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

Topic: PNPS Update as of December 3, 2010

Previous Plans: Results from groundwater monitoring well samples and surface water samples taken during weeks of November 18th and November 22nd, 2010, were reported by Entergy (see tables below). Splits of these two sampling dates are currently being analyzed by MERL.

Current Status:

Table 1[1]: November 18th

Location	Date	MERL[2] pCi/L	GEL[3] pCi/L
MW 201	9/20/2010	**	909
MW 202	9/20/2010	**	NDA<383
MW 202 I	9/20/2010	**	NDA<353
MW 203	9/20/2010	**	NDA<320
MW 204	9/20/2010	**	529
MW 205	9/20/2010	**	**5730**
MW 206	9/20/2010	**	**9250**
MW 207	9/20/2010	**	NDA<318
MW 208-S	9/20/2010	**	NDA<328
MW 208-I	9/20/2010	**	NDA<320
MW 209 **new**	9/20/2010	**	1830
MW 210 **new**	9/20/2010	**	1230
MW 211 **new**	9/20/2010	**	1050
MW 212 **new**	9/20/2010	**	745
MW 213 **new**	9/20/2010	**	NDA<312
MW 214 **new**	9/20/2010	**	NDA<302
MW 3	9/20/2010	**	NDA<305
MW 4	9/20/2010	**	491
SW-boat ramp	9/20/2010	**	NDA<305
SW-intake	9/20/2010	**	NDA<301

Table 2: November 22st

Location	Date	MERL pCi/L	GEL pCi/L
MW 201	9/27/2010	**	1290
MW 202	9/27/2010	-	-
MW 202 I	9/27/2010	-	-
MW 203	9/27/2010	-	-
MW 204	9/27/2010	-	-
MW 205	9/27/2010	**	**1810**
MW 206	9/27/2010	**	**4720**
MW 207	9/27/2010	-	-
MW 208-S	9/27/2010	-	-
MW 208-I	9/27/2010	-	-
MW 209 **new**	9/27/2010	-	-
MW 210 **new**	9/27/2010	-	-
MW 211 **new**	9/27/2010	-	-
MW 212 **new**	9/27/2010	-	-
MW 213 **new**	9/27/2010	-	-
MW 214 **new**	9/27/2010	-	-
MW 3	9/27/2010	-	-
MW 4	9/27/2010	-	-
SW-boat ramp	9/27/2010	**	NDA<319
SW-intake	9/27/2010	**	NDA<319

*** 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

A full round of samples was taken on November 18th. Based on Pilgrim's reported results, both MW 205 and 206 have shown decreases in their tritium levels since the November 1st sampling round. Specifically, MW-205 went from 16,700 pCi/L on November 1 to 5,730 pCi/L on November 18, while MW-206 went from 13,600 pCi/L on November 1 to 9,280 pCi/L on November 18. MW 201 continues to hover around the 1,000 pCi/L mark and all other wells exhibit no significant changes in their tritium levels. Surface water samples continue to show no detections of tritium.. MW 202, which is very close to and down gradient from MW 205, has also been below detectable limits since the end of September.

The dye testing process originally planned to start the week of December 6th was delayed due to the readiness of the firm being used for the testing. During the month of November, the dye-testing company compiled background data on the chemistry of the wells and storm drain systems along with the types of dyes they plan to introduce on the plant's site. This information is important to ensure that the dye testing will not violate storm water discharge requirements/regulations.

A proposal has been completed for the initiation of soil sampling around MW wells 205 and 206. The proposal is to sample four locations around each of the two wells at depths of five feet, ten feet, fifteen feet, and so on until hitting the water table. All samples will be tested for tritium, and selected samples will be tested for "hard-to-detects" as well. Soil samples will be split with the MDPH lab, MERL. Entergy needs to evaluate the safety plan for this excavation project before they can move forward with it. Similar to how they installed the wells, they will be using ground penetrating radar to determine the best locations and will use the vacuum excavation method to "dig." This process will likely begin after the New Year, but its start date could be affected by inclement weather or frozen ground.

The Ultrasonic testing done on the exposed portion of the condensate storage tank (CST) pipe has been completed. The results of this test show that there is no indication of pipe degradation, thinning of pipe walls, pitting, or other defects. The data from this

and the original Guided Wave test, which showed anomalies not seen in the latest Ultrasonic test, are being sent to a third party consultant that specializes in evaluating data like these for review. If the third party consultant confirms that there are no structural issues or defects in the CST pipe based on these data, then Entergy would consider this possible source as unlikely and not subject to further investigation for this specific issue. However, this pipe, along with other pipes and tanks, will continue to be monitored by the Buried Pipe and Tank Program which is in the process of being implemented by Pilgrim and many other plants around the country.

Looking Forward:

Weekly discussions will continue. John White, the NRC Branch Chief most closely involved with Massachusetts officials, announced that he would be retiring at the end of the month; Pamela Henderson will take his place. The weekly and bi-weekly sampling schedule will continue as planned: November 29th was an all inclusive sampling round. The week of December 6th will then be a priority sample round.