JUL 16 1985

Docket No. 50-271

Vermont Yankee Nuclear Power Corporation
ATTN: Mr. Warren P. Murphy
Vice President and Manager
of Operations
RD 5, Box 169
Ferry Road
Brattleboro, Vermont 05301

Gentlemen:

Subject: 50-271/84-11

On August 17, 1984, you were informed of the results of a special inspection which reviewed your post accident sampling and monitoring capabilities relative to the specifications of NUREG-0737 (NRC Inspection 50-271/84-11). In response to an apparent violation identified relative to placement of Containment High-Range Radiation Monitors (Item II.F.13 of NUREG-0737), you took exception to the finding in letters dated September 24, 1984 and January 9, 1985, and submitted a written justification for the installation in a letter dated January 25, 1985.

Your justification has been evaluated by the Office of Nuclear Reactor Regulation - Radiological Assessment Branch. Their Safety Evaluation Report is attached. The report concludes that the locations for the Containment High-Range Radiation Monitors are an unacceptable alternative to the position of NUREG-0737, II.F.13.

Consequently, you are required to respond within thirty days of the date of this letter, to the Notice of Violation relative to this matter as originally referenced in our letter dated August 17, 1984. It is requested that your response be made and affirmed in accordance with the requirements of 10 CFR 50.54(f), "Conditions of License", to enable this office to determine if your license should be modified relative to this matter.

Your cooperation with us in this matter is appreciated.

Sincerely,
Original Signed By:
Ronald R. Bellamy/bcm
Thomas T. Martin, Director
Division of Radiation Safety
and Safeguards

Attachment: As Stated

OFFICIAL RECORD COPY

IE 06

cc w/encls:
Mr. R. W. Capstick, Licensing Engineer
Mr. W. F. Conway, President and Chief Executive Officer
Mr. J. P. Pelletier, Plant Manager
Mr. Donald Hunter, Vice President
Mr. Cort Richardson, Vermont Public
Interest Research Group, Inc.
Public Document Room (PDR)
Local Public Document Room (LPDR)
Nuclear Safety Information Center (NSIC)
NRC Resident Inspector
State of New Hampshire
State of Vermont

bcc w/encl:
Region I Docket Room (with concurrences)
~~Senior Operations Officer (w/o encls)~~
DRP Section Chief

RI:DRSS	RI:DRSS	RI:DRSS
White	Shaubaky	Bellamy
7/8 /85	7/7 /85	7/9 /85

OFFICIAL RECORD COPY

ATTACHMENT 1

RADIOLOGICAL ASSESSMENT BRANCH

SAFETY EVALUATION REPORT

REGARDING THE

LOCATION OF CONTAINMENT HIGH RANGE RADIATION MONITORS

AT

VERMONT YANKEE NUCLEAR POWER STATION

By submittal dated January 25, 1985, the Vermont Yankee Nuclear Power Corporation, in response to NRC Region I concerns, provided a technical justification for the location of the Vermont Yankee in-containment high-range radiation monitors (CHRRM) for review by the NRC. Following discussions with Region I personnel, the Radiological Assessment Branch has conducted an evaluation of the licensee's rationale for the location of the Vermont Yankee CHRRMs. The criteria used for this review included the guidance of Section 2.1.8.b 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.(3) of NUREG-0737, "Clarification of TMI Action Plan Requirements," Item II.F.1(3), Regulatory Guide 1.97, "Instrumentation for Light Water Cooled Nuclear Power Plants to Access Plant and Environs Conditions During and Following an Accident", and Chapter 12 of the Standard Review Plan. The review also considered information from NSAC 17 (Nuclear Safety Analysis Center), "Design for Postaccident Radiological Conditions" (December, 1980).

Vermont Yankee's two CHRRM's have the capability to measure between 1R/hr to 10^7 R/hr and are located at approximately midplane of containment about 12 feet apart on each side of the equipment hatch. From this position the monitors view approximatley 25% of the containment volume. The space monitored within containment is essentially the same for both instruments. The monitors, as currently installed, have the range and response requirements of Table II.F.1-3, NUREG-0737. However, it is the staff position that a 12 foot separation is not sufficient to provide independent measurement, and they do not view a large fraction of the containment volume nor do they view different spaces within the containment. These requirements of NUREG-0737 were specifically highlighted as "changes to previous requirements and guidance" and are considered essential to the staff because they minimize the potential for a single event to disable both monitors and minimize the potential for false readings due to local irregularities. The monitors do meet the other requirements of NUREG-0737, II.F.1(3).

We recommend that the locations for the CHRRM's, as described by the licensee, be considered an unacceptable alternative to our positions in NUREG-0737, II.F.1(3). Either the high-range monitors should be moved to widely separated locations in accordance with our position in NUREG-0737, II.F.1(3), or the licensee should propose equivalent, compensating measures for our consideration.

For the particular matter of location, the current RAB review considered the following guidelines and recommendations:

(1) the CHRRM's should be redundant and physically separated per NUREG-0578, 0660, 0737, and RG 1.97; and monitor widely separated spaces within containment, per NUREG 0737;

(2) CHRRM's should be widely separated and view a large fraction of containment volume per NUREG-0737, and RG 1.97;

(3) the purpose of CHRRM's is detection of significant releases, release assessment, long-term surveillance, emergency plan actuation per RG 1.97;

(4) the objectives of post-accident radiation monitoring, as outlined in NSAC 17, which include indication of:

(a) fission product barrier breach,

(b) system or area where radioactivity has been released,

(c) release size,

(d) trends and sudden changes in accident conditions,

(e) effects of control measures,

(f) potential radiological release data.

(5) locations and functions are consistent with environmental and radiation qualifications and conditions as indicated by NUREG-0578 and 0737, RG 1.97, and outlined in NSAC 17.

(6) the CHRRM's are intended to measure containment radiation levels primarily from airborne radioactivity.