



State of Vermont
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Agency of Human Services

January 27, 2011

Jeff Hardy
Chemistry Manager
Entergy Nuclear Vermont Yankee
Vermont Yankee Nuclear Power Station
Vernon, Vermont

Dear Mr. Hardy:

Pursuant to Sections 5-306 and 5-307 of the Vermont Department of Health Radiological Health Rule, I request that Entergy Vermont Yankee send reports of groundwater monitoring wells, current and former drinking water wells, river water, river sediment and river fish analytical results to Radiological Health Chief Bill Irwin, ScD, CHP as soon as those results are reported. I expect complete radiochemical analysis results from the Vermont Yankee on-site laboratories and Entergy Vermont Yankee's contracted laboratory, currently Teledyne Brown. These results are to include tritium, gamma spectrometry, gross alpha, gross beta, alpha spectrometry and hard to detect analysis results.

Due to the tritium contamination in the new monitoring well, the Health Department must be able to monitor all reported results on a daily basis. As in the past, e-mail is a suitable form for delivering this data. Since many of these results are reported on a daily basis, I would expect daily reports to Dr. Irwin.

Thank you.

A handwritten signature in black ink, appearing to read "Harry L. Chen" followed by a stylized flourish.

Harry L. Chen, MD
Commissioner

cc: William Irwin, Radiological Health Chief, Vermont Department of Health
Elizabeth Miller, Commissioner, Department of Public Service
Uldis Vanags, State Nuclear Engineer, Department of Public Service



Miller, Elizabeth

From: Vanags, Uldis
Sent: Friday, January 28, 2011 11:04 AM
To: Miller, Elizabeth
Cc: Hofmann, Sarah; 'Bruce Hinkley'; 'Arnie Gundersen'
Subject: Answers to Questions from yesterday's phone call

Follow Up Flag: Follow up
Flag Status: Flagged

Answers to questions from yesterdays call.

Well Data Test results – all sampled on January 24th.

13D less than MDA
12D 119,705 pCi/l
14D less than MDA
22D 385,000 pCi/l (rounded)

Question: Does Vermont Yankee have an Action Plan?

Answer: Yes. The positive indication of tritium found at GZ-24 has been entered into the the Vermont Yankee corrective action system for root cause analysis. An action plan to locate the source of the tritium has been developed and has been implemented. The plan includes the identification of high probability sources of the tritium and a schedule for testing these sources. The plan is reviewed and updated daily as the investigation progresses. The plan is a Station document and is not available for public distribution.

Question: When are water samples measured for Hard-to-Detects?

Answer: When a well is tested and there is a first indication of tritium contamination a water sample from that well is also tested for Hard-to-Detects. The well is not tested for Hard-to-Detects afterwards if the result is negative.

Question: Does Vermont Yankee have an SOP for tritium testing of ground water.

Answer: Yes and No. Vermont Yankee has procedures for sampling and analyzing radioisotopes that have critical time tables from sample collection to analysis. Tritiated water does not have a critical sampling to analysis requirement due to the relatively long half life. However, Tritium analysis is performed per methods approved by the American Society for Testing and Materials (ASTM). ASTM methods are used internationally. Ground water sampling is performed by methods stated in Vermont Yankee's Indirect Discharge Permit issued by ANR.

Uldis Vanags
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Miller, Elizabeth

From: McKenney, Michael P [mmckenn@entergy.com]
Sent: Thursday, January 27, 2011 2:06 PM
To: Miller, Elizabeth; Vanags, Uldis
Cc: Wark, Stephen
Subject: RE: Request for information on new tritium indication

Please note the following correction

The response to #2 should read:

GZ-24 has been increased to a daily sampling frequency as this is the well of concern. GZ-2 and GZ-6 have been increased to twice weekly sampling frequency. These wells are down-gradient of GZ-24 and have not indicated a significant tritium concentration to date.

Mike McKenney
Entergy Vermont Yankee
Office 802 258-4183
Pager 802 742-9086
Mobile 802 380-2310

From: McKenney, Michael P
Sent: Thursday, January 27, 2011 12:22 PM
To: Miller, Elizabeth; Vanags, Uldis
Cc: Wark, Stephen
Subject: RE: Request for information on new tritium indication

Hi Liz/Uldis,
Pls see the responses below to the information requested.
Mike

Mike McKenney
Entergy Vermont Yankee
Office 802 258-4183
Pager 802 742-9086
Mobile 802 380-2310

From: Miller, Elizabeth [<mailto:Elizabeth.Miller@state.vt.us>]
Sent: Wednesday, January 26, 2011 3:30 PM
To: Vanags, Uldis; McKenney, Michael P
Cc: Wark, Stephen
Subject: RE: Request for information on new tritium indication

Hi Michael:

Have you been able to respond to Uldis's request on items below? Also, we'd like a written response on the daily updates; I understand you provided it by phone today. On that and the other items below, we'd ask for a written response please; email is fine. Appreciate your assistance. Thanks very much.

Liz Miller, Commissioner

From: Vanags, Uldis
Sent: Tuesday, January 25, 2011 10:43 AM
To: McKenney, Michael P
Cc: Miller, Elizabeth; Wark, Stephen
Subject: Request for information on new tritium indication

Hi Mike: Please provide the following information listed below on a daily basis pertaining to the station investigation on the new tritium indications in wells GZ-24 and GZ-6.

1) Report daily any analysis results for wells GZ-24 and GZ-6. With the data include the lower limit of detection and the sigma value.

Sample Location	Sample ID	Date	Time	Reported Activity (pCi/L)	Uncertainty Standard Deviations (pCi/L)
GZ-06	GZ-06 1/24/11 1317 1A dist	1/24/2011	13:17	< 672	+/- 4.18E+02
GZ-06	GZ-06 1/26/11 1315 1A dist	1/26/2011	13:15	1,024	+/- 4.24E+02
GZ-24	GZ-24 1/25/11 1023 1A dist	1/25/2011	10:23	6,748	+/- 1.46E+03
GZ-24	GZ-24 1/26/11 1248 1A dist	1/26/2011	12:48	8,139	+/- 1.54E+03

2) Please explain what the sampling frequency is for these wells.

GZ-24 has been increased to a daily sampling frequency as this is the well of concern. GZ-2 and GZ-6 have been increased to twice weekly sampling frequency. These wells are down-gradient of GZ-24 and, to date, have not contained concentrations of tritium that are identifiable at the VY Chemistry Laboratory.

3) Is a gamma analysis being done and if so what do the results show?

Any sample that is shipped offsite for analysis is required to be sampled for gamma-emitting radionuclides. Samples from GZ-6 are shipped weekly to the Dept. of Health lab. In addition, the monthly GZ-series samples that analyzed at Teledyne-Brown are analyzed for gamma-emitting radionuclides. To date, no gamma-emitting radionuclides have been identified in monitoring well GZ-6. The lines currently being investigated do not contain significant concentrations of gamma-emitting radionuclides as they are typically drain lines from gas systems.

4) What is the plan for investigating the source of the tritium in GZ-24?

A detailed Action Plan has been developed which includes many actions occurring in a logical order. Near-term actions include the following: perform a pressure-drop test of the Stack Sump Discharge Line, implement a modification to allow internal inspection of drain lines, and explore the potential for dye injection testing. In addition, a systematic problem-solving analysis has been performed.

5) Are there briefings planned for state officials and other interested parties. such as the weekly call in update that was done for the first tritium investigation.

Yes, they will be weekly on Thursdays @ 3:30 PM.

Let me know if you need any clarification on these questions.

Thanks,
Uldis

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