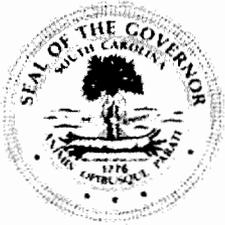


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STATE OF SOUTH CAROLINA

Governor's Nuclear Advisory Council

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Washington, D.C.

2-22-18

Subject: Issues with the Department of Energy (DOE) Intention to Utilize the Waste Isolation Pilot Plant for the Disposal of Weapons Grade Plutonium Not In Accordance with Mission and Permit Conditions Certified by the EPA

Dear Sir:

The purpose of this letter is to bring to your attention apparent unilateral actions being taken by the DOE to dispose of 40 tons of weapons grade plutonium at WIPP and to question whether these plans are indeed permitted under the terms of the Compliance Recertification Application submitted by the DOE in March 2014.

The South Carolina Governor's Nuclear Advisory Council held its quarterly meeting on October 12, 2017. Mr. Bob Raines, DOE Associate Administrator for Acquisition and Project Management, informed the Council that the National Nuclear Security Administration (NNSA), the semi-autonomous unit of the DOE, is planning to terminate the Mixed Oxide (MOX) Fuel Fabrication Facility project at the Savannah River Site. The MOX project was designed to utilize 34 tons of weapons grade plutonium surplus by the United States, and blend it with uranium for use as low enrichment fuel for commercial nuclear power reactors by using the "mixed oxide" method of treating the weapons grade plutonium. This method was selected following a decade of technology and economic evaluations by the DOE. The mixed oxide treatment method results in an isotopically altered plutonium by-product after nuclear fission irradiation in a commercial reactor core that is no longer a viable nuclear weapon form. The MOX project is presently under construction and is scheduled to begin treating the 34 tons of weapons grade plutonium declared surplus after the project is completed.

It is our understanding from Mr. Raines presentation, that in addition to the 34 tons of weapons grade plutonium to be treated at the MOX project, the DOE has an additional



6 tons of plutonium which cannot be treated by the mixed oxide method that requires disposition.

In place of the MOX project methodology, Mr. Raines informed the Council that the NNSA would substitute a "Dilute and Dispose" methodology (D&D) by blending the weapons grade plutonium with "Stardust", a classified inerting material, rendering the plutonium difficult to separate and then would ship the mixture to the Waste Isolation Pilot Plant (WIPP) in New Mexico for ultimate disposal. Mr. Raines also stated the DOE is presently sending smaller quantities of weapons grade plutonium to WIPP (this quantity of plutonium is not suitable for use as MOX fuel) and would plan to send an additional 34 tons of the plutonium/stardust mixture resulting from this new D&D program. Since D&D is underway at this time, we initially assumed that this process was approved and meets all EPA environmental assessment, risk analysis and associated permit requirements associated with WIPP.

After reviewing the DOE plans for disposal of the weapons grade plutonium at WIPP as well as public domain research, we continue to have the following concerns regarding the plans presented by the DOE at our meeting::

1. Lack of DOE Fidelity and Basis for Re-Certification of WIPP Operations - The EPA recently recertified that WIPP is in compliance with its permit to operate (FR Vol 82, No. 137, July 19, 2017). This determination was based on the latest Compliance Recertification Application (CRA) submitted by the DOE in March of 2014. However, the CRA issued by the DOE in 2014 did not include significant changes to the source term for TRU waste planned for WIPP. The DOE (CRA) omitted:

- Transportation of 40 tons of blended Pu²³⁹ in +/- 5000 truck shipments from South Carolina to New Mexico
- Deposition of surplus Pu²³⁹ in a TRU repository
- The planned tripling of the fissile inventory at WIPP
- The planned increase in fissile concentration by two orders of magnitude
- The proposed use of an unapproved waste container (CCOs)
- Shipment of "Special Nuclear Material" to a facility without an enhanced security program

In April of 2016 the DOE issued a Record of Decision (ROD) outlining their plan to send 6 metric tons of surplus non-pit plutonium to WIPP for disposition (FR Vol. 81, No. 65, April 5, 2016). The environmental impacts of this decision were documented in a Final Environmental Impact Statement Supplement (DOE/EIS-0283-S2) issued in April of 2015. The recent decision by DOE, having announced an intention to terminate the MOX Fuel Fabrication Facility (MFFF) would send an additional 34 metric tons of surplus weapons grade plutonium to WIPP.

We would like to bring four important facts of concern to your attention.

1. The original source term for WIPP included 21.1 metric tons of Fission Gram Equivalent (FGE) Pu²³⁹. With the actions planned by the DOE, they are proposing to place an additional 40 metric tons of pure Pu²³⁹ in WIPP.
2. The final EIS that supports the ROD (DOE/EIS-0283-S2) contains no assessment of the impact on WIPP of the proposed action; the EIS only considered the impacts of preparing the Special Nuclear Material (SNM) for shipment to WIPP. There is no assessment of the impact on WIPP of terminating the MOX project and delivering an additional 34 metric tons of Pu²³⁹ to WIPP.
3. At the time of the submittal of the CRA to the EPA in 2014, DOE was aware of the plans to make a major increase in the fissile inventory at WIPP, yet their CRA contains no mention of this intention.
4. With the termination of the MOX project, the DOE has no other disposition pathway for their surplus weapons plutonium other than emplacement at WIPP. This likely represents an unanalyzed additional increase in the fissile inventory to WIPP beyond the 40 metric tons.

