aware of management expectations and that the process would be improved by correcting the number of fire impairments that have been open for several years.

As previously indicated, the inspectors also reviewed the licensee's implementation of its corrective action program in relation to fire watch performance deficiencies. The inspectors noted that an erroneous fire tour was specified on the fire watch log for Fire Impairment 95-415. The impairment was initiated on September 19, 1995, for smoke detector impairments in seven fire areas. The compensatory measure for this impairment specified by the Waterford 3 Technical Requirements Manual is an hourly fire area tour. The handwritten entry in the fire watch logs at the time of initial log entry required an hourly fire tour of these areas. When the entry was typed into the printed log for fire tours the next day, the required action changed to a door check. A door check was continued in the logs for all areas until November 4, 1995. On November 4, 1995, the fire watch tour log was changed for six of the areas to the correct area checks. No condition report was written at that time. On November 11, 1995, the seventh tour area was corrected and a condition report was written for the one area only.

The inspectors noted that a condition report should have been issued on November 4, 1995, for the six identified deficient fire system impairment compensatory actions. Associated reviews of a condition report, had one been written, would have resulted in a review of the associated compensatory action for the seventh area (all seven areas were on the same impairment form) and proper fire tours would have commenced at a date prior to November 11, 1995, for the area that was not identified on November 4, 1995.

Licensee Procedure UNT-006-011, "Condition Report," Revision 13, dated August 29, 1995, required that a condition report be written when a condition adverse to quality is identified. Licensee personnel subsequently issued Condition Report 96-0063, on January 17, 1996, to document and review the failure to write a condition report for the incorrect fire system impairment compensatory actions specified by the fire watch tour log. The licensee had recognized site problems associated with condition report generation prior to the inspection. Condition report training was provided by the licensee to all site personnel prior to the second week of the NRC inspection. The condition report that was immediately issued for this inspection finding should result in adequate and prompt licensee corrective actions. The inspectors interviewed fire watch associated with the noted condition and determined that

a door check for the areas listed in the impairment required entry into the fire area. The licensee misapplication of the fire tour was of low safety significance. Therefore, the inspectors concluded that this failure constitutes a violation of minor significance and is being treated as a Non-Cited Violation, consistent with Section IV of the NRC Enforcement Policy.

The licensee indicated that the large number of fire system impairments was a significant contributor to the performance deficiencies that were being identified by both the licensee and the NRC. The licensee indicated that they had initiated a fire system impairment reduction program and had developed a goal of less than ten impairments at any given time. The inspectors agreed that attaining the goal of less than ten fire system impairments would significantly enhance plant safety and reduce compensatory action deficiencies.

ATTACHMENT 1

PERSONS CONTACTED AND EXIT MEETING

1 PERSONS CONTACTED

1.1 Licensee Personnel

* O. Pipkins, Licensing Engineer
* R. Killian, Quality Specialist, Technical Support
* R. Pollock, Audit Supervisor, Quality Assurance
* B. Abukhader, Electrical Design Engineer
* J. Houghtaling, Manager, Technical Services
* A. Holder, Fire Protection System Engineer
* R. Burski, Director, Nuclear Safety
* C. Thomas, Supervisor, Licensing
* D. Vinci, Manager, Licensing
* J. Ledet, Superintendent, Security
* G. Zetsh, Supervisor, Security Operations
* M. Von DerHorst, Training
* D. Keuter, General Manager, Plant Operations

1.3 NRC Personnel

* W. Ang, Senior Reactor Inspector
* P. Qualls, Reactor Inspector

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

* Denotes personnel that attended the exit meeting.

2 EXIT MEETING

Exit meetings were conducted on November 17, 1995, and January 19, 1996. During this meeting, the inspectors reviewed the scope and findings of the report. The licensee did not disagree with the findings documented in this report. The licensee did not identify as proprietary any information provided to, or reviewed by, the inspectors.

