

What is the history of the determination of strontium-90 in onsite groundwater at Indian Point?

On March 21, Region I informed Entergy of recently received analytical results from a sample of monitoring well MW-37 (located in the Unit 2 Turbine Building, on the west side of the discharge canal) that was split with Entergy on February 28, 2006. The result indicated strontium-90 concentrations as high as 28 pCi/l. (Note: Sr-90 analysis typically takes several weeks to perform.) For perspective, EPA's drinking water standard is 8 pCi/l. This was the first indication of any radioactivity in groundwater other than tritium. Upon notification, Entergy confirmed Sr-90 at similar concentrations in MW-37. Subsequently, Region I and Entergy conducted a teleconference to inform stakeholders i.e., (federal, state, and local officials having an interest in Indian Point) of this new development; and Entergy issued a Press Release detailing the condition.

On April 13, during a teleconference with stakeholders, NRC, and New York State Department of Conservation, Entergy discussed the detection of Sr-90 in other onsite groundwater monitoring wells, and introduced the hypothesis that the source may be Unit-1 due to known longstanding leakage from the Unit-1 West Spent Fuel Pool. Water from this leakage and other groundwater was expected to be collected within the Unit-1 curtain drain system, which is continually processed and monitored for release to the discharge canal. However, the detection of Sr-90 in onsite groundwater suggests that some portion of the leakage may be bypassing the curtain drain system, an aspect which is being investigated.

In late April, Entergy informed Region I that water containing about 300 pCi/l of Sr-90 was found contained in the Unit-1 Containment Spray Sump. Entergy considered that this observation provided additional support that Unit-1 was, more likely than not, the source of Sr-90. In a stakeholder call on April 27, Entergy informed the participants of this new information, and its plans to install additional monitoring wells to better characterize the source and extent of groundwater contamination; and that, though the data seemed to strongly suggest that the most likely source of the Sr-90 was Unit-1, other possible sources were not being ruled out. Entergy initiated actions to pump out the Unit-1 Containment Spray Sump through a filter/demineralizer system, designed to remove Sr-90, and investigate the source and means of the Sr-90 groundwater contamination.

On May 17, Region I received analytical results from its contractor pertaining to samples split with Entergy on April 12 for some monitoring wells in the vicinity of Unit-3. The sample results indicated low levels of Sr-90, i.e., about 1 to 5 pCi/l. Region I notified Entergy of these results; and Entergy subsequently confirmed similar results on May 18. Subsequently, Entergy informed the stakeholders of this latest information through its daily status report; indicated that the results were consistent with Unit 1 being the source of Sr-90 in groundwater; but noted that additional sampling and analysis would be performed, including review of previous contamination events or conditions to determine other possible causes for the presence of strontium 90 at these locations.

Entergy performed a dose assessment which considered the public health and safety impact of Sr-90 contaminated groundwater migration to the Hudson River, and determined that the contribution would be no more than about 0.1 per cent of the NRC regulatory limit established for liquid effluents. NRC continues to review and assess new information and changes in conditions to assure that public health and safety is maintained.