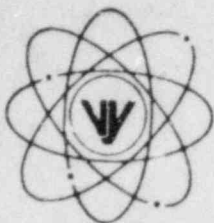


VERMONT YANKEE NUCLEAR POWER CORPORATION



RD 5, Box 169, Ferry Road, Brattleboro, VT 05301

FVY 84-112

REPLY TO:
ENGINEERING OFFICE

1671 WORCESTER ROAD
FRAMINGHAM, MASSACHUSETTS 01701
TELEPHONE 617-872-8100

September 21, 1984

U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

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

References: a) License No. DPR-28 (Docket No. 50-271)
b) Letter, VYNPC to USNRC, FVY 84-100, dated 8/15/84

Dear Sir:

Subject: NUREG 0737 Item II.B.3, Post-Accident Sampling Capability

By letter dated August 15, 1984 [Reference b)], we provided you with certain information regarding the post-accident sampling capability at our facility. In that letter, we committed to providing you with additional information as to how we satisfy Criterion 10 of NUREG 0737 Item II.B.3. This information is provided in Enclosure 1.

We trust that this submittal will allow you to complete your review of the subject NUREG 0737 item for Vermont Yankee; however, should you desire additional information, please contact us.

Very truly yours,

VERMONT YANKEE NUCLEAR POWER CORPORATION

Warren P. Murphy
Warren P. Murphy
Vice President and
Manager of Operations

WPM/dm

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ENCLOSURE 1

CRITERION (10)

NRC REQUEST

Provide the accuracy, range, and sensitivity of radiological and chemical analyses. Provide information demonstrating the applicability of each analyses in the post-accident chemistry and radiation environment. Either results of testing with the standard test matrix or evidence that the selected procedure has been used successfully in a similar environment. (See Exxon report on evaluation of GE and SEC PASS procedures.) Provide information on frequency of functional testing, calibration, and testing of PASS operators.

VY RESPONSE

The accuracy, range and sensitivity of chemical analyses for Post Accident Sampling are as follows:

Requirement	Boron	Chloride	Dissolved Gases (H ₂)
Method	Plasma Emission Spectrometer	Ion Chromatograph	Gas Chromatography
Sensitivity	0.1% of the High Standard Value	1% of Full Scale Deflection on Graph	1% of Full Scale Deflection on Graph
Range *	50 - >1000 ppm	0.1 - >20 ppm	75 - >2000 cc/kg
Accuracy	± 20%	± 15%	± 20%

* Assumed dilution of 2000:1 for Boron and 100:1 for Chloride for low en. of range.

pH measurements are not included because an undiluted sample cannot be obtained from the post accident sample panel.

The major radioisotopes of interest along with the accuracy, range and sensitivity of analysis are as follows:

Isotope	I-131	I-133	Kr 85M	Kr 88	Xe 133	Cs 134	Cs 137	Ba 140	Y 91M
Sensitivity*			$\leq 1\%$ of CALCULATED VALUE						
Range * uCi/ml	0.06 - >10,000	0.09 - >10,000	0.02 - >10,000	0.06 - >10,000	0.05 - >10,000	0.09 - >10,000	0.3 - >10,000	0.3 - >10,000	0.09 - >10,000
Accuracy			WITHIN APPROXIMATELY A FACTOR OF 2						

*The sensitivity and range are determined by the sample dilution. The minimum dilution coming from the PASS is 100:1. The maximum dilution coming from the PASS is approximately 1800:1. Infinite further dilution can be made in the laboratory after the sample is obtained.

Each PASS operator is retrained annually. There are presently approximately 15 persons qualified as PASS operators. Retraining sessions provide functional testing of the PASS panels. Thus the system is functionally tested approximately 15 times/yr.

Instrumentation associated with the operation of the PASS panels is calibrated semi-annually. Laboratory instrumentation used for post accident chemical analyses are routinely used and calibrated during normal plant operation. They would be calibrated again prior to any post accident sample analysis.