

Docket No. 50-271



SEP 22 1981

Mr. Robert L. Smith
Licensing Engineer
Vermont Yankee Nuclear
Power Corporation
1671 Worcester Road
Framingham, Massachusetts 01701

Dear Mr. Smith:

By letter dated January 13, 1981 you took exception to Post-TMI Action Plan requirement II.F.1 which we sent to you by letter dated October 31, 1980. In the enclosure to this letter we have commented on the exceptions you have taken and your justification for these exceptions.

We discussed our comments with members of your staff on September 17, 1981, and we understand that you are in the process of taking into account these considerations. Please inform us of your resolution of these comments within 30 days of your receipt of this letter.

Sincerely,

ORIGINAL SIGNED BY

Vernon L. Rooney, Project Manager
Operating Reactors Branch #2
Division of Licensing

Enclosure: Staff Responses to
Vermont Yankee Deviations on
on Action Plan Item II.F.1

cc: w/enclosure
See next page

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Mr. Robert L. Smith

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Mr. Robert L. Smith

cc:
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DEVIATION

Proposes to use instrument reading-out in terms of mR/hr and tr procedure to convert reading to either Xe-133 equivalent or actual noble gas concentration.

POSITION

Acceptable, subject to preparation of suitable procedure for such conversion.

DEVIATION

Takes exception to using value of 10^2 uCi/cc for sampling and analysis of radioiodines and particulates in plant effluents. Doesn't come out and say they won't meet the requirement but gives four justifications, noted and commented-on as follows:

- (1) States integrated activity on sampler media would be 85 Ci of I-131 plus other noble gases for Vermont Yankee and up to 425 Ci of I-131 at Maine Yankee. Plant personnel would not be allowed to handle a sample of such high activity.

Comment: Per Table II.F.1-2, activity is stated to be 10^2 uCi/cc but not specifically I-131; licensee's figure of 85 Ci probably correct but should assume only 0.5 MeV. Because of some conservatism in these numbers for most accidents, it's not necessary to add-in noble gases when calculating shielding and doses. Using silver zeolite as a radioiodine adsorber

would minimize retention of noble gases. Shielding, remote handling tools, shielded transport devices, plus training should be employed to enable plant personnel to handle samples (no one said it was going to be easy).

- (2) States concentration could only be produced at stack by purging containment fuel-melt LOCA to stack unfiltered. All other sources would be decades lower than 10^2 uCi/cc.

Comment: Our calculation for a fuel melt LOCA as described would be 10^4 uCi/cc, which agrees with ANSI N320-1979. BNWL-1635 recommends a value of 10^3 uCi/cc. The value of 10^2 uCi/cc already contains a factor of 10^2 credit for filtration, less than TID release, and containment plate-out.

- (3) In the event of halogen release, licensee states there exists more reliable and reasonable methods for a quantitative assessment of the release and gives the examples of direct measurement of the source and offsite sampling for I-131.

Comment: Direct measurement under accident circumstances, where gamma radiation levels from noble gas releases are from 3 to 6 orders of magnitude higher than iodine, are considered by the staff to be impracticable with state-of-the-art equipment. Offsite sampling, with delays in sample procurement and analysis, is not a viable alternative for the immediate need dictated by

emergency planning considerations. The need is for quantitative evaluation of releases in terms of minutes, not days.

- (4) Licensee references EPRI presentation to Commission on 11/18/0 as justification for assuming low releases of halogens (Stratton-Malinauskas work).

Comment: A draft NRC report submitted to the Commission indicates that sufficient evidence has not been produced to justify lowering release rates for accident dose/design calculations for all types of accidents.

- (5) Licensee's summary statement claims plant has the capability to continuously sample plant effluents for post-accident release of radioactive iodines and particulates, with onsite lab facilities to measure or analyze the samples.

Comment: In view of the foregoing statement (1-4 above) by the licensee, it is suggested that this be verified to ascertain that the licensee meets the requirements of NUREG-0737, Section II.F.1-2. Assurance should be obtained that sampling and analysis methods are adequate for sampling iodines and particulates with concentrations up to 10^2 uCi/cc, as specified in NUREG-0737.