

February 28, 2014

The Honorable Ernest Moniz  
Secretary  
U.S. Department of Energy  
1000 Independence Ave. SW  
Washington, DC 20585

Dear Secretary Moniz:

On October 22, 2012, the Department of Energy (DOE) announced that a leak had been discovered in tank AY-102 storing high-level nuclear waste at its Hanford facility. This was the first time that DOE had confirmed that a leak had occurred in one of its newer, double-shell tanks (DSTs). I have now learned that subsequent construction reviews of other DSTs indicate that at least six other tanks have construction flaws similar to those that are attributed to the AY-102 leak, and 13 additional DSTs may also be compromised. These 19 tanks together hold upwards of sixteen million gallons of high-level waste. The increased risk to citizens and the environment in the Northwest presented by these newly identified defects is heightened by the inability of DOE to provide any sort of firm schedule for starting or operating the waste treatment plant (WTP) and removing the waste from these and other Hanford tanks. In light of this information, which has apparently been available to the DOE for many months, I am requesting that you prepare an action plan within 45 days for responding to the increased safety and operational risks associated with these DST construction flaws, including an assessment of long-term options such the proposal made by Governor Kitzhaber<sup>1</sup> and Governor Inslee to construct new, multi-purpose high-level waste storage tanks.

A post-construction analysis prepared at the time of the October 2012 AY-102 announcement concluded that the leak was likely caused by construction problems with this specific tank and that "...it seems unlikely that the other double-shell tanks in similar circumstances would have been similarly affected."<sup>2</sup> When I visited Hanford a year ago, I was similarly led to believe that problems with the double-shell tanks were limited to this tank – the first of more than two dozen DSTs eventually constructed at the site. Contrary to the conclusion of the original assessment, the construction problems identified in the AY-102 report were not limited to that one tank. Two engineering reviews completed by a site contractor in July 2013 of the 3 DSTs in the SY tank farm<sup>3</sup> and the two tanks in the AZ tank farm<sup>4</sup> and a third review completed in August 2013 of the companion AY-101 tank<sup>5</sup> all found significant construction flaws in those six tanks essentially similar to those at the leaking tank. These six tanks contain roughly five million gallons of high-

<sup>1</sup> Letter from Gov. John A. Kitzhaber to Secretary of Energy Steven Chu, January 17, 2003

<sup>2</sup> "Tank 241-AY-102 Leak Assessment Report," RPP-ASMT-53973, Rev. 0, October, 2012.

<sup>3</sup> "241-SY Tank Farm Construction Extent of Condition Review for Tank Integrity," RPP-RPT-54819, Rev. 0, July, 2013.

<sup>4</sup> "241-AZ Tank Farm Construction Extent of Condition Review for Tank Integrity," RPP-RPT-54818, Rev. 0, July, 2013.

<sup>5</sup> "241-AY-101 Tank Construction Extent of Condition Review for Tank Integrity," RPP-RPT-54817, Rev. 0, August, 2013.

level waste. A further November 2013 review of the six double-shell tanks in the AW tank farm,<sup>6</sup> and a January 2014 review of the seven double-shell tanks in the AN tank farm,<sup>7</sup> concluded that the overall condition of those tanks is “judged to be better than that of tank AY-102,” but construction issues identified for these tanks, such as weld rejection rates, are cause for concern and “...leave room for uncertainty of long-term tank integrity....” These 13 additional tanks hold approximately 12 million gallons of high-level waste.

Under DOE’s current plans, the DSTs were supposed to hold and stage waste for decades to come while DOE retrieved and vitrified millions of gallons of waste from the 149, much older and leakier single-shell tanks. Compromised double shell tanks, including the AY, AW, and SY tank farms identified in these new reports, were to play essential roles in single-shell tank waste retrievals and staging of high-level wastes for vitrification,<sup>8</sup> As recently as September 2013, DOE released a “framework” document on how best to recover from the waste treatment plant set-backs, which discussed the role these tanks would play., though the document also noted with concern that “(t)he DSTs were not designed to support the extensive mixing and characterization sampling activities required by the WTP. Internal components particularly in the AY and AZ Tank Farm (e.g. airlift circulators) DSTs are not sufficiently robust to accommodate repeated stresses from high-shear mixer pumps without mitigating actions.”<sup>9</sup>

It is now apparent that DOE and its contractors had information, at the time of the framework document was released last September, that at least six additional DSTs in the AY and AZ tank farm had serious construction flaws which make the discussion of the limitations of these tanks misleading at best. It is not merely that the design of the tanks and internal components are a problem, but it now appears that the physical integrity of the tanks themselves is compromised. Given how important this issue is to future high-level waste operations and to the development of any sort of framework or plan to high-level waste clean-up, the Department’s failure to clearly identify and address these known tank vulnerabilities in the September framework document, or since, is indefensible.

Given the information now available concerning the state of the Hanford tanks, it is essential that DOE quickly come forward and present the region with a genuine plan for dealing with these growing risks. It is time for the Department to stop hiding the ball and pretending that the situation at Hanford is being effectively managed. The citizens living along banks of the Columbia River deserve to know the full story of what is happening with the Hanford tanks and they deserve to know what DOE is going to do to protect them from this threat.

Sincerely,



Ron Wyden

United States Senator

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<sup>6</sup> “241-AW Tank Farm Construction Extent of Condition Review for Tank Integrity,” RPP-RPT-55981, Rev. 0, November, 2013.

<sup>7</sup> “241-AN Tank Farm Construction Extent of Condition Review for Tank Integrity,” RPP-RPT-55982, Rev. 0, January, 2014.

<sup>8</sup> “Integrated Waste Feed Delivery Plan, Volume 1, Process Strategy,” RPP-40149-VOL1, Rev. 2, March, 2012.

<sup>9</sup> “Hanford Tank Waste Retrieval, Treatment, and Disposition Framework,” U.S. Department of Energy, September 2013.