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

Topic: PNPS Updates as of February 11, 2013

Previous Plans: Results from groundwater monitoring well samples collected during the weeks of January 7, 2013 and January 21, 2013 were reported by Entergy. Split sample results for the weeks of January 7, 2013 and January 21, 2013 were also reported by MERL.

Current Status:

Table 1[1]: Week of January 7th

Location	Date	MERL pCi/L	GEL pCi/L
MW 201	01/07/2013	545	479
MW 202	01/07/2013	-	-
MW 202 I	01/07/2013	-	-
MW 203	01/07/2013	-	-
MW 204	01/07/2013	-	-
MW 205	01/07/2013	594	657
MW 206	01/07/2013	1,798	1,940
MW 207	01/07/2013	-	-
MW 208-S	01/07/2013	-	-
MW 208-I	01/07/2013	-	-
MW 209	01/07/2013	976	828
MW 210	01/07/2013	-	-
MW 211	01/07/2013	1,122	1,070
MW 212	01/07/2013	-	-
MW 213	01/07/2013	-	-
MW 214	01/07/2013	-	-
MW 215	01/07/2013	1,017	1,130
MW 216 new	**01/07/2013**	**3,138**	**2,440**
MW 217	01/07/2013	-	-
MW 3	01/07/2013	-	-
MW 4	01/07/2013	-	-
SW-boat ramp	01/07/2013	-	-
SW-intake	01/07/2013	NDA(300)*	NDA(346)*

Table 2: Week of January 21st

Location	Date	MERL pCi/L	GEL pCi/L
MW 201	01/21/2013	457	NDA(368)*
MW 202	01/21/2013	-	-
MW 202 I	01/21/2013	-	-
MW 203	01/21/2013	-	-
MW 204	01/21/2013	-	-
MW 205	01/21/2013	1,561	1,090
MW 206	01/21/2013	2,124	2,000
MW 207	01/21/2013	-	-
MW 208-S	01/21/2013	-	-
MW 208-I	01/21/2013	-	-
MW 209	01/21/2013	1,010	765
MW 210	01/21/2013	-	-
MW 211	01/21/2013	1,248	1,090
MW 212	01/21/2013	-	-
MW 213	01/21/2013	-	-
MW 214	01/21/2013	-	-
MW 215	01/21/2013	1,139	1,110
MW 216 new	**01/21/2013**	**4,111**	**3,650**
MW 217	01/21/2013	-	-
MW 3	01/21/2013	-	-
MW 4	01/21/2013	-	-
SW-boat ramp	01/21/2013	-	-
SW-intake	01/21/2013	NDA(300)*	NDA(365)*

*** NDA = not detected at less than activity value listed**
**** results pending**
***** well inaccessible**
- 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.

The groundwater monitoring results reported by Entergy show MW205 decreased to a level of 657 pCi/L of tritium detected during the week of January 7th and increased to a level of 1,090 pCi/L of tritium detected during the week of January 21st (the previous result during the week of December 24th was 3,510 pCi/L). Entergy results show that MW206 decreased to a level of 1,940 pCi/L of tritium detected during the week of January 7th and increased slightly to a level of 2,000 pCi/L of tritium detected during the week of January 21st (the previous result during the week of December 24th was 3,670 pCi/L). Weekly sampling results for MW216 are discussed below. Results for the other wells sampled during the weeks of January 7th and January 21st were within typical ranges detected since the groundwater monitoring for tritium began. Split sample results from MERL for the weeks of January 7th and January 21st were generally consistent with Entergy results (see tables).

To date, weekly sampling results from Entergy for MW216 indicate fluctuations between 2,440 to 7,620 pCi/L of tritium detected for the weeks of September 17th through January 21st. The most recent results for MW216 were 4,580 pCi/L of tritium detected the week of January 14th and 3,650 pCi/L of tritium detected the week of January 21st. MERL split sample results for MW216 for September 17th through January 21st have also been generally consistent with Entergy's results. MDPH is continuing to closely monitor tritium levels in MW216 and in MW206 which both seem to be fluctuating with similar trends. Possible sources of tritium to groundwater in the vicinity of these monitoring wells that continue to be evaluated include the radwaste discharge line and a preferential pathway along the deep foundation of the reactor building upstream of MW216 and MW206, a legacy spill (i.e. the 1988 spill in the vicinity of MW216 and MW206 discussed in a previous update), and roof drain dry wells in the area. MW216 will continue to be sampled weekly.

Entergy surface water sampling results for the intake canal downstream of MW205 for the weeks of January 7th and January 21st indicated no detectable tritium. MERL split sample results for surface water also indicated no detectable tritium for samples collected during the weeks of January 7th and January 21st.

As previously mentioned, Entergy and their consultant are preparing a detailed summary of potential tritium sources that have been investigated during the past 2.5 years and their likely relationship to detections of tritium in groundwater at PNPS. MDPH anticipates receiving the report from Entergy in early spring, 2013.

Looking Forward:

MDPH will continue to closely follow all investigational activities that are currently underway at PNPS.