

**Congress of the United States**  
**Washington, DC 20515**

January 18, 2013

The Honorable Steve Chu  
Secretary, Department of Energy  
1000 Independence Ave. S.W.  
Washington, DC 20585

Dear Secretary Chu,

I write to transmit a report by the Government Accountability Office (GAO) that Reps. Upton, Waxman, DeGette, Stearns and I requested entitled "Hanford Waste Treatment Plant: DOE Needs to Take Action to Resolve Technical and Management Challenges."

This report finds that the Department "faces significant technical challenges" in constructing the Washington State facility that is supposed to treat millions of gallons of high level nuclear waste that is being stored in 177 aging underground tanks, 70 of which have already leaked about 1 million gallons of waste into the groundwater, which feeds the Columbia River located about 12 miles away.<sup>1</sup> These challenges include the stunning possibility that the nature of the waste as well as the engineering of the facility could result in both nuclear criticalities and hydrogen explosions if the project proceeds as it is currently designed. The report also notes that the costs of the project have ballooned from \$4.3 billion in 2000 to a staggering \$13.4 billion today, and that additional cost increases and delays are likely to occur because the underlying technical challenges have yet to be resolved. Yet despite these glaring deficiencies, the report also found that DOE has prematurely provided financial performance awards to Bechtel, its contractor, for resolving technical issues associated with the project that later turned out to be unresolved.

I am also alarmed by the recent announcement<sup>2</sup> that the Department might attempt to simply bypass the most problematic so-called "Pretreatment facility," entirely, and instead feed waste directly to the high and low-level waste treatment facilities without first separating the types of waste. This same announcement also said that the Department is "now confident construction activities at the High-Level Waste facility can begin to be ramped back up." This determination seems especially problematic in light of a December 19, 2012 memo<sup>3</sup> to the Department from Gary Brunson, who until recently was the Director of the WTP Engineering Division. His memo recommends "that all activities affecting engineering design, nuclear safety, and construction and installation of all Structures, Systems and Components be stopped to avoid further nuclear safety compromises and substantial rework within WTP."

I urge you in the strongest possible terms to abide by the recommendation made by both GAO and Gary Brunson to maintain the suspension on construction activities for the problematic pre-treatment and high-level waste treatment facilities at the Hanford site until these outstanding

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<sup>1</sup> <http://www.hanfordwatch.org/introduction.htm>

<sup>2</sup> <http://energy.gov/articles/secretary-chu-governor-gregoire-issue-statement-hanford-cleanup>

<sup>3</sup> <http://www.hanfordchallenge.org/wp-content/uploads/2010/05/2012-12.19-Brunson-letter-Stop-Work.pdf>

technical challenges and nuclear safety issues are resolved. This is of particular importance since the waste is inherently so dangerous that some areas of the pre-treatment and high-level waste facilities will be permanently off limits to any human intervention once they begin operation, and thus any accident or malfunction will be even more challenging to remediate. A radiation release that occurs as a result of such an accident or malfunction could contaminate workers and possibly even the public, damage the environment, and render the entire waste treatment process inoperable for an unknown period of time.

Finally, I reiterate my requests for information and documents related to the Hanford project submitted to you in November 2011<sup>4</sup>. Despite the repeated assurances by your staff that the rest of the documents responsive to my request would be provided, the Department has thus far failed to provide them. I additionally request that you provide me with responses to the following requests for material and information:

- 1) Why did the Department originally believe that the pre-treatment facility was needed to separate the high and low-level nuclear waste before treating and vitrifying these waste streams?
- 2) The Department recently announced that it might be possible to bypass the need for the pre-treatment facility, enabling waste to be treated before it is separated into high and low-level waste streams. Please provide me with copies of all analysis conducted or obtained by the Department or its contractors in support of this announcement, including any analysis performed that addresses i) any new technical challenges or needed design modifications that could arise at the other WTP facilities as a result of the omitted separation step, ii) any cost or schedule changes (including both changes in construction and duration of operations of all facilities) that would be expected to arise as a result of the omitted separation step, and iii) any changes to the volumes of waste that would be expected to be generated as a result of the omitted separation step.
- 3) On December 19, WTP's Director of the WTP Engineering Division recommended "that all activities affecting engineering design, nuclear safety, and construction and installation of all Structures, Systems and Components be stopped to avoid further nuclear safety compromises and substantial rework within WTP." He made this recommendation because the seven highest priority technical problems with WTP remain "unresolved with an undetermined path forward." The memo goes on to state that these technical problems are "objective evidence of a condition of Indeterminate Quality. The Office of River Protection *Quality Assurance Program Description* includes among our basic beliefs: "Work suspension is appropriate when continued work would be unsafe, would be likely to be creating rework, and when safety or quality is indeterminate (MGT-PM-PL-04)." i) What is the Department's response to this memo? Please provide me with copies of all documents (including reports, emails, memos, phone or meeting minutes or other materials) obtained or prepared by the Department that relate to this memo. ii) How can the Department's recent announcement that it can ramp up WTP

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<sup>4</sup> <http://markey.house.gov/press-release/nov-22-2011-possible-whistleblower-retaliation-unsafe-operations-hanford-nuclear-waste>

construction be justified in light of this memo which recommends a complete cessation of all construction activities?

