Where Did The Tritium Come From?

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Abstract

Groundwater in-leakage into the Seabrook containment annulus area (an historic problem at Seabrook) was to be discharged through a normal flow path following the Sixth Refueling Outage (June 1999). A sample of the water was analyzed for gamma activity and found to contain none. However, analysis for tritium showed 7×10^{-4} μCi/ml. This result was unanticipated. Environmental levels of tritium are about 1×10^{-7} μCi/ml, and EPA limits on drinking water are 2×10^{-5} μCi/ml.

Although it is not possible for water in this area to migrate to drinking water sources, there were no sources of radioactive materials within this annulus area. The tritiated water was entering the annulus area from a location between buildings, which also contained no radioactive materials.

A Site Project Team was commissioned to fully investigate the source of the tritium, the mechanism by which it was getting to the annulus areas, and assess/implement methods to stop this migration.

Samples of wells immediately surrounding the buildings (within 50 feet) at Seabrook has shown that there is **no of migration of tritium off-site** through the groundwater system. The mechanism for the movement of the tritium into areas beneath the buildings will be presented as well as the solutions to prevent migration.