

SEP 13 1988

Mr. Raymond N. McCandless, Director
Vermont Department of Health
10 Baldwin Street
Montpelier, Vermont 05602

Dear Mr. McCandless:

This is in response to your letter dated August 15, 1988, in which you requested additional information concerning the disposal of contaminated sewage at the Town of Brattleboro's Waste Treatment Facility. Below are answers to your specific questions.

Question 1:

Does NRC regulatory jurisdiction over licensed materials extend to the stockpiled sludge in Brattleboro whether or not the concentrations in water of 10 CFR 20, Appendix B had been met when sludge/sewage was transferred by Vermont Yankee?

Yes, NRC does maintain regulatory jurisdiction over the licensed material in the sludge.

Question 2:

Have all other requirements of 10 CFR 20, such as sampling and recordkeeping, been satisfied by Vermont Yankee?

The licensee did not perform adequate surveys on the sewage before releasing it for disposal. In order to demonstrate compliance with requirements of 10 CFR 20.303, licensees wishing to dispose of licensed material are required to perform surveys in accordance with the requirements of 10 CFR 20.201. Initially when this sewage was released to the sanitary sewer system, the licensee was not aware that the sewage was contaminated, and did not attempt to demonstrate compliance with the regulations. Subsequent measurements of concentrations of radionuclides in the sludge at the Brattleboro Waste Treatment Facility have shown that they are well below the limits set forth in 20.303(b)(1). The 10 CFR 20, Appendix B, Table I, Column 2 concentration limit for water referred to by 10 CFR 20.303 is 0.001 micro-Ci/ml or 1000000 pCi/kg. Measured concentrations in the sludge were below 200 pCi/kg, or approximately 5000 times smaller than the release limit. This indicates the waste as disposed met the regulatory requirements relating to concentration. Also, the regulatory requirement of 10 CFR 20.303(d) relating to total activity was also met. The upper limit of total activity was determined based on the total amount of sludge (13,500 cubic feet) and the maximum measured concentration (200 pCi/kg) and this was found to be less than the one Curie per year limit of 10 CFR 20.303(d). Regarding records, since the licensee did not perform adequate surveys of the sewage prior to disposal, records

8809290276 880913
PDR ADDOCK 05000271
P PNU

11
IE06

of disposals were not maintained. We are currently in the process of resolving this issue with the licensee. The licensee has committed to us to perform an analysis to determine a best-estimate of the total amount of licensed material that was released in the sewage. The results of this analysis will become part of the station's records.

Question 3:

What recommendations can NRC provide concerning the disposition of an estimated 13,500 cubic feet of sludge, currently stockpiled at the Brattleboro sewage treatment plant, which contains measurable amounts of licensed material (Cobalt-60)?

No special precautions need be taken in disposing of the sludge from the standpoint of the radioactive material. The NRC release limits required of 10 CFR 20.303 for sewage are low enough to preclude the need for special handling and disposal of the sludge, even if the waste treatment process caused some reconcentration of the radioactivity in the sludge. Measurements of the sludge stockpiled at the Town of Brattleboro's Treatment Facility indicate Co-60 concentrations less than 200 pCi/kg. This concentration is so low that exposure pathways to humans would result in only negligible doses. For example, ingestion of all the activity from a kilogram of sludge (200 pCi) would result in a dose of the order of 0.001 mrem.

Please do not hesitate to contact Dr. Ronald R. Bellamy of my staff at 215 337-5200 if we can be of any further assistance to you.






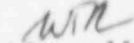
Sincerely,

Original Signed By
WILLIAM T. RUSSELL

William T. Russell
Regional Administrator

cc:

J. Lash, Secretary, Natural Resources, State of Vermont
G. Sterzinger, Commissioner, Public Service, State of Vermont
W. Murphy, Manager of Operations, VYNPC
J. Pelletier, Plant Manager, VYNPC
D. Reed, Operations Support Manager, VYNPC

 WPasciak ERPS 9/7/88	 RBellamy FRSSB 9/8/88	 SBeneter DRSS 9/7/88	 MMiller SLO 9/9/88	 JAthan DRA 9/9/88	 WRussell RA 9/12/88
---	--	---	---	--	--

L. J. Cunningham
HO:NRR

9/12/88 for LTC
based on telephone call

Public Document Room (PDR)
Local Public Document Room (LPDR)
Nuclear Safety Information Center (NSIC)
bcc:
Region I Docket Room (with concurrences)
D. Haverkamp, Section Chief, DRP
J. Kaucher, Project Engineer, DRP
G. Grant, SRI - Vermont Yankee
H. Eichenholz, SRI - Yankee
C. Warren, SRI - Pilgrim
V. Rooney, PM, NRR



State of Vermont

AGENCY OF HUMAN SERVICES

VERMONT DEPARTMENT OF HEALTH
Division of Occupational
and Radiological Health
Administration Building
10 Baldwin Street
Montpelier, Vermont 05602
(802) 828-2886

August 15, 1988

William T. Russell
Regional Administrator
Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, Pennsylvania 19406

RE: NRC Inspection
#50-271/88-09

We would appreciate receiving additional information concerning the "potential improper disposal of licensed material" which your inspection identified. The inspection originated because of the presence of measurable amounts of Cobalt 60 in sludge of the Brattleboro, Vermont sewage treatment plant. This Cobalt 60 presumably originated from Vermont Yankee Nuclear Power Plant in Vernon, Vermont.

- (1) Does NRC regulatory jurisdiction over licensed materials extend to the stockpiled sludge in Brattleboro whether or not the concentrations in water of 10 CFR 20, Appendix B had been met when sludge/sewage was transferred by Vermont Yankee?
- (2) Have all other requirements of 10 CFR 20, such as sampling and record-keeping, been satisfied by Vermont Yankee?
- (3) What recommendations can NRC provide concerning the disposition of an estimated 13,500 cubic feet of sludge, currently stockpiled at the Brattleboro sewage treatment plant, which contains measurable amounts of licensed material (Cobalt 60)?

Thank you for your assistance in this matter.

Raymond N. McCordless

Raymond N. McCordless
Director

/s/nab

cc: Dr. R. Coffin, Health Commissioner
J. Lash, Secretary, Natural Resources
G. Sterzinger, Commissioner, Public Service

~~884830099~~ 1P.