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December 29, 2005
BVY 05-110

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Reference: Letter, VYNPS to USNRC, "2004 Annual Radiological Environmental Operating Report," BVY 05-55, dated May 11, 2005

**Subject: Vermont Yankee Nuclear Power Station
License No. DPR-28 (Docket No. 50-271)
Supplement to the Annual Radiological Environmental Operating
Report for Year 2004**

The attachment to this letter contains a supplemental corrective update to the referenced report for calendar year 2004.

There are no new regulatory commitments contained in this submittal

We trust that the information provided is adequate; however, should you have questions or require additional information, please contact me at (802) 258-4236.

Sincerely,

A handwritten signature in black ink, appearing to read "James M. DeVincentis", written over a horizontal line.

James M. DeVincentis
Manager, Licensing
Vermont Yankee Nuclear Power Station

Attachment (1)

cc: USNRC Region 1 Administrator
USNRC Resident Inspector – VYNPS
USNRC Project Manager – VYNPS
Vermont Department of Public Service
Vermont Division of Occupational and Radiological Health

JE25

Docket No. 50-271
BVY 05-110

Attachment 1

Vermont Yankee Nuclear Power Station

Supplement to the

Annual Radiological Environmental Operating Report

For Year 2004

ENERGY NUCLEAR NORTHEAST - VERMONT YANKEE
Vermont Yankee Nuclear Power Station

Supplement to the
ANNUAL RADIOLOGICAL ENVIRONMENTAL
OPERATING REPORT
For
Year 2004

Preparation coordinated by: *Stephen P. Skibniowsky* / *12/5/05*
Stephen P. Skibniowsky, Sr./HP & Chem Specialist (Nuclear) Date

Reviewed by: *Stephen C. McAvoy* / *12/5/05*
Stephen C. McAvoy, Chemistry Supervisor Date

Approved for Distribution: *Samuel A. Wender IV* / *12/5/05*
Samuel A. Wender IV, Chemistry Superintendent Date

Supplemental Report:

This supplemental corrective update to the year 2004 Vermont Yankee Annual Radiological Environmental Operating Report (AREOR) is presented to provide corrections/omissions in Section 6 of the original AREOR discovered during a recent internal audit of the Radiological Environmental Monitoring Program (REMP).

Specifically, Section 6.1, Sampling Program Deviations, was found to be missing three deviation events which had occurred during year 2004 in the environmental sampling program area. The table of air monitoring station performance percentages was also corrected as a result of these additional events. The additions and correction to Section 6.1 are underlined to facilitate comparison with the original submittal. These additional deviations had no substantive impact on the final assessment of the original report and therefore no changes were made in those summary sections.

Additionally, the original Section 6.5.4 referenced a missing Thermoluminescent Dosimeter, DR-34, which was erroneously stated to be missing in the fourth quarter of 2004. DR-34 was not missing for any quarter of 2004. The actual data is provided in Section 5 of the original 2004 AREOR. Section 6.5.4 has been corrected in this supplemental submittal.

Supplemental Section 6.1 Sampling Program Deviations

Off-site Dose Calculation Manual Table 3.5.1, Note a., allows for deviations "...if specimens are unobtainable due to hazardous conditions, seasonal unavailability, malfunction of automatic sampling equipment and other legitimate reasons." In 2004, eight deviations were noted in the REMP. These deviations did not compromise the program's effectiveness and are considered typical with respect to what is normally anticipated for any radiological environmental monitoring program. The specific deviations for 2004 were:

