

**STATE OF VERMONT
PUBLIC SERVICE BOARD**

Investigation into (1) whether Entergy Nuclear Vermont)
Yankee, LLC, and Entergy Nuclear Operations, Inc.,)
(collectively, "Entergy VY"), should be required to cease)
operations at the Vermont Yankee Nuclear Power Station,)
or take other ameliorative actions, pending completion of)
repairs to stop releases of radionuclides, radioactive)
materials, and, potentially, other non-radioactive materials)
into the environment; (2) whether good cause exists to)
modify or revoke the 30 V.S.A. § 231 Certificate of Public)
Good issued to Entergy VY; and (3) whether any penalties)
should be imposed on Entergy VY for any identified)
violations of Vermont statutes or Board orders related to)
the releases)

Docket No. 7600

SWORN AFFIDAVIT OF JEFFERY A. HARDY

Jeffery A. Hardy, being duly sworn, states as follows:

1. My name is Jeffery A. Hardy.
2. I am employed by Entergy Nuclear Operations, Inc. ("ENO"), at the Vermont Yankee Nuclear Power Station (the "VY Station") as Chemistry Manager.
3. In my capacity as Chemistry Manager, I have personal knowledge regarding (i) the groundwater-monitoring program at the VY Station, (ii) the recent detection of low levels of tritium in groundwater wells GZ-24 and GZ-6, (iii) the efforts of ENO and Entergy Nuclear Vermont Yankee, LLC ("ENVY" and, together with ENO, "Entergy VY") to identify the source of the tritium found in these monitoring wells and (iv) Entergy VY's interactions with government regulators, the Vermont Department of Public Service ("DPS"), the Vermont Department of

Health (“DOH”) and the U.S. Nuclear Regulatory Commission (“NRC”) to identify and address the source of the tritium that has been detected in these wells.

4. Pursuant to the Board’s order dated February 7, 2011, I submitted affidavits on February 11, 2011 and February 25, 2011, describing Entergy VY’s investigation into the source of tritium detected in groundwater monitoring wells GZ-24 and GZ-6. Today’s affidavit serves as the next biweekly status update, as ordered by the Board.
5. Daily samples taken from groundwater monitoring well GZ-24 in the last two weeks have shown low levels of tritium within an observed band well below regulatory reporting requirements. The recent tritium concentrations have fluctuated between approximately 1540 pCi/l and less than minimum detectable levels. Levels of tritium in samples taken from GZ-6 have generally remained below detectable levels, with only one sample indicating a tritium concentration above detectable levels at 802 pCi/l.
6. As described in my affidavit of February 11, 2011, Entergy VY implemented an Action Plan to identify the source of the elevated levels of tritium in groundwater monitoring well GZ-24.
7. Pursuant to that Action Plan, Entergy VY has continued with its testing of the five lines identified as potential sources, as described in my affidavits of February 25, 2011 and today. Entergy VY has tested four of the five lines, with testing of the fifth line to be performed later in March (as described below). Test results to date do not indicate any gross loss of integrity of the pipes. Entergy VY has assessed

other sources that could be contributing to the levels of tritium observed in GZ-24, and identified a sixth line to be investigated, as described below.


8. As described in my affidavit of February 25, 2011, Entergy VY conducted a pressure test of RW-186 Drain Line from the Steam Packing Exhaust (“RW-186”) on February 18, 2011. The pressure test tore a plug which had been inserted to facilitate the test. The torn plug was repaired and Entergy VY pressure tested RW-186 again on February 21, 2011. The results from the pressure tests for RW-186 were inconclusive since pressure could not be maintained at the level set for the test. After evaluating the situation, Entergy VY conducted a follow-up pressure test on March 4, 2011.
9. The pressure test of RW-186 performed on March 4, 2011 was performed using inflatable barriers to facilitate the test. Some loss of pressure was observed during the pressure test. However, Entergy has concluded that the pressure drop was most likely related to an imperfect seal formed between the inflatable bladders and the internal surface of the RW-186 piping.
10. In preparation for the pressure test of RW-176 1st AOG Delay Pipe Drain Line (“RW-176”), Entergy VY completed the necessary modifications and conducted the pressure test on March 3, 2011. Although a decrease in pressure was noted, a validating test indicated that the decrease was due to the imperfect seal created by the inflatable bladders utilized during the test.
11. The fifth line to be tested is RW-187 Standby Gas Treatment Drain Line (“RW-187”). As described in my previous affidavit, Entergy VY is preparing for the

pressure test of RW-187 by making necessary modifications. The pressure test of RW-187 is scheduled to occur on or about March 24, 2011.

12. The sixth line Entergy VY plans to investigate is the RW-233 Drain Line from AOG Sump ("RW-233"). This line was identified as a potential source of tritium during the KT Process performed in January 2011 and prioritized in accordance with the 2010 SSC risk ranking.¹ The sump pump associated with RW-233 has been inactive for a period of time; therefore, process fluid is not currently present in the line. Given this information, it is possible for this line to have been a legacy source – not an ongoing source – for the current levels of tritium being observed in GZ-24. Entergy VY is working to develop a test plan for validating structural integrity of RW-233.
13. Entergy VY has also completed physical modifications to the loop seals located in the lower level of the RadWaste Building. As explained in my previous affidavit, these modifications will lower the loop seal water level in the piping associated with the loop seals and ensure that standing water is not a contributor to the tritium levels observed in groundwater monitoring well GZ-24.
14. Entergy VY continues to provide daily communications of all applicable sample results to the Department of Public Service, the Vermont Department of Health and the Nuclear Regulatory Commission.
15. Entergy VY also continues to hold weekly, governmental-stakeholder conference calls to provide updates on Entergy VY's investigation progress.

¹ Both the KT Process and the 2010 SSC risk ranking were described in my February 11, 2011 affidavit.

Date: March 11, 2011



Name: Jeffery A. Hardy
Title: Chemistry Manager

STATE OF VERMONT
COUNTY OF Windham, SS.

On this 11 day of ~~February~~ ^{March}, 2011, before me, personally appeared Jeffery A. Hardy,
and made oath to the truth of the foregoing on his own personal knowledge.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

Before me,



Notary Public

My commission expires: 2/10/15