

Groundwater Events from US Nuclear Power Plants For the period April 14, 2010 through March 1, 2009

There were 15 radioactive leak events to groundwater from 13 different US nuclear power plants from March 1, 2009 through April 14, 2010.

On April 6, 2010, Public Service Electric & Gas management was notified that its Salem nuclear power plant on Artificial Island in New Jersey tested positive for tritium contamination in a storm drain system confirmed at approximately 1 million picocuries per liter.¹

On April 6, 2010, Tennessee Valley Authorities' Browns Ferry nuclear power station in Alabama spilled 1,000 gallons of tritiated water (2,050,000 picocuries per liter) during a transfer operation from one tank to another when plant personnel were unable to close an open test valve for nearly two hours.²

On February 9, 2010, Duke Energy's Oconee nuclear power station in South Carolina, tested positive for tritium in two new onsite ground water test wells onsite at 24,400 picocuries per liter and 35,400.³

On January 10, 2010, Progress Energy's Shearon Harris nuclear power station in North Carolina discovered an 8" diameter underground fiberglass pipe leaked approximately 1,000 gallons of tritiated water at 5,590 picocuries per liter into soil.⁴

On January 6, 2010, Entergy's Vermont Yankee nuclear power station in Vernon, Vermont was notified that a 2009 fourth quarter groundwater sample taken from an initial onsite test well tested positive for tritium with readings that would range in subsequently more test wells from 7000 picocuries per liter to 2.1 million picocuries per liter from deteriorated buried pipes that Entergy officials would initially deny existed in sworn testimony to state regulators.⁵

On December 28, 2009, Entergy's Fitzpatrick nuclear power station in Oswego, New York was notified that the west storm drain tested positive for tritium at 938 picocuries per liter. Entergy further disclosed that on November 3, 2009, the reactor building perimeter sump which communicates with the west storm drain had tested positive for tritium at 1,474 picocuries per liter but had not been previously reported because there was no evidence at the time of tritium in the storm drain or groundwater test well.⁶

On November 19, 2009, Constellation Energy's Ginna nuclear power plant in Ontario, New York notified the state Department of Environment Protection when sediment contaminated with an undisclosed amount of Cesium-137 fell into an excavation hole from a section of buried pipe that was being replaced. "The section of piping being replaced was between the plant storm drain system and the discharge canal. The radioactive material was identified as Cs-137 but was not quantified at the time of this report." This discharge canal flows into Lake Ontario.⁷

On September 10, 2009, Northern States Power's Monticello nuclear power plant notified the State of Minnesota that samples from a new groundwater test well near the reactor building sampled positive for tritium in groundwater at 21,300 picocuries per liter.⁸

On August 25, 2009, Exelon's Oyster Creek nuclear power station in Lacey Township, New Jersey notified the State of New Jersey of a tritium leak to groundwater from a buried condensate pipe in concentrations of 10 million picocuries per liter.⁹

On July 10, 2009, Exelon's Peach Bottom nuclear power station in Delta, Pennsylvania issued a news release that an on-site exploratory well tested positive for tritium in groundwater at 123,000 picocuries per liter.¹⁰

On June 6, 2009, Exelon's Dresden nuclear power station in Morris, Illinois reports as "part of the Station's continuing environmental monitoring and sampling program sample results from some of the monitoring wells indicated tritium at elevated levels." The event notice further stated "The IEPA/ IEMA regulation requires notification when a release to soil, groundwater, or surface water goes off-site at greater than 200 pCi/L or remains on-site greater than 0.002 Curies. Based upon the monitoring well results and the volume and concentration of groundwater infiltration into the nearby storm sewer, it is likely that the 0.002 Curie on-site threshold has been exceeded." The event report does not indicate by how much more, however. An excess of an "on-site threshold" of 0.002 Curie converts to more than 2 billion picocuries.¹¹