- a) Failure of the water pump supplying river water to the Downstream River Station River Water Composite sampler (Station #WR-11). The pump was discovered to be out of service on January 6th, 2004 and was replaced and restored to service on February 17th, 2004. During the period that the pump was out of service, compensatory river water samples were collected on a daily basis and utilized as part of the monthly composite sample from this station. This failure was documented in CR-VTY-2004-00045 and LO-VTYLO-2004-00123, CA#01.
- b) First Quarter, 2004, environmental TLD DR-17 was missing during routine quarterly exchange on 3/30/04. A new TLD was posted at DR-17 for second quarter data collection. The event was documented in CR-VTY-2004-00727.
- c) Failure of an air sample station to collect required air samples at Station AP/CF 13 was discovered during the weekly air sample collection on August 17th, 2004. The air sample station breaker had tripped. Power was lost for approximately 116 hours during the previous weekly sample collection period. This breaker trip appeared to have occurred during a moderately severe thunderstorm and most likely was a result of a power surge to the station. The breaker was reset and the station operated normally following reset. This power outage was documented in CR-VTY-2004-02625 and LO-VTYLO-2004-00438, CA#01.
- d) A service panel circuit breaker was found tripped (open) at the South River Station (#3-3) following a electrical storm event. The river sample compositor was not functioning as a result of this power interruption. Two sample cycles (2 samples over a four hour period) were missed. The equipment was restored to function with the closure of the breaker. No further damage was noted. This event was documented in CR-VTY-2004-01831.
- e) A slight reduction in air sample time (approximately 2 hours out of the 168 hour week) was noted at two environmental air sample collections stations (Station 11- South River Station, Vernon and Station 15 -Tyler Hill Road, Vernon) during the weekly sample collection on 10/26/04. A relay had failed at the Vernon Hydro Station on the evening of 10/25/04 and the entire town of Vernon was without power for approximately two hours. This event was documented in CR-VTY-2004-03276, CA #01 and LO-VTYLO-2004-00570, CA#01.
- f) A slight reduction in air sample time (approximately 3 hours out of the 168 hour week) was noted at two environmental air sample collections stations (Station 12 - North Hinsdale and Station 13 - Hinsdale Substation) during the weekly sample collection on 11/30/04. Transmission equipment problems at the Chestnut Street Substation in Hinsdale NH had occurred on November 28th, 2004 resulting in power loss for a section of Hinsdale New Hampshire including the two air sample stations. This event was documented in CR-VTY-2004-03589, CA #01 and LO-VTYLO-2004-00621, CA#01.
- g) The water pump supplying river water to the Downstream River Station River Water Composite sampler (Station #WR-11) was discovered to be out of service on December 7th, 2004 and was restored to service on December 9th, 2004. During the period that the pump was out of service, compensatory river water samples were collected on a daily basis and utilized as part of the monthly composite sample from this station. This failure was documented in CR-VTY-2004-03653 and LO-VTYLO-2004-00665, CA#01

- h) The Governor Hunt House Air Sample Collection Station, APCF-40, was found to be out of service during the weekly sample collection by the Chemistry Technician. Power was interrupted to the station due to a blown fuse event following approximately 100 hours of sample collection for the week. Approximately 68 hours of sample collection time was lost. The fuse was replaced and no further failures have been noted to date. This sample station is not required by the Vermont Yankee Offsite Dose Calculation Manual Table 3.5.1., however, it is being reported since this monitoring station data is presented in this report. This event was documented in CR-VTY-2004-03838.
- i) The following data indicates the percentage of time that each air sampling station operated during year 2004. The data was based on a comparison of the readings from an electric timer at each station and the clock time of sample collection. This data indicates that any power interruptions did not result in a significant loss of data for the airborne contaminant sampling program. Third quarter performance of Station 13 was impacted by a breaker trip as referenced in Section 6.1.c) above. Fourth quarter performance of Stations 11, 12, 13, 15 and 40 were affected by short outages as described in Sections 6.1.c), 6.1.e), 6.1.f) and 6.1.h) above. These outages are reflected in the percentages listed below.

AP/CF #	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter
11	100%	100%	100%	99.9%
12	100%	100%	100%	99.9%
13	100%	100%	94.7%	99.9%
14	100%	100%	100%	100%
15	100%	100%	100%	99.9%
21	100%	100%	100%	100%
40	100%	100%	100%	96.8%

Supplemental 6.5.4 Direct Radiation Pathway

Direct radiation was continuously measured at 53 locations surrounding the Vermont Yankee plant with the use of thermoluminescent dosimeters (TLDs). One exception to this program occurred in year 2004. A TLD was missing from Station DR-17 at the end of the first quarter. This event is further described in Section 6.1.

In 1999, DR-53 was added on the site boundary. The TLDs are collected every calendar quarter for readout at the environmental laboratory. The complete summary of data may be found in Table 5.3.

From Tables 5.2 and 5.3 and Figure 6.13, it can be seen that the Inner and Outer Ring TLD mean exposure rates were not significantly different in 2004. This indicates no significant overall increase in direct radiation exposure rates in the plant vicinity. It can also be seen from these tables that the Control TLD mean exposure rate was not significantly different than that at the Inner and Outer Rings. Figure 6.13 also shows an annual cycle at both indicator and control locations. The lowest point of the cycle occurs during the winter months. This is due primarily to the attenuating effect of the snow cover on radon emissions and on direct irradiation by naturally-occurring radionuclides in the soil. Differing amounts of these naturally-occurring radionuclides in the underlying soil, rock or nearby building materials result in different radiation levels between one field site and another.

Upon examining Figure 6.17, as well as Table 5.2, it is evident that in recent years, station DR-45 had a higher average exposure rate than any other station. This location is on-site, and the higher exposure rates are due to plant operations and activities in the immediate vicinity of this TLD. There is no significant dose potential to the surrounding population or any real individual from these sources since they are located on the back side of the plant site, between the facility and the river. The same can be said for station DR-46, which has shown higher exposure rates in previous years.