VERMONT YANKEE
NUCLEAR POWER CORPORATION

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REPLY TO:
ENGINEERING OFFICE
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FRAMINGHAM, MASSACHUSETTS 01701
TELEPHONE 617-872-8100

March 5, 1984
FVY 84-17

United States Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Office of Nuclear Reactor Regulation
Mr. Domenic B. Vassallo, Chief
Operating Reactors Branch No. 2
Division of Licensing

References: (a) License No. DPR-28 (Docket No. 50-271)
(b) Letter, VYNPC to USNRC, Proposed Change No. 78, Supplement 1 to Facility Operating License No. DPR-28, dated January 23, 1984
(c) Letter, VYNPC to USNRC, FVY 83-127, dated December 27, 1983

Subject: Vermont Yankee Off-Site Dose Calculation Manual (ODCM)

Dear Sir:

By Reference (b), we provided you with our Radiological Effluent Technical Specifications (RETS). Enclosed please find the associated Off-Site Dose Calculation Manual (ODCM), which will be used to implement several provisions of the RETS.

Enclosure 1 details our responses to questions posed by your consultant Franklin Research Center (FRC), which resulted from their review of a draft version of the ODCM. Enclosure 2 is our final ODCM.

We trust that this information is satisfactory; however, should you have any questions, please contact us.

Very truly yours,

VERMONT YANKEE NUCLEAR POWER CORPORATION

JB Sinclair

J. B. Sinclair
Licensing Engineer

JBS/clr

Enclosures

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ENCLOSURE 1

RESPONSES TO FRANKLIN RESEARCH CENTER (FRC)

COMMENTS ON VERMONT YANKEE (VY) DRAFT ODCM

Page No.	FRC Comment
1-4	"Spec. 3.8.G.1 should also include I-133."

VY Response

The method includes ^{133}I as well as ^{135}I. The title or description indicating ^{131}I was incorrect and has been changed.

Page No.	FRC Comment
1-4	"Spec. 3.8.H is in question. Since the Advance Off Gas (AOG) System is to operate whenever the main condenser Air Ejector System is in operation, the dose projection method is not valid or needed."

VY Response

We agree the dose projection method is not required for Technical Specification 3.8.H. A new section, 3.8.I, for Ventilation Exhaust Treatment, does reference the ODCM.

Page No.	FRC Comment
1-6	"Last line should read 2×10^{-4} but not 2×10^{4}."

VY Response

We agree. This is a typographical error.

Page No.	FRC Comment
1-8	"Equation 3-6 should also include I-133."

VY Response

We agree. See response to comment on Page 1-4.

Page No.	FRC Comment
1-15	"How the effective average gamma dilution factor, (X/QY) is defined? How is it different from (X/Q)?

VY Response

The concept of an energy dependent effective gamma dilution factor has been used by Yankee Atomic Electric Company for seven years. Its description is fully described in YAEC-1120 AEOLUS, John N. Hamawi, dated January 1977. A copy of this report was previously submitted to you.

Page No.	FRC Comment
2-3	"Section 2.2.2 (Service Water Pathway). Since Licensee's service water monitor does not have an LLD specified (See proposed RETS Table 4.8.1), there seems to be a loophole by setting three times the background as the setpoint for such a monitor. A continuous composite sampling is desirable in Licensee's RETS Table 4.8.1."

VY Response

The choice of three times background appears to be a reasonable choice for a monitor in an area of varying background counting rates. There is no continuous composite sampler for the normally clean service water pathway; therefore, no requirement for inclusion in the ODCM.

Page No.	FRC Comment
2-4	"Licensee indicated that circulation water will be sampled if the process monitor (17/359) is out of service or if the alarm sounds. Again, a continuous composite sampling is recommended for inclusion in Licensee's RETS Table 4.8.1."

VY Response

There is no continuous composite sampler in the Circulating Water System. No requirement exists for the ODCM.

Page No.	FRC Comment
3-20	"Define D^Y finite; what is the basis for Eqn. 3-10?

VY Response

See response to comment of Page 1-15.

FRC Comment

3-21 "Basis for X/Q^Y - 7.2×10^{-7} sec/m^3 not given."

VY Response

The basis for this value is described in Section 3.10.

FRC Comment

3-22 "Section 3.6 I-133 should be included."

VY Response

See response to comment on Page 1-4.

FRC Comment

3-23 "Site specific critical organ due factor (Table 1.1-12 on Page 1-20). Licensee has not provided pathways, critical receptors assumptions and equations for the data. Note the approaches between Section 3.4 (Noble gases) and Section 3.6 (I+P) are entirely different! For I+P, only inhalation pathway needs to be considered for dose rate calculations. I-133 should also be included."

VY Response

The basis for the site-specific critical organ dose factors are given in Section 3.9.3 and Section 3.6.3. We recognized the difference in the I+P dose factors and feel our approach is more nearly correct.

FRC Comment

3-24 "I-133 should also be included."

VY Response

See response to comment on Page 1-4.

Page No.	FRC Comment
3-40	"Since Reference (b) (AEOLUS Code - YAEC-1120, January 1977) is not available to the reviewers, verification is needed for the approach cited for X/Q^{Y}."

VY Response

See response to comment on Page 1-15.

	FRC Comment
Figure 6-2	"Hydrogen monitor(s) not designated in Figure 6-2."

VY Response

You are correct. The hydrogen monitor has been added to Figure 6-2.