

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

REGION I

Report No. 50-213/80-04

Docket No. 50-213

License No. DPR-61 Priority -- Category C

Licensee: Connecticut Yankee Atomic Power Company

P.O. Box 270

Hartford, Connecticut 06101

Facility Name: Haddam Neck Plant

Inspection At: Haddam Neck, Connecticut

Inspection Conducted: March 18-21, 1980

Inspectors: *J. H. Smith*
T. H. Smith, Reactor Inspector

6/25/80
date

date

date

Approved by: *B. R. Keimig*
B. R. Keimig, Chief, Reactor Projects
Section No. 1, RO&NS Branch

6-25-80
date

Inspection Summary:

Inspection on March 18-21, 1980 (Report No. 50-213/80-04)

Areas Inspected: Routine, unannounced inspection by a regional based inspector (20 hours) of emergency procedure conformance to Westinghouse Small Break Loss of Coolant Operator Guidelines and status of licensee investigation concerning contamination discovered on plant property outside the radiologically controlled area.

Results: No items of noncompliance were identified.

DETAILS

1. Persons Contacted

D. Bement, Nuclear Records Supervisor
H. Clow, Health Physics Supervisor
*J. Ferguson, Station Services Supervisor
S. Fleming, Training Supervisor
*R. Graves, Station Superintendent
W. Nevelos, Rad Waste Foreman

The inspector also interviewed and talked with other licensee personnel during the course of the inspection including management, operations and clerical personnel.

*Denotes those present at the exit interview.

2. Review of Licensee Small Break Loss of Coolant Accident (SBLOCA) Emergency Procedures

The inspector reviewed the licensee's SBLOCA emergency procedures. A summary of the findings is noted in the following sections.

a. Procedure Review

- (1) The inspector reviewed the following licensee procedures against the NRC staff approved Westinghouse SBLOCA guidelines:
 - EOP 3.1-45C, Diagnostic and Immediate Action for Safety Injection and Recovery from Spurious Actuation of Safety Injection, Revision 1, January 19, 1980.
 - EOP 3.1-4C, Loss of Coolant, Revision 11 (major), January 18, 1980.
- (2) Based on the review, the inspector verified the following:
 - The licensee's procedures closely follow the guidelines established by their Nuclear Steam System Supplier (NSSS).
 - Symptoms include a diagnostic chart which clarifies symptoms to channel operator actions into the correct emergency procedures.
 - Symptoms contain sufficient diversity to clearly identify the particular emergency.
 - All items addressed in the NSSS guidelines for immediate actions are included in the licensee's procedures.

- Licensee procedures follow the same format as the NSSS guidelines.
- Precaution statements are incorporated in the appropriate procedural locations and are consistent with NSSS guideline precautions.

Within the areas inspected no discrepancies were identified. Additional review of procedural adequacy, as it relates to the operators' ability to use the subject procedures, will be addressed in a future NRC inspection.

b. Training Requirements

Formal classroom presentations were provided on December 4, 7 and 14, 1979. The training consisted of presentations, by a corporate office engineer, on Loss of Coolant Accident Analyses, and presentations by on-site training personnel covering EOP 3.1-4C and EOP 3.1-45C. The content of the presentations appeared to cover adequately the desired subject material. No discrepancies were identified in the area of operator training.

c. System Considerations

(1) Pressurizer PORV Indication

The inspector verified that the emergency procedures directed the operators to monitor the several indications available in the control room which indicate the position of the pressurizer power operated relief valves (PORV). These indications include indicator lights on the PORV control switches which indicate the existence of an open/close signal to the valves; acoustically activated pressurizer relief valve open panel alarms; relief line thermocouple indications; and pressurizer relief tank level and pressure indications.

(2) Reactor Coolant System (RCS) Loop Isolation Valves

As required by the standard Westinghouse guidelines, the licensee's emergency procedures contain a warning against using the RCS loop isolation valves in attempting to isolate the source of a loss of coolant.

(3) Resetting Safety Injection System (SIS) Signal

The inspector verified that the emergency procedures contain a warning statement to alert operators that after the SIS signal is blocked, an automatic actuation of Emergency Core Cooling Systems (ECCS) would not occur. The procedures, however, do not

contain a statement warning operators that manual manipulation of ECCS equipment onto emergency power sources would be required if offsite power was lost some time after safety injection had occurred. This item is considered unresolved pending a procedure revision which the licensee has committed to make prior to the end of the upcoming refueling outage (213/80-04-01).

(4) Containment Isolation

The emergency procedures require that the operator initiate containment isolation if conditions warrant and it has not occurred automatically, or verify that auto isolation has functioned properly. In addition, the procedures require that appropriate system integrity is verified prior to opening any valve closed by the containment isolation system to ensure a potential release path is not created.

(5) Manual Switchover from Injection to Recirculation

The inspector verified that the switchover from ECCS injection from the refueling water storage tank (RWST) to recirculation from the containment sump will be accomplished prior to exhausting the supply of water in the RWST.

(6) Caution Notes

The inspector verified that caution notes are placed at appropriate steps in the procedures.

(7) Reactor Coolant Pump (RCP) Trip Criteria

Using the Westinghouse guidelines, the licensee calculated the RCS pressure which would require manually tripping the RCP's, however, due to a unique system configuration, RCP's are tripped manually well before this pressure would be reached. At Haddam Neck, when ECCS systems receive an actuation signal, the containment isolation system also receives a signal to isolate the containment. Containment isolation secures component cooling water to the RCP's which requires their shutdown to prevent pump damage. The trip pressure calculated, using the Westinghouse guidelines, was less than the 1700 PSIG pressure which would initiate ECCS, cause containment isolation, and require RCP's to be tripped manually by the operator at the Haddam Neck plant.

In the area of system considerations, no discrepancies were identified other than the unresolved item noted in (3) above.

3. Investigation of Radioactive Contamination Outside the Radiologically Controlled Area

The licensee initially reported the discovery of spots of soil contamination to the NRC on March 13, 1980. These spots were found during a routine survey of a grassy area south of the plant inside the owner controlled area. The initial spots of material were removed for disposal and the surveying of other areas around the plant was begun. To date, approximately 30 spots of soil contamination have been discovered. Area surveys are continuing.

Isotopic analysis showed the majority of the spots contained fission product activity. The most likely source of the material is the plant stack. Dispersal of the material may have been caused by any one of several events which occurred in 1979 which resulted in air or steam being released through the ventilation system and out the stack stripping contaminated material from the inside surfaces of the stack.

One spot contained Cobalt-60. Its probable origin was from materials which had been stored previously in the area.

The activity levels of the material found to date are less than that allowed by Federal regulations in uncontrolled areas.

The licensee is continuing the investigation the results of which will be reviewed in a future NRC inspection.

4. Exit Interview

The inspector met with licensee representatives (denoted in Paragraph 1) at the conclusion of the inspection. The inspector summarized the scope and findings of the inspection as detailed in this report.