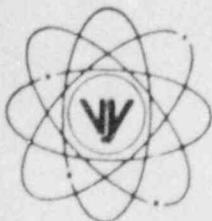


# VERMONT YANKEE NUCLEAR POWER CORPORATION



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

FVY 88-67

REPLY TO:

ENGINEERING OFFICE

1671 WORCESTER ROAD

FRAMINGHAM, MASSACHUSETTS 01701

TELEPHONE 617-872-8100

August 12, 1988

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

Attn: Document Control Desk

References: a) License No. DPR-28 (Docket No. 50-271)  
b) Letter, USNRC to VYNPC, NVY 88-130, Inspection Report  
No. 50-271/88-09, dated 7/14/88

Dear Sir:

Subject: Response to Inspection Report 50-271/88-09

The following is submitted in response to the subject Inspection Report concerning off-site disposal of sewage waste containing licensed material.

## BACKGROUND

Prior to issuance of Information Notice 88-22, Vermont Yankee assured contamination control through the use of monitors at all Radiation Control Area (RCA) exit points. Material and personnel leaving the RCA were frisked using PCM-1B's, RM-14's with HP-210 probes or a combination of the two. An administrative limit of 100 counts above background (considered the smallest level reasonably identified) was established as a threshold for determining contamination. In addition to exit point monitoring, RCA effluent paths are provided with radiation monitors augmented by periodic grab samples.

Since no direct paths between the RCA and any plant septic system were known to exist, monitoring beyond exit point frisking was not considered necessary.

In response to Information Notice 88-22, analysis of septage was performed utilizing highly sensitive environmental sampling techniques. The testing identified trace amounts of radionuclides attributable to power plant operation in samples taken from the Brattleboro sewage treatment facility, plant septic tanks, and nearby farmland where septage had been applied. Although these nuclides were only a small fraction of those naturally occurring, and far below our 100 count administrative limit, all off-site septage shipments were immediately halted.

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#### CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED

The State of Vermont and NRC officials were notified of our findings and our decision to stop all off-site septage shipments.

A detailed investigation of all release paths was undertaken by an ad hoc task force. As a preliminary step, all piping was verified to confirm that without exception, no sources from the RCA emptied into plant septic systems.

Further investigation primarily consisting of floor smears and samples taken from sink and drain traps outside of the RCA determined that the majority of radioactive material found in the plant's septage came from the routine mopping of floors outside the RCA. Even though personnel exiting the RCA are carefully monitored using PCM-1B personnel monitors, very small amounts of radioactive material are transported on workers' shoes and then deposited on floors outside the RCA.

While routine floor surveys of areas outside the RCA have always shown levels to be less than the current industry standard for classification as contaminated (1000 dpm per 100 square centimeters), concentration occurs when large surface areas are mopped. The validity of this concept was proven by the implementation of a corrective action that requires the filtering of mop water prior to disposal into plant septic systems. Samples taken of filtrate that accumulated over several days was seen to contain readily detectable levels of contamination.

A secondary source of material exists in the on-site sinks and showers located outside of the RCA. Personnel washing after first being carefully monitored for radioactive contamination can still deposit trace amounts of materials. Samples from these sinks have verified very small amounts of radioactive material.

While it is true that the septage does contain Cobalt-60 and other isotopes measurable only with very sensitive laboratory equipment, no radiological hazard exists. Because of this, Vermont Yankee feels that our past practice of monitoring personnel when exiting the RCA was and continues to be appropriate to ensure that the health and safety of workers and the public is protected.

#### CORRECTIVE STEPS WHICH WILL BE TAKEN TO AVOID FURTHER PROBLEMS

As stated above, after evaluation of potential pathways for contamination escape from the radiation controlled area, we have determined that the sole source of release is by transport on skin and clothing. Vermont Yankee has taken measures such as filtration of mop water to reduce the trace amounts of contamination. In addition, we will continue to evaluate alternative methods to further reduce levels. We do not believe that the migration of trace amounts of contamination into plant septage can be completely eliminated.

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As such, we have re-evaluated our current septage disposal practices. As a result, we have determined that continued disposal at the local municipal waste water treatment facility is impractical and that a different technique will be required for future disposals of Vermont Yankee septage.

In the near future, we will be applying for a permit under 10 CFR 20.302 to allow disposal of our septage by land application on Vermont Yankee property. In addition to NRC approval of this method, a State permit must be obtained prior to the spreading of septage. We are, therefore, also pursuing State approval. This process will ensure that sludge containing minor amounts of plant generated radioactivity is no longer deposited at any off-site location.

We are also working with the State of Vermont to obtain approval to install a new septic system to replace the COB holding tank. This installation would preclude the need for frequent pumping of the holding tank. Disposal of this septage would also be by land application on Vermont Yankee property. We anticipate installation of this new septic system before the end of 1988. The existing tank contents will be transferred to this new septic system, and use of the holding tank will be discontinued.

The above described plan should address all areas of concern in this matter. If you have any further questions in this regard, do not hesitate to contact us.

Very truly yours,

VERMONT YANKEE NUCLEAR POWER CORPORATION



Warren P. Murphy  
Vice President and  
Manager of Operations

/dm  
cc: USNRC Regional Administrator, Region I  
USNRC Resident Inspector, VYNPC