ATTACHMENT 2

WATERFORD 3 FIRE PROTECTION IMPAIRMENTS/FIRE TOURS

IMPAIRMENT	DATE	FORM NO	FIRE TOUR LOG DATE	FIRE TOUR LOG AREA	Condition Report	COMMENT
RAB +21 Hatch impaired for resin changeout	6/14/95	95-244	6/14/95	RAB hatch area check	None	None
RAB TK RM C - no penet seal thru 3 hr firewall	5/25/95	95-224	5/25/95 to 8/12/95	RAB +21 area inside Door 211	95-0670	Condition report ID fire watch not initiated until 8/11/95
Door closure malfunction RAB -4 Door 149	8/25/95	95-356	8/25/95 day 8/25/95 night	RAB -4 Door 149 door check. RAB -4 All corridors of -4 RCA with the exception of Door 161	95-1132	Condition report ID on 11/4/95 wrong door number and location was typed - condition report disposition indicates other fire tours in area occurred
INOP fire damper DG Room A	6/26/92	92-313	Various 5/25-11/6/95	RAB +21 room check inside Door 23	None	None
INOP fire damper DG Room B	6/26/92	92-313	Various 5/25-11/6/95	RAB +21 room check inside Door 25	None	None
INOP fire damper BA conc Room A	6/26/92	92-313	Various 5/25-11/6/95	RAB -4 room check inside Door 220	None	None
INOP fire damper BA conc Room B	6/26/92	92-313	Various 5/25-11/6/95	RAB -4 room check inside Door 221	None	None
INOP fire damper BA conc Room C	6/26/92	92-313	Various 5/25-11/6/95	RAB -4 room check inside Door 222	None	None
Nonconforming fire detection system - modular MCC bldg/ equip hatch area (Door 191)	12/13/91	91-564	Various 5/25-11/6/95	FHB +1 (Modular MCC bldg) equip hatch area chk	None	None

IMPAIRMENT	DATE	FORM NO	FIRE TOUR LOG DATE	FIRE TOUR LOG AREA	Condition Report	COMMENT
Missing conduit seals TGB +15 Room 250	3/14/94	94-185	Various 1/1-11/3/95	TGB +15 area check near Door 193	None	None
Door malfunction Door 59 TGB +15	7/6/95	95-269	7/6/95	TGB +15 room check inside Door 59	None	None
Door impaired CCW Room A/B RAB + 21 Door 39	9/8/95	95-385	9/8/95-10/6/95	RAB +21 Door chk Door 39	None	None
INOP smoke detector RAB +46 SWGR EQ RM	9/5/95	95-415	9/19/95-11/9/95	*	96-063	* SEE BELOW
INOP smoke detector RAB +46 HVAC CONTR RM	9/5/95	95-415	9/19/95-11/9/95	*	96-063	* SEE BELOW
INOP smoke detector RAB +46 HVAC EQ RM	9/5/95	95-415	9/19/95-11/9/95	*	96-063	* SEE BELOW
INOP smoke detector RAB +69 HVAC RM	9/5/95	95-415	9/19/95-11/9/95	*	96-063	* SEE BELOW
INOP smoke detector RAB +69 ELEV MACH RM	9/5/95	95-415	9/19/95-11/9/95	*	96-063	* SEE BELOW
INOP smoke detector RAB +46 DEC/HOT MACH SHOP H&V RM	9/5/95	95-415	9/19/95-11/9/95	*	95-1155 96-063	* SEE BELOW
INOP smoke detector +46 VESTIBULE	9/5/95	95-415	9/19/95-11/9/95	*	96-063	* SEE BELOW
INOP RAB Annulus Fire Detectors	10/6/95	95-475	10/6/95-10/8/95	RAB +21 hourly Annulus door check	96-063 issued 1/17/96	Required compensatory action on impairment for was an area fire watch patrol every 8 hours

* Required compensatory action for Impairment 95-415, inoperable smoke detectors, was an hourly area fire watch patrol. Initial fire watch log handwritten entry on 9/19/95 day required area checks. Typed 9/19/95 night fire watch log entry required door checks. 11/4/95 log changed six of seven areas to room checks - no condition report written. Seventh area corrected to room check on 11/9/95; Condition Report 95-1155 issued for one area only.