

The delay in the construction of the IWTU has resulted in the DOE's missing deadlines set by the settlement agreement with the state. Wasden had said that he would not consider granting a waiver to allow the shipments of spent fuel, the first of which was to come from Dominion's North Anna nuclear power plant, until the IWTU was operational and the DOE entered into an enforceable agreement to resolve the missed deadlines.

● Physicists at the Department of Energy's Princeton Plasma Physics Laboratory are proposing the use of a plasma-based centrifuge method to separate nonradioactive elements from radioactive waste in an effort to reduce the volume of nuclear waste and the costs associated with treating it. Known as plasma mass filtering, the new separation technique would supplement chemical techniques. Announced by PPPL on December 2, the research results first appeared in the paper "Plasma Filtering Techniques for Nuclear Waste Remediation," which was published in the October 2015 issue of the *Journal of Hazardous Materials* (Vol. 297).

Noting the challenge of safely treating radioactive waste, Renaud Gueroult, PPPL staff physicist and the paper's lead author, said that supplementing existing chemical separation techniques with plasma separation techniques "could be economically attractive, ideally leading to a reevaluation of how nuclear waste is processed."

According to PPPL, the high-throughput plasma-based mass separation techniques advanced at the laboratory offer the possibility of reducing the volume of waste that needs to be

immobilized through vitrification. Plasma mass filtering begins by atomizing and ionizing the hazardous waste and injecting it into a rotating filter so that the individual elements can be influenced by electric and magnetic fields. The filter then separates the lighter, less active elements from the heavier ones by using centrifugal and magnetic forces. As the lighter elements often do not need to be vitrified, processing the HLW would require fewer high-level glass canisters overall. The less-radioactive material then could be immobilized in a less costly waste form, such as concrete or bitumen, according to PPPL.

● The Department of Energy is seeking a 17-year delay in opening the Waste Treatment and Immobilization Plant (WTP) at the Hanford Site near Richland, Wash. In response to a request by the U.S. District Court for the Eastern District of Washington, the DOE and the state of Washington filed new deadlines for the WTP, it was reported in *Tri-City Herald* on November 14, 2015. Technical issues have delayed the construction of the WTP, otherwise referred to as the Vit Plant, which is being built to treat and vitrify Hanford's approximately 56 million gallons of radioactive liquid waste. The DOE, which has been reluctant to set a deadline for completing the WTP, has proposed bringing the plant into full operation by 2039. The state, however, has proposed a start-up date of 2034. Under a 2010 consent decree, which set certain milestones for the treatment of Hanford's waste, the plant was to be fully operational by 2022. The DOE and the state went to the federal court in late 2014 seeking new deadlines in the consent decree

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