

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

Topic: PNPS Updates as of March 18, 2011

Previous Plans: Results from groundwater monitoring well samples and surface water samples collected during the weeks of March 1st and March 8th, 2011 were reported by Entergy (see tables below). Split samples results for the week of March 1st, 2011 have also been reported by MERL and split samples for the week of March 8th, 2011 are currently being analyzed by MERL.

Current Status:

Table 1¹: March 1st

Table 2: March 8th

Location	Date	MERL ² pCi/L	GEL ³ pCi/L	Location	Date	MERL pCi/L	GEL pCi/L
MW 201	3/1/2011	540	546	MW 201	3/8/2011	**	592
MW 202	3/1/2011	305	NDA<396	MW 202	3/8/2011	-	-
MW 202 I	3/1/2011	374	NDA<398	MW 202 I	3/8/2011	-	-
MW 203	3/1/2011	NDA<300	NDA<400	MW 203	3/8/2011	-	-
MW 204	3/1/2011	389	547	MW 204	3/8/2011	-	-
MW 205	3/1/2011	10393	9080	MW 205	3/8/2011	**	1080
MW 206	3/1/2011	1941	1990	MW 206	3/8/2011	**	2700
MW 207	3/1/2011	482	438	MW 207	3/8/2011	-	-
MW 208-S	3/1/2011	NDA<300	NDA<328	MW 208-S	3/8/2011	-	-
MW 208-I	3/1/2011	NDA<300	NDA<398	MW 208-I	3/8/2011	-	-
MW 209 new	3/1/2011	995	758	MW 209 new	3/8/2011	**	1240
MW 210 new	3/1/2011	518	421	MW 210 new	3/8/2011	-	-
MW 211 new	3/1/2011	1181	856	MW 211 new	3/8/2011	**	1170
MW 212 new	3/1/2011	558	578	MW 212 new	3/8/2011	-	-
MW 213 new	3/1/2011	374	NDA<398	MW 213 new	3/8/2011	-	-
MW 214 new	3/1/2011	NDA<300	NDA<397	MW 214 new	3/8/2011	-	-
MW 3	3/1/2011	NDA<300	NDA<397	MW 3	3/8/2011	-	-
MW 4	3/1/2011	323	NDA<337	MW 4	3/8/2011	-	-
SW-boat ramp	3/1/2011	NDA<300	NDA<325	SW-boat ramp	3/8/2011	-	-
SW-intake	3/1/2011	NDA<300	NDA<399	SW-intake	3/8/2011	-	-

* 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 groundwater monitoring results reported by Entergy show that MW205 increased from 1,330 pCi/L of tritium detected on February 22nd to 9,080 pCi/L of tritium detected on March 1st, and decreased to 1,080 pCi/L of tritium detected on March 8th. Results for MW206 have fluctuated slightly with 3,640 pCi/L of tritium detected on February 22nd, 1,990 pCi/L detected on March 1st, and 2,700 pCi/L of tritium detected on March 8th. Results for MW201 have been steadily lower than previous results near 1,000 pCi/L of tritium detected with 446 pCi/L of tritium detected on February 22nd, 546 pCi/L of tritium detected on March 1st, and 492 pCi/L of tritium detected on March 8th. February 22nd was the first week MW209 and MW211 were included in the weekly well sample collection. For February 22nd, results for MW209 indicated 1,130 pCi/L of tritium detected and results for MW211 indicated 956 pCi/L of tritium detected. For March 1st, results for MW209 indicated 758 pCi/L of tritium detected, and for March 8th 1,240 pCi/L of tritium was detected. For March 1st, results for MW211 indicated 856 pCi/L of tritium detected, and for March 8th 1,170 pCi/L of tritium was detected. For the week of March 1st, Entergy reported that they were able to collect surface water samples now that ice conditions have disappeared. Surface water sample results were non-detectable. For the week of March 1st split sample results from MERL, listed in the table above, were once again fairly consistent with Entergy results.

Results of snow samples collected on PNPS property the week of January 17th have been reported by Entergy. All snow samples came back with no detectable tritium concentrations.

As previously reported, the dye testing is proceeding as planned at PNPS. Dyes were introduced in three possible source locations in mid-January. The fourth dye was introduced into the French drain system near the condensate storage tanks (CST) in mid-February. Charcoal bags designed to detect the dyes continue to be collected from the groundwater monitoring wells (and replenished) on a weekly basis. The charcoal samplers are being collected weekly to determine whether the dyes are present in the groundwater, although this is not expected to occur in most wells for

several months or more due to the slow rate of groundwater flow. Entergy has reported that no dyes were detected in the first 6 weeks of results they have received from the dye testing company.

As previously reported, the vacuum soil extraction and collection of soil samples in the vicinity to MW205 and MW206 was completed on February 24th. Soil sampling results reported by Entergy all came back non-detect with detection limits ranging from 3.3 to 3.5 pCi/gram. Split soil samples are currently being analyzed by MERL.

MDPH coordinated with MEMA to review the third party report at PNPS and take another site tour, which took place on Wednesday March 16, 2011. Entergy has reported that results from the 3rd party review indicate no significant anomalies that would suggest a source for the tritium in groundwater. MDPH agreed with this summary of the third party review.

Looking Forward:

Entergy and their consultants plan to develop additional soil sampling plans in light of the recent results showing no detectable tritium in soils near MW205 and MW206. At MDPH's request, Entergy is also evaluating the impacts of ambient temperature on tritium levels in groundwater monitoring wells.