RADIOACTIVE & HAZARDOUS MATERIALS COMMITTEE
TRANSPORT OF WEAPONS GRADE PLUTONIUM

Nov. 15, 2024

Cynthia Weehler, Co-Chair 285 Alliance

Thank you for your interest in the public's safety about the transport of nuclear waste.

Plutonium-239 is the weapons grade waste being transported. We will see shipments of that element increase many, many, times over the next 60 years if the Department of Energy's proposed new mission is allowed, so we have to know as much about it as possible. This very radioactive, completely manmade, element didn't even exist until we created it to trigger the atomic bomb in 1940. It's not a natural element; it's essentially new to Earth.[1,2]

The subjects I taught for 25 years, astronomy and chemistry, tell us that all natural elements are made in stars as they die; everything in your body and everything around you are made of elements that first formed in stars. *All except the ones that make nuclear waste*. Human-created plutonium has only existed 80 years. Natural elements have existed on Earth for 4.6 billion years. Life grew up with natural elements and we need them to survive. But we're still working out the bugs with plutonium. When something's new, you don't know which consequences to anticipate; you have to learn what it can and can't do piecemeal, by trial and error.

I want to clarify some common misunderstandings by looking at four facts about plutonium, because transportation policies would change if we interpret those facts using common sense.

Facts and Common Sense

Fact #1: Plutonium is a new, unnatural substance that has unique properties.

Common sense: Newness leads to mistakes that often can't be anticipated. We've already experienced them.[3] DOE treats nuclear waste transport as if all its risks are known. They aren't. Common sense tells us it's unwise to think that something we've transported for only 24 years has taught us everything we need to know to do it safely.

Fact #2: Plutonium lasts half a million years. The WIPP repository promises to dispose of it safely for 10,000 years.

Common sense: DOE can't keep this promise because a 10,000-year WIPP is an experiment. Physicists and engineers can't promise this, and they know it. That's why it's called a "pilot" plant. DOE has the world embarking on an experiment that ***we*** won't know the answer to, ever.

We've made many tons of plutonium in the past 80 years, and, because it decays so slowly, we still have the first cupful. It will take 480,000 years before all of it is gone. [4]

Even if WIPP could safely hold the waste for 10,000 years, no one knows what to do with it for the remaining 470,000 years. It will still be plutonium-239, less of it, but as dangerous as it was on the day it was made.

WIPP isn't a solution to a half million-year problem. It unforgivably postpones it so that our problem becomes someone else's.

Fact #3: Transuranic or TRU waste is *not low-level waste*. Many countries consider plutonium high level waste, none consider it low-level. In the US, plutonium is high-level when it's made in nuclear reactors; transuranic or TRU when made for weapons. The key is that, like high-level waste, it must be disposed of in a deep, underground geologic repository.[5]

Common sense: Plutonium atoms are plutonium atoms. They aren't magically less dangerous because the US classifies them as transuranic or TRU waste. Whether used for bomb triggers or in nuclear reactor fuel rods, they contain the same radioactivity and heat. The US alone uses the innocuous sounding category TRU or transuranic for weapons' waste mixed with contaminated materials. This confuses rather than clarifies and leads the public and policy makers, like yourselves, to think it's safer than it is.

Fact #4: When inhaled, powdered plutonium-239 causes cancer 100% of the time.[6] (Nobel-Prize-winning Physicians for the Prevention of Nuclear War) Inhaled powdered plutonium isn't exhaled but lodges in the lungs and keeps on irradiating tens of thousands of nearby cells for decades.[7] DOE is transporting it past unsuspecting communities that have limited emergency resources.

Common sense: If Plutonium is most dangerous as tiny particles that can be inhaled, how does it become particles? It happens in traffic accident fires, forest fires, or when it's purposely powdered as it is at LANL. Future plans are to ship 26 MT of plutonium pits from Pantex to LANL, where it will be powdered and then shipped past these New Mexico communities and so many more in other states as it's shipped back to Pantex, then across the country to South Carolina, and then back again to WIPP. Homes, farms, ranches, and people's lives are all at risk.

This is playing Russian roulette with people who don't know they're being played. Transport should be limited as much as possible and the public clearly educated about the risk and what to do in an accident. This includes first responders. A former fire chief flatly stated that he learned about the new waste transport plans when he heard it from me at a community presentation.

DOE is keeping the facts to itself in what can only be called a coverup. It knows the facts; it doesn't want us to know them because we'll apply the common sense that shows what a dangerous plan this is. This is why we worry for our communities.

What do common sense and these 4 facts tell us about how to transport plutonium weapons waste?

- Limit its transport.
- Inform communities being put at risk about the risk.
- Have robust emergency procedures in place.
- Stop making more.