- 4) The Waste Treatment Plant (WTP) represents the fourth attempt by the Department to identify and implement a suitable method by which to treat Hanford's waste, and according to GAO, the Department has already spent \$16 billion in its past efforts. Given the serious nature of the technical challenges still faced, and in light of the historically troubled nature of past efforts, how can the Department justify spending any funds to do any further construction on any of the WTP facilities until these technical challenges are fully resolved?
- 5) The GAO report identified many of the same technical challenges that numerous technical and other independent experts have noted: The mixers that are supposed to keep the waste dispersed so as to avoid nuclear criticalities have not been shown to work, the nature of the waste could cause portions of the facility to corrode, erode and thus fail to work, the pre-treatment and high-level waste treatment facilities remain at risk for a buildup of flammable and explosive hydrogen gas, and the Department still does not have a complete understanding of the characteristics of the waste itself, which could mean that the design of any facility intended to treat it might not be adequate to do so. For each of these technical challenges: i) Does the Department agree with the GAO recommendation to halt construction of the pre-treatment and high-level waste treatment facilities until they are resolved, and if not, why not? ii) Will the Department ensure that the Defense Nuclear Facility Safety Board (DNFSB) concurs with any Departmental finding that all of these technical challenges are resolved prior to resuming such construction, and if not, why not?
- 6) According to GAO, the Department has "not yet fully estimated the cost and schedule impact of resolving technical challenges." Please provide such an estimate to me, including in your estimate a full discussion of the options being considered (ie such as the construction of an advanced processing facility to remove the largest solid particles from the waste prior to pre-treatment, the bypassing of the pre-treatment step altogether, operating the WTP at a slower pace for a longer period of time, reducing the total amount of waste the WTP treats, and ceasing all construction activities until all significant technical challenges are resolved).
- 7) According to GAO, in June 2012 the Department "announced that the new cost and schedule baseline Bechtel is developing would not include the pretreatment and high-level waste facilities." How can Congress have confidence in such a baseline if the facilities that pose the highest risk to cost and schedule are simply ignored?
- 8) According to GAO, in January 2012, DOE's Office of Health, Safety and Security reported that some aspects of the WTP design "may not comply with DOE safety requirements." In November 2011, DOE ordered Bechtel to suspend work on some WTP activities until they are "aligned with DOE nuclear safety requirements." Please provide me with a detailed description of the timeline for completing this alignment, whether the alignment will require additional design, cost or schedule changes, and if so, what the nature of those changes are expected to be.



- 9) My November 2011 letter detailed the retaliation against several technical experts who raised concerns about the WTP design that have been validated by DNFSB, GAO and others. I reiterate my November 2011 request that you please provide me with an update on the efforts by the Department to investigate and resolve the complaints brought by Dr. Walt Tamosaitis, Dr. Donald Alexander, and Ms Donna Busche. Please provide me with copies of all documents (including reports, emails, memos, phone or meeting minutes or other materials) possessed by DOE or the DOE Inspector General related to the allegations made by these individuals. Please also provide me with a description of any efforts the Department has made to remedy the safety culture problems associated with the WTP project.
- 10) I reiterate my November 2011 request that you please provide me with copies of all documents (including reports, emails, memos, phone or meeting minutes or other materials) possessed by DOE related to any inquiries conducted into the safety culture at the WTP facility within the last five years, including documents pertaining to allegations of harassment, intimidation, retaliation or discrimination by employees at the WTP in the last five years.
- 11) I reiterate my November 2011 request that you please provide me with copies of ) any emails to/from Dale Knutson from either his PNNL or DOE email addresses in the March 1, 2010, to July 31, 2011 period, b) any emails to/from Shirley Olinger in the March 1, 2010, to July 31, 2011 period, c) any emails related to the WTP or the allegations of safety problems at WTP to/from then-Assistant Secretary Triay or Deputy Secretary Poneman in the April, 2010 to July 2011 period.
- 12) GAO found several problems associated with the Department's management of Bechtel, such as i) a finding that normal project reporting requirements were not adhered to which resulted in "an overly optimistic assessment of progress on the progress," ii) a finding that DOE has paid Bechtel award and incentive fees for achieving specified project objectives that turned out not to have been met, and iii) a finding that "DOE has no assurance that the incentives included in the WTP construction contract" are effective in managing the technical, performance, schedule, and cost risks associated with the project. How does the Department plan to remedy these deficiencies and ensure that it is re-paid for any payments that it should not have made?

Thank you very much for your attention to this important matter. Please provide your response no later than close of business on February 15, 2013. If you have any questions or concerns, please have your staff contact Dr. Michal Freedhoff of my staff at 202-225-2836.

Sincerely,



Edward J. Markey