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

Topic: PNPS Updates as of April 20, 2012

Previous Plans: Results from groundwater monitoring well samples collected during the weeks of March 20th and April 3rd, 2012 were reported by Entergy. Split sample results for the week of March 20th were also reported by MERL. Split sample results for the week of April 3rd, 2012 are currently being analyzed by MERL.

Current Status:

Table 1[1]: March 20th

Location	Date	MERL[2] pCi/L	GEL[3] pCi/L
MW 201	03/20/2012	459	NDA
MW 202	03/20/2012	-	-
MW 202 I	03/20/2012	-	-
MW 203	03/20/2012	-	-
MW 204	03/20/2012	-	-
MW 205	03/20/2012	2,494	2,620
MW 206	03/20/2012	1,983	1,440
MW 207	03/20/2012	-	-
MW 208-S	03/20/2012	-	-
MW 208-I	03/20/2012	-	-
MW 209	03/20/2012	1,091	769
MW 210	03/20/2012	-	-
MW 211	03/20/2012	1,182	951
MW 212	03/20/2012	-	-
MW 213	03/20/2012	-	-
MW 214	03/20/2012	-	-
MW 215 new	03/20/2012	1,381	1,200
MW 217 new	03/20/2012	522	520
MW 3	03/20/2012	-	-
MW 4	03/20/2012	-	-
SW-boat ramp	03/20/2012	-	-
SW-intake	03/20/2012	NDA	NDA

Table 2: April 3rd

Location	Date	MERL pCi/L	GEL pCi/L
MW 201	04/03/2012	**	NDA
MW 202	04/03/2012	-	-
MW 202 I	04/03/2012	-	-
MW 203	04/03/2012	-	-
MW 204	04/03/2012	-	-
MW 205	04/03/2012	**	6,940
MW 206	04/03/2012	**	1,050
MW 207	04/03/2012	-	-
MW 208-S	04/03/2012	-	-
MW 208-I	04/03/2012	-	-
MW 209	04/03/2012	**	1,050
MW 210	04/03/2012	-	-
MW 211	04/03/2012	**	1,230
MW 212	04/03/2012	-	-
MW 213	04/03/2012	-	-
MW 214	04/03/2012	-	-
MW 215 new	04/03/2012	**	1,310
MW 217 new	04/03/2012	**	494
MW 3	04/03/2012	-	-
MW 4	04/03/2012	-	-
SW-boat ramp	04/03/2012	-	-
SW-intake	04/03/2012	**	NDA

*** 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 MW205 decreased to a level of 2,260 pCi/L of tritium detected on March 20th and increased to 6,940 pCi/L of tritium detected on April 3rd (the previous result on March 6th was 5,090 pCi/L). Results for MW206 decreased to 1,440 pCi/L of tritium detected on March 20th and increased to 2,360 pCi/L of tritium detected on April 3rd (2,480 pCi/L of tritium was detected in the previous sample on March 6th). Results for the other priority wells were within their typical ranges between no detectable tritium and approximately 1,300 pCi/L of tritium detected for the weeks of March 20th and April 3rd (see table above). Split sample results from MERL for the week of March 20th were generally consistent with Entergy results (see tables above). Split sample results from MERL for the week of April 3rd are currently being analyzed. Entergy has reported that all groundwater monitoring well samples from the week of March 6th analyzed for hard-to-detects, including priority and non-priority wells, had no detectable hard-to-detect radionuclides (i.e. strontium-89, strontium-90, nickel-63, and iron-55).

Entergy results for surface water from the intake canal downstream of MW205 indicated no detectable tritium for the weeks of March 20th and April 3rd. Split surface water sample results from MERL for the week of March 20th also indicated no detectable tritium (see tables above). Split surface water sample results from MERL for the week of April 3rd are currently being analyzed.

No dye has been detected in any sample since the dye testing began in January 2011, including wells in the vicinity of the condensate storage tank valve pit French drain, which drains straight to the ground. This phase of dye testing has been concluded and Entergy is exploring a phase 2 of dye testing with their contractor, Ozark, which may include placement of dye directly into up gradient wells or directly to the groundwater table via excavation to better characterize groundwater flow, especially in light of dye not being detected downstream of the French drain after more than a year.

MDPH and MEMA have been receiving weekly updates from Entergy on the progress of installing the third new groundwater well, MW216, the original location of which was not technically feasible. Entergy has reported that MW216's project number has been obtained, and the excavation permit is in process. Installation of the well via vacuum excavation has been added to the Entergy work plan and the work is anticipated to begin in the late spring/early summer timeframe. After the well is excavated the vacuum excavation truck will remain on site for other site explorations, which may include excavating down to the main stack drain line, the station heating line, and electrical ducts in order to inspect them for possible leaks and potential tritium sources.

Looking Forward:

MDPH will continue to closely follow all investigational activities that are currently underway (i.e. well placement).

MDPH and MEMA plan to review Entergy's proposed next steps in the tritium investigation and will provide feedback once a more detailed summary document of the new investigation activities is provided by Entergy.