DOE hasn't finished the one mission with which it was tasked: to dispose of legacy waste from old weapon production. It needs to finish that mission by putting the waste that's already been made into the repository, however inadequate that is.

We recommend that DOE complete that mission and close. The legacy waste endangers the public where it is. Some sits in drums in canvas tents at LANL, in a forest where wildfires have almost reached the plutonium four times in recent years. If this quite likely scenario happens, the plutonium would be vaporized and blanket northern New Mexico, making the land permanently uninhabitable, similar to Fukushima, Japan. DOE has to get it off the mountain, safely and soon.

No new waste should be put in WIPP. New waste—"surplus plutonium" and waste from new plutonium pit production—violates New Mexico's legal agreement with DOE and increases all the risks common sense tells us to avoid.

Yet DOE plans to ignore the old waste so it can start moving new waste. It's managers clearly tell us that the old waste requires more work and time, most recently at their Las Vegas Community Forum on October 24. DOE doesn't have the authority to change the mission without New Mexico's approval.

New Mexico has the responsibility to stop new missions. I'll be glad to answer questions and present ideas for actions the Committee can take, if it wishes.

Possible suggestions for the Committee about what it can do:

1. It's helpful that you invited Mr. Wachter from SERC to present. I'm sure he has given truthful information, but he would benefit from guided questions, such as:
    - We've learned there is no more of the medical chelating agent, the compound used when someone is internally contaminated with plutonium, in hospitals. What is the alternative treatment? Is it available wherever plutonium is being shipped?
    - How many Hazmat kits are available and where are they? Santa Fe County has none.
    - How long would it take to inform people if powdered plutonium is released? They would need immediate instruction because of how quickly it becomes deadly through inhalation.
    - How do you plan to inform the public ***before an accident*** to shelter in place if powdered plutonium has been released and to get indoors immediately?

2. Talk to our Governor.

   What you say matters because she knows it's coming from your constituents and from your experience on this committee. The Governor has been supportive, and we value that. But we need her to use the tools that she inherited from Governors King and Richardson, Senators Bingaman, Domenici, and Udall, and others, to deny the overreach of this mission by the federal government.

3. Members of this Committee are also powerful communicators to the Environment Department.

   Now that the WIPP permit has been renewed, NMED's job is to monitor DOE compliance, *as it is legally required to do*. Our NGO coalition worked on the permit with NMED and, as a condition of it, meets monthly with DOE officials. But NGOs need the state NMED to take the permit as seriously as they do.

---

[1] Jones, Andrew Zimmerman. (2024, September 2). Stellar Nucleosynthesis: How Stars Make All of the Elements. Retrieved from https://www.thoughtco.com/stellar-nucleosynthesis-2699311

[2] Poston, Sr., John W., Do Transuranic Elements Such as Plutonium Ever Occur Naturally? 1998. https://www.scientificamerican.com/article/do-transuranic-elements-s/

[3] Plutonium, Deadly Gold of the Nuclear Age, Special Commission of The International Physicians for the Prevention of Nuclear War & the Institute for Energy & Environmental Research, 1992, pg. 72-109, https://www.ippnw.org/wp-content/uploads/2020/07/PlutoniumDeadlyGold1992.pdf, "The true security and environmental dimensions of the plutonium problem are only now becoming evident. With the end of the Cold War, the difficulty and expense of dealing with pollution and health problems resulting from plutonium production are beginning to be calculated. Even with great efforts, there is no doubt that many of the environmental and health burdens of plutonium production will be passed on to future generations."

[4] Caldicott, Helen, MD, Internal Radioactive Emitters -Invisible, Tasteless, and Odorless, https://www.helencaldicott.com/internal-radioactive-emitters-invisible-tasteless-and-odorless/
"The half-life of plutonium is 24,400 years, so it can cause harm for 500,000 years; inducing cancers, congenital deformities, and genetic diseases for the rest of time. Not only in humans, but in all life forms."

[5] Makhijani, Arjun, Classifications of Nuclear Waste, 5/ 2012, Institute for Energy and Environmental Research, https://ieer.org/resource/classroom/classifications-nuclear-waste/

[6] Nobel Prize-winning organization International Physicians for the Prevention of Nuclear War, Chazov, Yevgeny, USSR Cardiological Institute, co-founder of IPPNW, International Physicians for the Prevention of Nuclear War, Nobel Prize Lecture, 1985 https://www.nobelprize.org/prizes/peace/1985/physicians/lecture/

[7] Plutonium, Deadly Gold of the Nuclear Age, Special Commission of The International Physicians for the Prevention of Nuclear War & the Institute for Energy & Environmental Research, 1992, pg. 6-20, https://www.ippnw.org/wp-content/uploads/2020/07/PlutoniumDeadlyGold1992.pdf