Issue/Title: Pilgrim Nuclear Power Station (PNPS): Tritium in Groundwater Monitoring Wells

Topic: PNPS Updates as of May 13, 2011

Previous Plans: Results from groundwater monitoring well samples collected during the weeks of April 27th and May 3rd, 2011 were reported by Entergy (see tables below). Split samples for the weeks of April 27th, 2011 and May 3rd, 2011 are currently being analyzed by MERL.

Current Status:

Table 1[1]: April 27th

Location	Date	MERL[2] pCi/L	GEL[3] pCi/L
MW 201	4/27/2011	**	695
MW 202	4/27/2011	**	NDA<390
MW 202 I	4/27/2011	**	NDA<391
MW 203	4/27/2011	**	NDA<390
MW 204	4/27/2011	**	NDA<390
MW 205	**4/27/2011**	**	**2630**
MW 206	**4/27/2011**	**	**2090**
MW 207	4/27/2011	**	494
MW 208-S	4/27/2011	**	NDA<391
MW 208-I	4/27/2011	**	NDA<390
MW 209 **new**	4/27/2011	**	979
MW 210 **new**	4/27/2011	**	NDA<389
MW 211 **new**	4/27/2011	**	1120
MW 212 **new**	4/27/2011	**	NDA<329
MW 213 **new**	4/27/2011	**	NDA<390
MW 214 **new**	4/27/2011	**	NDA<390
MW 3	4/27/2011	**	NDA<390
MW 4	4/27/2011	**	NDA<391
SW-boat ramp	4/27/2011	**	NDA<389
SW-intake	4/27/2011	**	NDA<390

Table 2: May 3trd

Location	Date	MERL pCi/L	GEL pCi/L
MW 201	5/3/2011	**	461
MW 202	5/3/2011	-	-
MW 202 I	5/3/2011	-	-
MW 203	5/3/2011	-	-
MW 204	5/3/2011	-	-
MW 205	**5/3/2011**	**	**5680**
MW 206	**5/3/2011**	**	**905**
MW 207	5/3/2011	-	-
MW 208-S	5/3/2011	-	-
MW 208-I	5/3/2011	-	-
MW 209 **new**	5/3/2011	**	1040
MW 210 **new**	5/3/2011	-	-
MW 211 **new**	5/3/2011	**	970
MW 212 **new**	5/3/2011	-	-
MW 213 **new**	5/3/2011	-	-
MW 214 **new**	5/3/2011	-	-
MW 3	5/3/2011	-	-
MW 4	5/3/2011	-	-
SW-boat ramp	5/3/2011	-	-
SW-intake	5/3/2011	-	-

*** NDA = not detected at less than activity value listed**
**** results pending**
- not analyzed this week

[1] PNPS screening level for tritium in groundwater monitoring wells is 3,000 pCi/L, which is 1/10th of the NRC-approved Pilgrim Offsite Dose Calculation Manual standard for tritium in non-drinking water sources. The EPA drinking water standard is 20,000 pCi/L. The nearest drinking water wells are approximately 2.5 miles from the plant.

[2] Results from the Massachusetts Environmental Radiation Laboratory (MERL)

[3] GEL Laboratories are a radioanalytical laboratory contracted by PNPS

The latest groundwater monitoring results reported by Entergy show that MW205 had a level of 2,630 pCi/L of tritium detected on April 27th and increased to 5,680 pCi/L of tritium detected on May 3rd (the previous result on April 19th was 921 pCi/L). Results for MW206 show 2,090 pCi/L of tritium detected on April 27th and 905 pCi/L of tritium detected on May 3rd (the previous result on April 19th was 1,560 pCi/L). Results for MW201 indicated 695 pCi/L of tritium detected on April 27th and 461 pCi/L of tritium detected on May 3rd. Tritium results for MW209 and MW211 continue to be detected at approximately 1,000 pCi/L. Specifically, for MW209, 979 pCi/L of tritium was detected on April 27th, and 1,040 pCi/L of tritium was detected on May 3rd. For MW211, 1,120 pCi/L of tritium was detected on April 27th, and 970 pCi/L was detected on May 3rd. For the weeks of April 27th and May 3rd split samples from MERL are currently being analyzed.

Results of tritium monitoring at PNPS continue to be updated regularly on the MDPH website (www.mass.gov/dph/environmental_health) as they become available. To improve readability, the environmental monitoring data previously reported in one large table have been split into smaller tables summarized by year for 2007, 2008, and 2009; data are reported quarterly for the more frequent sampling which began in 2010. A graph showing tritium concentrations in groundwater monitoring wells MW205 and MW206 over time has also been added to the website.

The charcoal samplers placed in monitoring wells for the dye testing effort continue to be collected weekly to determine whether the dyes are present in the groundwater. Entergy has reported that no dyes have been detected in the first 13 weeks of results they have received from the dye testing company.

At MDPH's request, Entergy asked their environmental consultants to evaluate the impacts of ambient temperature on tritium levels in groundwater monitoring wells. Preliminary analyses reported by Entergy indicate no significant correlations between ambient temperature and tritium levels in groundwater.

As previously reported, Entergy inspected the piping for the condensate storage tanks (CST) using ultrasonic testing and guided wave testing that revealed a potential anomaly (See PNPS update dated December 3, 2010). These results were then reviewed by a third party. Entergy has previously reported that results from the 3rd party review indicate no significant anomalies that would suggest a source for the tritium in groundwater (See PNPS update dated March 18, 2011). However, the anomaly will be watched and investigated further in the future. NRC reviewed the results of the testing and third party review in their integrated inspection report recently released on May 5, 2011. NRC noted that certain CST piping classifications found on the drawings reviewed were not clear with respect to their code classifications and therefore needed to be addressed by Entergy. This was characterized as an Unresolved Item (URI) or open item in the report.

A scheduled refueling outage that lasted 25 days was completed May 12th.

Looking Forward:

MDPH and MEMA will follow up with NRC and Entergy with respect to the NRC assessment of the CST piping.

As previously reported, Entergy and their consultants plan to develop additional soil sampling plans in light of the March soil sampling results showing no detectable tritium in soils in the vicinity of MW205 and MW206. The second phase of soil sampling will likely focus on areas located further up-gradient of MW205 and MW206.

The NRC is holding a public meeting on June 1st at 7 pm at the Hilton Garden in Plymouth. This is NRC's annual assessment of PNPS.

This summer, a meeting of agency staff and Entergy will take place to evaluate all tritium in groundwater data. Preliminary scheduling is underway.