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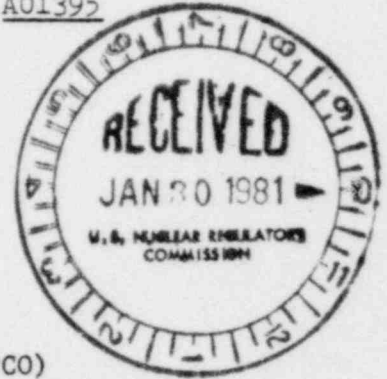
CONNECTICUT YANKEE ATOMIC POWER COMPANY

BERLIN, CONNECTICUT
P. O. BOX 270 HARTFORD, CONNECTICUT 06101

January 5, 1981

Docket No. 50-213
A01395

Mr. Boyce H. Grier, Director
Region 1
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, PA 19406



Reference: (1) B.H. Grier letter to W.G. Council (CYAPCO)
dated November 21, 1980 transmitting I&E Bulletin
No. 80-24, (Docket No. 50-213)

Gentlemen:

Haddam Neck Plant
Response to I&E Bulletin No. 80-24

In reference (1) Connecticut Yankee Atomic Power Company (CYAPCO) was requested to take appropriate action in response to I&E Bulletin No. 80-24.

The Haddam Neck Plant has one open water system present inside containment which is service water to the containment air recirculation (CAR) fan coolers. The system description for this system as requested in item 1 of Bulletin No. 80-24 is provided as attachment (1) except for item 1.h which is addressed below in item 2.a. Attachment (2) contains the system description for the auxiliary containment spray system from the fire header which, although it does not meet all the criteria for an open system as described in the Bulletin, is included because it does utilize an indefinite volume (Connecticut River) as its source.

The following items refer to the actions to be taken by licensees with open cooling water systems in this Bulletin:

2. a. Haddam Neck currently has level indicators in both the incore and containment sumps. They provide signals to the Main Control Board (MCB) which serve two functions:
 1. Alarm
 - a. High/low level alarm for containment sump.
 - b. High level alarm for incore sump.
 2. Indication
 - a. Strip chart and metered level indication (% level) for containment sump.
 - b. Metered level indication % level for incore sump.

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Redundant level detection and indication for the containment sump are currently being installed as part of the TMI action items for NUREG-0737. Also considered as a redundant means of leakage detection are the weekly inspections of containment by operations personnel (SUR 5.1-22).

- b. Manual operation of the containment sump pumps daily by operations personnel based on the strip chart showing percent level in the containment sump provides a positive means to determine flow from the containment sump.
- c. Haddam Neck has a Normal Operating Procedure (NOP 2.2-2) which requires the operator to read and record the containment sump and incore sump levels each shift. The sump pumps are manually controlled and the sumps are pumped down whenever a high level is reached (normally daily). The net volumetric change in the containment sump is calculated and plotted daily in accordance with Surveillance Procedure SUR 5.1-2. As addressed earlier, an added surveillance measure is the weekly inspection of containment by operations personnel.

Haddam Neck will generate an Annunciator Procedure describing actions to be taken on a high containment sump level alarm. A similar procedure currently exists for the incore sump high level alarm (ANN 4.7-10). Additional procedures will be generated addressing the loss of detection or removal capabilities to include limitations on continued power operation in that event.

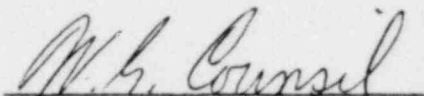
- d. Haddam Neck is in compliance with all aspects of item d (i.e., item 2.a for detection systems and weekly containment entries by operators, and isolation capability as described in item 1.f).
 - e. Weekly containment inspections to check for water leakage, amongst other items, are currently being performed.
 - f. Existing reporting procedures cover the reporting requirements. (EP 1.5-2)
- 3. No history exists of closed cooling water system leakage.
 - 4. Redundant level detection and indication will be installed by July 1, 1981. The procedures described in item 2.c above will be implemented at the time of the installation of the redundant level system, July 1, 1981.

It is estimated that 80 manhours were expended in the conduct of the review and preparation of this report.

We trust you find this information responsive to the reference (1) request.

Very truly yours,

CONNECTICUT YANKEE ATOMIC POWER COMPANY

A handwritten signature in cursive script, appearing to read "W. G. Council", written over a horizontal line.

W. G. Council
Senior Vice President

Service Water to Containment Air Recirculation
Fan Coolers

1. a. The Containment Air Recirculation (CAR) cooling coils provide cooling for the CAR fan motors, steam condensation, heat removal and pressure reduction capabilities for the containment during LOCA conditions. Normal operation has all four (4) fans/coolers operating with at least three (3) working during a LOCA.
- b. Four (4) six inch service water lines supply water from the Connecticut River to the CAR cooling coils.

Typical chemical content of the service water (Connecticut River):

<u>Item</u>	<u>Range</u>
ph	7.0-8.75
Dissolved O ₂	1-14 ppm
Chlorides	8-12 ppm
Conductivity	100-125 μ mhos

- c. The piping is carbon steel. The cooler tubes are 90/10 copper nickel alloy from the Aerofin Corporation.
- d. For several years prior to Haddam Neck's 1977 refueling outage there were a series of minor CAR cooling coil leaks (Finned Arsenal Admiralty Tubes).
- e. The Admiralty tubes were replaced with the Aerofin tubes during the 1977 refueling outage.
- f. Isolation of the four service water lines to and from the CAR coolers can be performed individually in the Primary Auxiliary Building.
- g. Justification for exemption from local leak rate testing in accordance with Appendix J to 10 CFR 50 for these penetrations has been provided in a letter to A. Schwencer (NRC) from D.C. Switzer (CY) dated August 8, 1977, "Haddam Neck, Additional Information, Proposed Exemptions to 10 CFR 50 Appendix J."
- h. See item 2.a for sump level detection capability. The return flow rate of each of the four service water lines is recorded once per shift.
- i. As part of Haddam Neck's Radiation Monitoring System (RMS) contamination of the service water exiting the containment is continually monitored with an online sampling system. Alarmed indication on the Main Control Board warns operators of increasing radiation levels in the service water.

Auxiliary Containment Spray from Fire Header

1. a. During routine reactor operation river water in the fire header is isolated from the containment. In response to a situation where the containment spray system is required but the normal source of water for that system is not available, the fire header can be lined up to the containment spray system.
- b. The source of water to the yard loop fire header is the Connecticut River.

Typical chemical content of the fire header water (Connecticut River):

<u>Item</u>	<u>Range</u>
ph	7.0-8.5
Dissolved O ₂	10-14 ppm
Chlorides	8-12 ppm
Conductivity	100-125 μ hos

- c. The piping is eight (8) inch carbon steel.
- d. The auxiliary containment spray system supply has no history of leakage.
- e. There is no history of repairs to this system.
- f. A motor operated valve (FP-MGV-31) is normally closed through all modes of operation but can be opened to lineup the fire header to the containment spray system.
- g. The valve is tested every refueling in accordance with Appendix J to 10 CFR 50 and has never had a problem with leakage.
- h. See item 2.a.
- i. There are no return lines associated with this system.