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

Topic: PNPS Updates as of January 20, 2011

Previous Plans: Results from groundwater monitoring well samples and surface water samples collected during the weeks of December 29th and January 4th, 2010, were reported by Entergy (see tables below). Split samples for these dates are currently being analyzed by MERL.

Current Status:

Table 1[1]: December 29th

Location	Date	MERL[2] pCi/L	GEL[3] pCi/L
MW 201	12/29/2010	**	1190
MW 202	12/29/2010	**	579
MW 202 I	12/29/2010	**	556
MW 203	12/29/2010	**	**
MW 204	12/29/2010	**	**
MW 205	12/29/2010	**	**3930**
MW 206	12/29/2010	**	**8950**
MW 207	12/29/2010	**	**
MW 208-S	12/29/2010	**	**
MW 208-I	12/29/2010	**	**
MW 209 **new**	12/29/2010	**	1870
MW 210 **new**	12/29/2010	**	930
MW 211 **new**	12/29/2010	**	1110
MW 212 **new**	12/29/2010	**	830
MW 213 **new**	12/29/2010	**	**
MW 214 **new**	12/29/2010	**	**
MW 3	12/29/2010	**	**
MW 4	12/29/2010	**	**
SW-boat ramp	12/29/2010	**	-
SW-intake	12/29/2010	**	-

Table 2: January 4th

Location	Date	MERL pCi/L	GEL pCi/L
MW 201	1/4/2011	**	875
MW 202	1/4/2011	-	-
MW 202 I	1/4/2011	-	-
MW 203	1/4/2011	-	-
MW 204	1/4/2011	-	-
MW 205	1/4/2011	**	**1410**
MW 206	1/4/2011	**	**4360**
MW 207	1/4/2011	-	-
MW 208-S	1/4/2011	-	-
MW 208-I	1/4/2011	-	-
MW 209 **new**	1/4/2011	-	-
MW 210 **new**	1/4/2011	-	-
MW 211 **new**	1/4/2011	-	-
MW 212 **new**	1/4/2011	-	-
MW 213 **new**	1/4/2011	-	-
MW 214 **new**	1/4/2011	-	-
MW 3	1/4/2011	-	-
MW 4	1/4/2011	-	-
SW-boat ramp	1/4/2011	**	NDA<338
SW-intake	1/4/2011	**	NDA<313

*** NDA = not detected at less than activity value listed**
**** results pending**
- 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 results reported by Pilgrim (summarized above) show that both MW 205 and 206 have decreased over the last two sampling rounds compared with results from samples collected December 15th. Specifically, for MW 205, MERL reported 20,333 pCi/L of tritium in December 15th samples and Entergy reported 17, 800 pCi/L. Tritium results from December 15th samples for MW 206 were 10,708 pCi/L from MERL and 10,300 pCi/L from Entergy. MW 201 continues to show levels of tritium detected at approximately 1,000 pCi/L, which has been typical of that monitoring well since early 2009. Results for the other groundwater monitoring wells have generally remained consistent with previous sampling rounds, and surface water samples continue to be non-detectable. All groundwater and surface water monitoring results continue to be posted on the DPH website. Entergy is continuing to work with their hydrogeological consultants to evaluate trends in the sampling data together with the timing of various processes in use at the facility in efforts to identify a possible tritium source.

As reported in previous updates, Entergy will be conducting dye tests for multiple systems and locations at the Pilgrim plant site and the dyes are scheduled to be introduced at the facility this week. Based on available hydrogeological information (i.e. groundwater flow velocity) for the site, it is anticipated that it could take several weeks or more before the dyes will be detected in groundwater monitoring wells.

A soil sampling schedule is in the planning stage between Entergy and their hydrogeological consultants. The soil sampling will be conducted in the vicinity of MW205 and MW206 to evaluate the possibility of a historical source of soil contamination that may be mobilized by a rising water table and causing tritium detections in these particular groundwater monitoring wells. Entergy and their consultants will be using ground penetrating radar to aid in determining the soil sampling locations and will be using the soft-dig method, using vacuum excavation, as they did when installing the monitoring wells onsite. These methods are necessary to avoid damage to any of the subsurface structures present on site. The sampling plan is to collect soil samples at the selected locations at depth intervals of five feet below the ground surface until the water table is reached. Entergy plans to begin the soil testing

in late winter/early spring depending on the availability of the necessary sub-contractors and the weather and soil conditions (i.e. frozen ground).

Results from the ultrasonic and guided wave tests conducted on the condensate storage tank piping have been sent out for review by a third party consulting firm. Entergy is expecting results from this review this week.

Looking Forward:

A meeting with MDPH, MEMA, MDEP and Entergy (to include their hydrogeologist consultants and members of their technical staff) is confirmed for the morning of February 4th at MDPH. A draft agenda for the meeting is being developed and will include a review and update on investigational activities conducted to date and a detailed discussion of trends in groundwater monitoring data.