On May 11, 2009, Southern Nuclear Operating Company's Hatch nuclear power plant in Baxley, Georgia reported that on May 5, 2009 the operators were notified that a groundwater test well sampled positive for tritium at 36,300 picocuries per liter. This sample was confirmed to represent an increase in the levels of tritium in the same test well last sampled on March 16, 2009 at 5,400 picocuries per liter.¹²

On April 15, 2009, seven days after receiving a 20-year license extension from NRC, Exelon's Oyster Creek nuclear power station in Lacey Township, New Jersey notified the State of a "potential" release of tritium in a buried cable vault. A leak to groundwater is later confirmed to be approximately 200,000 gallons of radioactive water as high as 6 million picocuries per liter.¹³

On April 1, 2009, Progress Energy's Shearon Harris nuclear power plant reported that as part of its ongoing voluntary Groundwater Protection Initiative revealed that a leak in the buried Cooling Tower Blowdown line was releasing water contaminated with tritium at 2,120 picocuries per liter into the surrounding soil. The buried pipe line is used to routinely dilute and discharge tritium releases into Harris Lake.¹⁴

On March 3, 2009, Dominion Energy's Surry nuclear power plant near Williamsburg, Virginia reported that an on-site relief valve opened for about 20 minutes before it was identified and closed down. About 400 gallons of water contaminated with tritium at 4,810 picocuries per liter and cesium-137 at 25.1 picocuries per liter was spilled into soil.¹⁵

¹ US NRC Daily Event Report for April 8, 2010 Event Number 45821, <http://www.nrc.gov/reading-rm/doc-collections/event-status/event/2010/20100408en.html>

² US NRC Daily Event Report for April 8, 2010 Event Number 45820, <http://www.nrc.gov/reading-rm/doc-collections/event-status/event/2010/20100408en.html>

³ NRC Daily Event Report for February 10, 2010 Event Number 45690, <http://www.nrc.gov/reading-rm/doc-collections/event-status/event/2010/20100210en.html>

⁴ US NRC Daily Event Report for January 13, 2010 Event Number 45625, <http://www.nrc.gov/reading-rm/doc-collections/event-status/event/2010/20100113en.html>

⁵ US NRC Daily Event Report for January 8, 2010, Event Report 45613, <http://www.nrc.gov/reading-rm/doc-collections/event-status/event/2010/20100108en.html>

⁶ US NRC Daily Event Report for December 29, 2009 Event Number 45593, <http://www.nrc.gov/reading-rm/doc-collections/event-status/event/2009/20091229en.html>

⁷ US NRC Daily Event Report for November 20, 2009 Event Number 45510, <http://www.nrc.gov/reading-rm/doc-collections/event-status/event/2009/20091120en.html>

⁸ US NRC Daily Event Report for September 11, 2009 Event Number 45338, <http://www.nrc.gov/reading-rm/doc-collections/event-status/event/2009/20090911en.html>

⁹ US NRC Daily Event Report for August 26, 2009, Event Report 45299, <http://www.nrc.gov/reading-rm/doc-collections/event-status/event/2009/20090826en.html>

¹⁰ US NRC Daily Event Report for July 13, 2009 Event Number 45193, <http://www.nrc.gov/reading-rm/doc-collections/event-status/event/2009/20090713en.html>

¹¹ US NRC Daily Event Report for June 8, 2009 Event Number 45116, <http://www.nrc.gov/reading-rm/doc-collections/event-status/event/2009/20090608en.html>

¹² US NRC Daily Event Report for May 13, 2009 Event Number 45056, <http://www.nrc.gov/reading-rm/doc-collections/event-status/event/2009/20090513en.html>

¹³ US NRC Daily Event Report for April 16, 2009, Event Report 44993, <http://www.nrc.gov/reading-rm/doc-collections/event-status/event/2009/20090416en.html>

¹⁴ US NRC Daily Event Report for April 2, 2009 Event Number 44951, <http://www.nrc.gov/reading-rm/doc-collections/event-status/event/2009/20090402en.html>

¹⁵ US NRC Daily Event Report for March 5, 2009 Event Number 44891, <http://www.nrc.gov/reading-rm/doc-collections/event-status/event/2009/20090305en.html>