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

Topic: PNPS Updates as of August 5, 2011

Previous Plans: Results from groundwater monitoring well samples collected during the weeks of July 19th and July 27th, 2011 were reported by Entergy (see tables below). Split sample results for the week of July 19th and July 27th, 2011 are currently being analyzed by MERL.

Current Status:

Table 1[1]: July 19th

Location	Date	MERL[2] pCi/L	GEL[3] pCi/L
MW 201	7/19/2011	**	588
MW 202	7/19/2011	-	-
MW 202 I	7/19/2011	-	-
MW 203	7/19/2011	-	-
MW 204	7/19/2011	-	-
MW 205	**7/19/2011**	****	**1,710**
MW 206	**7/19/2011**	****	**845**
MW 207	7/19/2011	-	-
MW 208-S	7/19/2011	-	-
MW 208-I	7/19/2011	-	-
MW 209 **new**	7/19/2011	**	1,160
MW 210 **new**	7/19/2011	-	-
MW 211 **new**	7/19/2011	**	847
MW 212 **new**	7/19/2011	-	-
MW 213 **new**	7/19/2011	-	-
MW 214 **new**	7/19/2011	-	-
MW 3	7/19/2011	-	-
MW 4	7/19/2011	-	-
SW-boat ramp	7/19/2011	-	-
SW-intake	7/19/2011	-	-

Table 2: July 27th

Location	Date	MERL pCi/L	GEL pCi/L
MW 201	7/27/2011	**	572
MW 202	7/27/2011	-	-
MW 202 I	7/27/2011	-	-
MW 203	7/27/2011	-	-
MW 204	7/27/2011	-	-
MW 205	**7/27/2011**	****	**9,100**
MW 206	**7/27/2011**	****	**1,220**
MW 207	7/27/2011	-	-
MW 208-S	7/27/2011	-	-
MW 208-I	7/27/2011	-	-
MW 209 **new**	7/27/2011	**	736
MW 210 **new**	7/27/2011	-	-
MW 211 **new**	7/27/2011	**	1,030
MW 212 **new**	7/27/2011	-	-
MW 213 **new**	7/27/2011	-	-
MW 214 **new**	7/27/2011	-	-
MW 3	7/27/2011	-	-
MW 4	7/27/2011	-	-
SW-boat ramp	7/27/2011	-	-
SW-intake	7/27/2011	-	-

*** NDA = not detected at less than activity value listed**
**** results pending**
***** well inaccessible due to scheduled equipment use**
- 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 an increase in MW205, which had a level of 1,710 pCi/L of tritium detected on July 19th and increased to 9,100 pCi/L of tritium detected on July 27th (the previous result on July 13th was 3,240 pCi/L). Results for MW206 show 845 pCi/L of tritium detected on July 19th and 1,220 pCi/L of tritium detected on July 27th (the previous result on July 13th was 804 pCi/L). Results for MW201 indicated 588 pCi/L of tritium detected on July 13th and 572 pCi/L of tritium detected on July 27th. Tritium results for MW209 and MW211 continue to be detected in the 1,000 pCi/L range. Specifically, for MW209, 1,160 pCi/L of tritium was detected on July 19th, and 736 pCi/L of tritium was detected on July 27th. For MW211, 847 pCi/L of tritium was detected on July 19th, and 1,030 pCi/L of tritium was detected on July 27th. For the weeks of July 19th and July 27th split sample results are currently being analyzed by MERL.

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. MDPH has requested, received, and evaluated additional information on detection criteria from the lab conducting this work and concurs that results to date indicate no dye has been detected in groundwater including the dye that was introduced directly to the soil beneath the French drain in February to help characterize groundwater flow in the area between the reactor building and the ocean.

As previously reported, MDPH continues to explore with Entergy the possible reason for ongoing fluctuations in tritium detected in MW205 and MW206. A potential source that remains under active investigation is the radwaste discharge line, which is upstream from the affected groundwater monitoring wells. Future actions currently being considered may include the installation of additional monitoring wells, excavations near the radwaste discharge line in order to inspect and test it, and/or additional soil sampling in the radwaste discharge line area. MDPH anticipates more discussion about these activities and other planned investigational activities during the upcoming meeting with Entergy and agency staff on August 15th, 2011.

Looking Forward:

A meeting between agency staff and Entergy has been confirmed for Monday, August 15th, 2011. Groundwater monitoring data collected over the past year will be reviewed, and next steps for the tritium investigation will be discussed, which may include installation of new monitoring wells, more soil sampling, or other activities. A comprehensive site visit at PNPS is also planned as part of the August 15th meeting that will include the spent fuel pool area, the radwaste processing area, and other areas within the reactor building.