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

Topic: PNPS Updates as of March 28, 2012

Previous Plans: Results from groundwater monitoring well samples collected during the weeks of February 21st and March 6th, 2012 were reported by Entergy. Split sample results for the weeks of February 21st, 2012 and March 6th, 2012 have also been reported by MERL.

Current Status:

Table 1[1]: February 21st

Location	Date	MERL[2] pCi/L	GEL[3] pCi/L
MW 201	02/21/2012	514	707
MW 202	02/21/2012	-	-
MW 202 I	02/21/2012	-	-
MW 203	02/21/2012	-	-
MW 204	02/21/2012	-	-
MW 205	02/21/2012	5,406	4,380
MW 206	02/21/2012	2,392	2,180
MW 207	02/21/2012	-	-
MW 208-S	02/21/2012	-	-
MW 208-I	02/21/2012	-	-
MW 209	02/21/2012	1,200	1,200
MW 210	02/21/2012	-	-
MW 211	02/21/2012	1,318	1,380
MW 212	02/21/2012	-	-
MW 213	02/21/2012	-	-
MW 214	02/21/2012	-	-
MW 215 new	02/21/2012	1,465	1,600
MW 217 new	02/21/2012	573	901
MW 3	02/21/2012	-	-
MW 4	02/21/2012	-	-
SW-boat ramp	02/21/2012	-	-
SW-intake	02/21/2012	NDA	NDA

Table 2: March 6th

Location	Date	MERL pCi/L	GEL pCi/L
MW 201	03/06/2012	362	514
MW 202	03/06/2012	884	942
MW 202 I	03/06/2012	376	NDA
MW 203	03/06/2012	NDA	NDA
MW 204	03/06/2012	323	NDA
MW 205	03/06/2012	5,178	5,090
MW 206	03/06/2012	2,660	2,480
MW 207	03/06/2012	522	447
MW 208-S	03/06/2012	NDA	NDA
MW 208-I	03/06/2012	NDA	NDA
MW 209	03/06/2012	1,122	1250
MW 210	03/06/2012	931	1080
MW 211	03/06/2012	1,227	1220
MW 212	03/06/2012	504	534
MW 213	03/06/2012	NDA	NDA
MW 214	03/06/2012	NDA	NDA
MW 215 new	03/06/2012	481	1490
MW 217 new	03/06/2012	523	517
MW 3	03/06/2012	NDA	NDA
MW 4	03/06/2012	417	408
SW-boat ramp	03/06/2012	**	**
SW-intake	03/06/2012	NDA	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 4,380 pCi/L of tritium detected on February 21st and increased to 5,090 pCi/L of tritium detected on March 6th (the previous result on February 7th was 8,400 pCi/L). Results for MW206 decreased to 2,180 pCi/L of tritium detected on February 21st and slightly increased to 2,480 pCi/L of tritium detected on March 6th (2,890 pCi/L of tritium was detected in the previous sample on February 7th). Results for the other priority wells were within their typical ranges between no detectable tritium and approximately 1,800 pCi/L of tritium detected (see table above). Results for the non-priority wells from the week of March 6th were consistent with past results for these wells ranging from no detectable tritium to 1,000 pCi/L of tritium detected (see table above). Entergy has reported that they are having all groundwater monitoring well samples from the week of March 6th analyzed for hard-to-detects. Entergy will report these results to MDPH when they are available. Split sample results from MERL for the weeks of February 21st and March 6th were generally consistent with results reported by Entergy (see table above).

Entergy results for surface water from the intake canal downstream of MW205 indicated no detectable tritium for the weeks of February 21st and March 6th. Split sample results from MERL for the weeks of February 21st and March 6th also indicated no detectable tritium. To date, no tritium has been detected in any of the surface water samples.

The charcoal samplers placed in monitoring wells for the dye testing effort were most recently collected on February 23rd, 2012. Sample collection restarted January 12th, 2012. No dye has been detected in any sample since the dye testing began in January 2011.

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. All containers that were in the way of MW216 have been moved and all budgetary approvals have been granted. The excavation permit is being

processed, and once approved, ground penetrating radar can be scheduled and well excavation can proceed pending ground penetrating radar shows that the sub-surface is clear of interferences.

An in person meeting between Entergy, MDPH, MEMA and MDEP occurred Wednesday March 28, 2012 at MDPH to discuss the tritium in groundwater investigation to date and ways to proceed from here. A detailed document for new investigational activities was discussed at the in person meeting and will be summarized in a report Entergy is preparing. The new activities include addressing several possible sources (e.g., steam heating lines) and adding dye directly to an excavation down to the water table to better characterize groundwater flow specifically related to MW205 and MW206. To date no definitive source has been found despite the addition of new wells along the deep foundation, pipe line inspections, dye testing, soil sampling, and nearly two years of monitoring fluctuating tritium levels in MW205 and MW206.

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.