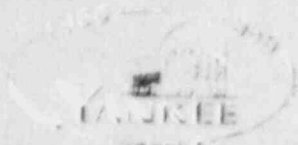


YANKEE ATOMIC ELECTRIC COMPANY

Telephone (617) 872-8100
TWX 710-380-7619



1671 Worcester Road, Framingham, Massachusetts 01701

2.C.2.1
FYR 85-66

June 18, 1985

United States Nuclear Regulatory Commission
Region I
631 Park Avenue
King of Prussia, PA 19406

Attention: Mr. Thomas E. Murley
Regional Administrator

References: (a) License No. DPR-3 (Docket No. 50-29)
(b) USNRC Letter to YAEC, dated May 16, 1985
(c) Telephone Communications Between Dr. M. M. Shanbaky (USNRC)
and G. Papanic on June 10 and 11, 1985

Subject: Request for Additional Information From Inspection Number
50-29/85-05

Dear Sir:

In your letter, Reference (b), you requested a description of actions taken or planned concerning our ability to collect representative samples. The date for submittal of this information was modified to June 28, 1985 [Reference (c)].

We hereby submit the following attachment in response to your request.

If you have any questions regarding this submittal, please contact us.

Very truly yours,

YANKEE ATOMIC ELECTRIC COMPANY

George Papanic Jr.
G. Papanic, Jr.
Senior Project Engineer
Licensing

GP/glw

cc: Atomic Safety and Licensing Board Service List

Director, Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, DC 20555

8507090514 850618
PDR ADOCK 05000029
Q PDR

1/1
1E 06

ATTACHMENT 1

Inspection No. 50-29/85-05

NRC Finding

4.5.a. There is no pump in the RCS sample lines. Instead, the system relies on RCS pressure to create flow through the PASS. The system has not been tested below a primary system pressure of 90 psi. The licensee plans to make low pressure tests during the next outage.

Yankee Response

As mentioned above, prior to this audit, Yankee had already planned to verify the capability to draw a sample through the PASS at low pressures during the next scheduled refueling outage. This test will include sample collection with the system depressurized.

NRC Finding

4.5.b. The coolant sample is taken from each of the four cold leg loops. In order to obtain a representative sample, coolant must be circulating in the loop from which the sample is being obtained. Under certain accident conditions, natural circulation in a loop may not be adequate to assure that the sample provides information representative of core conditions.

Yankee Response

Following any accident where the Main Coolant System (MCS) pressure boundary remains intact, decay heat is removed by natural circulation of primary coolant from the core to the steam generators and back through the loop into the core. This natural circulation is the only method for mixing anywhere in the MCS. Therefore, no matter where a sample is taken from the MCS, the representativeness of the sample is limited by the amount of mixing resulting from natural circulation flow only. For this reason, the Yankee design

provides the capability to sample from each loop. The selection of the loop to sample would be based on the loop removing the most decay heat, i.e., with the highest natural circulation flow.

NRC Finding

4.5.c. It has not been demonstrated that samples can be obtained from all four cold leg sample points.

Yankee Response

As discussed in the response to Item 4.5.a., Yankee will be performing low pressure tests during the next scheduled refueling outage. At the same time, Yankee will demonstrate the capability to obtain a sample from all four cold leg sample points.

NRC Finding

4.5.d. The system is not designed to collect a sump sample.

Yankee Response

As stated in this report, Regulatory Guide 1.97 specifies grab samples for the containment sump. NUREG-0737, Item II.B.3, does not specify this requirement, and neither does the staff's clarification letter, dated August 2, 1982. An additional clarification letter (NYR 82-231), dated October 8, 1982, specifically stated, "Regulatory Guide 1.97 is recognized as a recommendation and not a requirement. When Regulatory Guide 1.97 becomes a requirement for operating reactors, there will be a schedule established solely for the purpose of meeting the new requirements. Until then, it serves as a staff guideline for our review."

To date, a schedule has not been established to meet the requirements of Regulatory Guide 1.97. Yankee has reviewed Regulatory Guide 1.97 and provided a report describing the instrumentation used, FYR 83-81, dated August 30, 1983. This report stated that primary coolant samples only were obtained.

However, following a Loss-of-Coolant Accident (LOCA) where the Emergency Core Cooling System (ECCS) is operating in the recirculation mode, water in the containment sump would be representative of core conditions since this water is being pumped through the core to remove decay heat. Therefore, Yankee will add the capability to collect a sample from the discharge of the safety injection pumps at the PASS panel during the Cycle 19 refueling outage. This sample would be from the containment sump and representative of the water in the reactor core.

NRC Finding

4.5.e. The system purge time has not been verified on the basis of an analysis using line volume and flow rate. The system does not contain a flow rate meter, but relies on the initial system pressure and the drop in pressure during flow as an indicator that proper system flow is being maintained.

Yankee Response

As stated above in the response to Items 4.5.a. and 4.5.c., Yankee will verify the capability to sample from all sample locations and at low system pressures during the next refueling outage. During this testing, Yankee intends to establish system purge times based on an analysis using line volumes and measured flow rates. Yankee will also establish initial system pressures and pressure drops during flow as a means of verifying that adequate flows are being maintained during purging to ensure a representative sample is collected.

NRC Finding

6.3 The licensee's current installation does not technically meet the requirements of NUREG-0737. However, the licensee has already self-identified the deficiencies and initiated action to resolve the technical inadequacies by the installation of a completely redesigned system. This item will be considered unresolved pending timely completion of the licensee's corrective measures as indicated (50-29/85-05-05).

Yankee Response

A design change for the vent stack high level iodine sampler has been prepared which provides for the installation of a new grab sample system to monitor high range primary vent stack effluent. This system will allow iodine and particulate effluent samples to be collected via an in-line filter/cartridge sampler. The system will consist of a sample nozzle, sample line, removable sample cartridge, locally operated sample pump, flow indicator and valving. The sample nozzle will be located in the main sample line which is also used as the normal iodine monitor channel. A slip stream flow will be taken isokinetically by the sample nozzle from the main sample line into the sample cartridge. The sample then continues through the pump and flow meter to the main sample return line. The new system will be heat traced and insulated to be compatible with the main sample system. The new sample system and its location have been reviewed to assure that personnel taking samples will not be exposed to radiation doses in excess of the limits set by NUREG-0737. The new system will be installed by August 1985 and be tested and verified by the end of the year.