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

Topic: PNPS Updates as of October 30, 2012

Previous Plans: Results from groundwater monitoring well samples collected during the weeks of September 24 and October 1, 2012 were reported by Entergy. Split sample results for the weeks of September 24 and October 1, 2012 were also reported by MERL.

Current Status:

Table 1[1]: September 17th

Location	Date	MERL pCi/L	GEL pCi/L
MW 201	09/17/2012	NDA(300)*	438
MW 202	09/17/2012	-	-
MW 202 I	09/17/2012	-	-
MW 203	09/17/2012	-	-
MW 204	09/17/2012	-	-
MW 205	09/17/2012	1,850	2,260
MW 206	09/17/2012	1,409	1,640
MW 207	09/17/2012	-	-
MW 208-S	09/17/2012	-	-
MW 208-I	09/17/2012	-	-
MW 209	09/17/2012	692	1,060
MW 210	09/17/2012	-	-
MW 211	09/17/2012	897	901
MW 212	09/17/2012	-	-
MW 213	09/17/2012	-	-
MW 214	09/17/2012	-	-
MW 215	09/17/2012	916	1,060
MW 216 new	**09/17/2012**	**2,741**	**3,150**
MW 217	09/17/2012	NDA(300)*	440
MW 3	09/17/2012	-	-
MW 4	09/17/2012	-	-
SW-boat ramp	09/17/2012	-	-
SW-intake	09/17/2012	NDA(300)*	NDA(351)*

Table 2: October 1st

Location	Date	MERL pCi/L	GEL pCi/L
MW 201	10/1/2012	535	NDA(411)*
MW 202	10/1/2012	-	-
MW 202 I	10/1/2012	-	-
MW 203	10/1/2012	-	-
MW 204	10/1/2012	-	-
MW 205	10/1/2012	1,542	1,050
MW 206	10/1/2012	1,410	1,080
MW 207	10/1/2012	-	-
MW 208-S	10/1/2012	-	-
MW 208-I	10/1/2012	-	-
MW 209	10/1/2012	1,040	613
MW 210	10/1/2012	-	-
MW 211	10/1/2012	1,118	704
MW 212	10/1/2012	-	-
MW 213	10/1/2012	-	-
MW 214	10/1/2012	-	-
MW 215	10/1/2012	1,175	1,050
MW 216 new	**10/1/2012**	**3,088**	**2,250**
MW 217	10/1/2012	504	436
MW 3	10/1/2012	-	-
MW 4	10/1/2012	-	-
SW-boat ramp	10/1/2012	-	-
SW-intake	10/1/2012	NDA(300)*	NDA(419)*

*** 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 increased to a level of 2,260 pCi/L of tritium detected during the week of September 17th and decreased to a level of 1,050 pCi/L of tritium detected the week of October 1st (the previous result during the week of September 3rd was 1,400 pCi/L). Entergy results show that MW206 increased to 1,640 pCi/L of tritium detected during the week of September 17th and decreased to a level of 1,080 pCi/L of tritium detected during the week of October 1st (the previous result during the week of September 3rd was 1,080 pCi/L). Results for the other priority wells during the weeks of September 17th and October 1st were within typical ranges detected since the groundwater monitoring for tritium began (i.e. no detectable tritium to approximately 1,100 pCi/L of tritium detected). Split sample results from MERL for the weeks of September 17th and October 1st were generally consistent with Entergy results (see tables above).

As previously reported, new monitoring well MW216 was installed September 6th, developed the week of September 10th, and first sampled the week of September 17th. Weekly sampling results for MW216 to date indicated 3,150 pCi/L of tritium detected during the week of September 17th, 3,230 pCi/L of tritium detected during the week of September 24th, 2,250 pCi/L of tritium detected during the week of October 1st, and 2,670 pCi/L of tritium detected the week of October 8th. Split sample results for MW216 from MERL for the weeks of September 17th, 24th, October 1st, and October 8th (2,741 pCi/L, 3,373 pCi/L, 3076 pCi/L, and 3345 pCi/L of tritium detected, respectively) were generally consistent with Entergy results. MW216 is located down stream of the reactor building deep foundation and upstream of MW206. The location of MW216 will be added to the monitoring well location map on the MDPH tritium investigation website. Since the levels of tritium detected in samples collected from MW216 during the initial four consecutive weeks of sampling were consistently above background levels established for this monitoring effort, MDPH and MEMA have requested that Entergy collect four additional weekly samples. Results for these additional four consecutive weeks will be evaluated and a decision will be made on the future frequency of testing for this well

Entergy surface water sampling results for the intake canal downstream of MW205 for the weeks of September 17th and October 1st indicated no detectable tritium. MERL split sample results for surface water also indicated no detectable tritium for samples collected during the weeks of September 17th and October 1st.

Entergy reported that their sample collection team did not take a second surface water sample as part of the comprehensive sampling event the week of August 20, 2012. The quarterly surface water sample was collected from the intake canal on October 26, 2012 and shipped out for analysis on Monday October 29, 2012.

Entergy reported that soil samples collected in early September at the depth of pipe observation for the main stack drain line and the station heating line and from the MW216 monitoring well excavation just above the water table indicated no detectable tritium. Split soil samples were analyzed by gamma spectroscopy by MERL and indicated no detectible non-natural radionuclides (i.e. Cs-137). MERL does not have the capability to sample for tritium in soil.

Looking Forward:

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

MDPH, MEMA and Entergy are working to identify a possible date for another meeting between Entergy and agency staff to discuss next steps in the tritium in groundwater investigation.