

Docket No.: 50-271

Mr. R. W. Capstick
Licensing Engineer
Vermont Yankee Nuclear Power Corporation
1671 Worcester Road
Framingham, Massachusetts 01701

MAR 25 1986

Dear Mr. Capstick:

SUBJECT: NUREG-0737 ITEM II.F.1-3 "CONTAINMENT HIGH RANGE RADIATION
MONITOR"

We have completed our review of your November 22, 1985 submittal on this subject and find that sufficient information has been provided to demonstrate that the objectives of Attachment 3 of Item II.F.1 of NUREG-0737 have been satisfied, when we consider your proposed technical deviation from the criteria related to high range monitor location.

Our Safety Evaluation is enclosed. This completes our review of NUREG-0737 Item II.F.1-3 for your facility.

Sincerely,

Original signed by
Daniel R. Muller

Daniel R. Muller, Director
BWR Project Directorate #2
Division of BWR Licensing

Enclosure:
As stated

cc w/enclosure
See next page

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Mr. R. W. Capstick
Vermont Yankee Nuclear Power Corporation
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cc:

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF
NUCLEAR REACTOR REGULATION
RELATING TO VERMONT YANKEE LOCATION OF CONTAINMENT HIGH RANGE MONITORS
VERMONT YANKEE NUCLEAR POWER CORPORATION
VERMONT YANKEE NUCLEAR POWER STATION
UNIT-1
DOCKET NO. 50-271

1.0 INTRODUCTION

The licensee, Vermont Yankee Nuclear Power Corporation, in its letter, dated November 22, 1985, has provided information and justification for their request for a technical deviation from NUREG-0737, Item II.F.1(3). This criterion states, in part, "Redundant - A minimum of two physically separated monitors (i.e., monitoring widely separated spaces within containment)." The staff finds the Licensee's request acceptable.

2.0 DISCUSSION AND EVALUATION

On November 22, 1985, the Vermont Yankee Nuclear Power Corporation submitted for staff review a technical justification for the location of the In-containment High Range Radiation Monitors (CHRRM). The review criteria used by the staff included the guidance of Section 2.1.8.6 of NUREG-0578, "TMI-2 Lessons Learned Task Force Status Report and Short-Term Recommendations", Item II.F.1 of NUREG-0660, "NRC Action Plan Developed as a Result of the TMI-2 Accident", Item II.F.1(3), of NUREG-0737, "Clarification of TMI Action Plan Requirements," Regulatory Guide 1.97, "Instrumentation for Light Water Cooled Nuclear Power Plant to Assess Plant and Environs Conditions During and Following an Accident", and Chapter 12 of NUREG-0800 (SRP). The review also considered information from NSAC 17 (Nuclear Safety Analysis Center, "Design for Post-Accident Radiological Conditions" (December, 1980).

As currently installed, Vermont Yankee's two CHRRM's can measure between 1 R/hr and 10⁷ R/hr. They are located approximately at the midplane of the containment, about 12 feet apart, on each side of the equipment hatch. From this position, the monitors view approximately 70% of the containment air volume. The space monitored within containment is essentially the same for both instruments. The monitors have the range and response requirements of Table II.F.1-3, NUREG-0737. It is the staff position that the Vermont Yankee's two CHRRM's meet the criteria of Item II.F.1(3) of NUREG-0737, except for the Redundant Criterion, which states in part "Redundant - A minimum of two physically separated monitors (i.e., monitoring widely separated spaces within containment).

As part of its justification for having the monitors only 12 feet apart, the licensee indicated that the chosen location was based on (1) the relatively small size of the drywell, with limited location sites that were not congested with piping and structural members and (2) the licensee's understanding of the NUREG-0578 siting criteria

back in 1980 (when the monitors were installed). In addition, the licensee used extra siting criteria for its CHRRM's. Briefly, these are as follows:

- (a) the monitors should "view" only containment air,
- (b) the monitor's "view" should be well defined, so that it is calibrated adequately,
- (c) the monitors should "view" the same volume, and
- (d) the location should include ALARA consideration.

The staff has reviewed the licensee's siting criteria for the station's two CHRRM's and finds them acceptable.

CONCLUSION

It is the staff's position that the Vermont Yankee's two CHRRM's are as widely separated as is reasonably achievable without compromising other criteria specified in NUREG-0737, II.F.1-3. The current location provides an acceptable technical deviation from the redundancy criterion.

Principal Contributor: M. A. Lamastra

Date: March 25, 1986