We find it alarming that the DOE may have neither thoroughly examined the safety and acceptability of these changes, nor, to our knowledge, undertaken any effort to inform the EPA by means of a supplemental EIS for WIPP or an official notification via the CRA.

2. DOE Inconsistencies, Departures from Original WIPP EM Mission, and Unaddressed Safety Concerns

There are several critical technical, regulatory, policy, and public safety issues associated with D&D of surplus plutonium at WIPP that do not appear to have been addressed by the DOE and need to be identified as outlined below. These include:

- There are inconsistencies in the Environmental Assessments (EA) being used by DOE. WIPP has an EA which assesses a 10,000 year life model for its contents. The Yucca Mountain project, a facility designed for disposing high level waste like surplus plutonium is based on 1,000,000 years for its EA model. We find this disparity very troubling.
- According to the GAO's findings (GAO-17-390 Report issued in September 2017), WIPP does not have adequate capacity to receive the anticipated total volume of waste currently scheduled for deposition at WIPP. The addition of the weapons grade plutonium from Savannah River will require an expansion of the facility. It is baffling that the DOE has not recognized its own data.

- According to statements by former Governor of New Mexico and U.S. Secretary of Energy, Bill Richardson, WIPP was never intended to be a depository for weapons grade plutonium. With respect to the disposition of plutonium, he stated, *“This is not a good idea for a variety of reasons, but mainly that WIPP is not suitable to be a high level waste dump ... WIPP opened 16 years ago with my approval as Secretary of Energy, but only to accept low-level defense “transuranic waste”, or TRU, which is mainly contaminated gloves, tools, rags, assorted machinery and sludge.”*

If NNSA were to proceed with this D&D program, WIPP would become the third largest concentration of weapons grade plutonium in the world, exceeded only by the nuclear stockpiles of Russia and the United States and, according to our information, will be stored without safeguards level security. It is unprecedented that US policy based on a decade of research, international agreements and Record of Decision has been unilaterally overturned in this manner.

- Essential criticality studies and safety evaluations have not been performed. Both Texas A&M University and Studsvik Scandpower (recognized world leaders in criticality studies) have reports identifying that there is a significant possibility of a criticality occurring under the NNSA planned D&D of surplus plutonium at WIPP. That the NNSA has characterized these reports as simplistic and non-credible is alarming.
- The closure of the MOX project and implementation of the D&D program at WIPP, will result in the need to transport weapons grade plutonium using more than 5,000 truckload shipments across the United States from Savannah River to WIPP. This new condition has not been included in any EA to our knowledge.

3. Flawed DOE Decision and Possible Violation of NEPA Requirements

The DOE’s plans to terminate the MOX Project and dispose weapons grade plutonium at WIPP represents a possible serious breakdown in the obligation and responsibility of the DOE to comply with federal regulations to ensure the protection of public safety and the environment from the consequences of a significant federal decision to execute these plans. The DOE clearly intends to expand, without due process, the original licensed mission of WIPP from a repository of environmental management (EM) legacy TRU wastes resulting from the cleanup of the weapons complex to a repository for surplus weapons grade plutonium disposition. We have discovered no public domain record of the DOE informing the EPA of this intention. In the absence of information to the contrary, we conclude that DOE has neglected to inform and include the EPA in their intentions. Independent assessments of this DOE plan performed from 2015 to 2016 and in the public domain have raised serious concerns, as noted above, regarding nuclear criticality, safety and other

safeguards security concerns regarding this matter. The DOE has continued to reject any questions or criticism of this new approach. They apparently intend to proceed with this plan without any serious independent technical assessment or revised CRA that recognizes the significant increases in source term, fissile activity, and quantities of surplus weapons plutonium. It appears the DOE has failed to comply with NEPA requirements as we are unable to find documents showing they have notified the EPA of their plans. In the absence of a notification from the DOE, we believe your organization has not been able to enforce the prescribed process for such a draconian change to the permitted use of WIPP.

We believe that you should be aware of these facts and our conclusions and would welcome sharing more information with you.

In the meantime, we request your confirmation whether or not the EPA is in full agreement that the NNSA may proceed with their plans to utilize this proposed approach allowing WIPP to receive and dispose of this inventory of weapons grade plutonium and the NNSA has satisfied all of EPA's questions and concerns.

Very truly yours,



Rick Lee
Chairman
S.C. Governor's Nuclear Advisory Council

cc:

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Governor of the State of South Carolina

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Under Secretary Steven C. Erhart
Under Secretary for Nuclear Security and Administrator of the NNSA
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