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Billions of Taxpayer Dollars to be Spent on Plutonium Pit Production NNSA Chooses Speed Over Safety Condone Potential Lethal Radioactive Doses to Public

Santa Fe, NM – The National Nuclear Security Administration (NNSA), the semi-autonomous nuclear weapons agency with the Department of Energy, is no longer pursuing a safety class active confinement system at PF-4, the Los Alamos National Laboratory’s plutonium pit manufacturing facility. This is a long-running battle between the independent Defense Nuclear Facilities Safety Board (DNFSB) and NNSA.

The Safety Board has strongly recommended active confinement systems since 2004, reporting that they “will continue to function during an accident, thereby ensuring that radioactive material is captured by filters before it can be released into the environment.”¹ However, a few years ago NNSA tried to kill the messenger by seriously restricting DNFSB access to NNSA nuclear facilities across the country. That regressive effort was defeated through strong public and congressional opposition. But now NNSA chooses to ignore Safety Board recommendations, putting the public at increasing risk even as the agency squanders billions to speed up unnecessary expanded plutonium “pit” bomb core production while cutting corners on public safety.

Recently released federal budget numbers show that funding for “Plutonium Modernization” at LANL is being increased 61% to \$1.6 billion for fiscal year 2023 alone. Within that, funding to expand pit production at the aging PF-4 facility is being increased 68% to \$588 million. But the Safety Board reports that “Personnel shut down the ventilation system for the north half of PF-4 because of malfunctioning damper actuators.” As a result, all normal mission activities in the north half were temporarily terminated. No plans exist for upgrades to this protection for the public even though the existing system is clearly not working. Dramatically increased pit production will only increase the chances of a radioactive release to the public.

However, NNSA apparently is not too concerned with potential radioactive doses to the public. It condoned a potential 3,175 rem² dose to the public when it gave a green light to a program with “no viable control strategy” protecting the public. This directly contradicts Department of Energy regulations that allow only up to a 25 rem radioactive dose to the public.

NNSA Headquarters in Washington, DC conditionally approved an amendment to PF-4’s formal “safety basis” because of anticipated large shipments of plutonium-238, used in radioisotope thermoelectric generators (which are nuclear batteries for deep space and national security missions, including nuclear weapons). While not used in plutonium pit bomb core production, plutonium-238 is generally regarded as very dangerous because it is a strong gamma ray emitter. In the agency’s own words, “NNSA deemed the risk acceptable based on the conservatism in

the analysis, the low likelihood that the accident occurs, and the limited number of shipments.” However, LANL has a chronic safety record of nuclear mishaps, and the lack of a safety class active confinement system has serious potential consequences for all plutonium missions at PF-4.

In addition to the plutonium-238 mission, a number of other plutonium issues converge at PF-4, beginning with its age (it was built in the mid-1970’s primarily as a research, not production, facility). First and foremost is the headlong rush by NNSA to expand the production of plutonium pits to at least 30 pits per year by 2026, with a built-in “surge” capacity of 80 pits per year. The latter is becoming increasingly likely as planned redundant pit production at the Savannah River Site (SRS) in South Carolina more than doubles in costs and faces serious delays.

In addition, NNSA expects PF-4 to begin processing up to 2.5 tons of “excess” plutonium per year before being sent to SRS for treatment and then shipped back to the Waste Isolation Pilot Plant in southern New Mexico for permanent disposal. Throughout all this NNSA is relying upon a woefully outdated nation-wide programmatic environmental impact statement (PEIS) on pit production³ and a LANL site-wide environmental impact statement, both completed in 2008, to meet its legal requirements under the National Environmental Policy Act for public review and comment. In contrast to the very low potential radioactive doses NNSA calculated in those public documents, in 2020 the Safety Board calculated a potential lethal dose to workers of 760 rem and 24 rem to the public from incompatibly mixed radioactive wastes.⁴

Scott Kovac, NukeWatch Research director, commented, “DOE and the National Nuclear Security Administration are ignoring their own regulations to meet their own arbitrary schedules. This is unchecked lack of regulation with flimsy rationalizations, imperiling public safety. It is the harbinger of what’s to come with expanded plutonium pit bomb core production at LANL, which we have always opposed.”

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This press release is available at <https://nukewatch.org/lanl-plutonium-safety-pr-4-22-22/>

Two relevant Defense Nuclear Facilities Safety Board reports (bolded emphasis added):

April 1, 2022

<https://www.dnfsb.gov/sites/default/files/document/25541/Los%20Alamos%20Week%20Ending%20April%201%202022.pdf>

SUBJECT: Los Alamos Activity Report for Week Ending April 1, 2022

Plutonium Facility–Infrastructure: On Tuesday evening, facility personnel shut down the ventilation system for the north half of the facility because of malfunctioning damper actuators. As a result, all normal mission activities in the north half were terminated. Maintenance personnel were able to restore the system by Thursday evening. Repair efforts were hindered by insufficient spare parts. The affected portion of the facility also experienced several continuous air monitor alarms during the ventilation outage. On Thursday, facility personnel declared the instrument air system, which supports the ventilation system, degraded but operable following issues with an air dryer. **In a letter to the Board dated March 15, 2022, the NNSA Administrator stated that they are no longer pursuing a safety class active confinement system** (see 3/18/2022 report). The resident inspectors note that both the actuators and the

instrument air system that failed would have required upgrades to support the previous documented plans to achieve a safety class system. **NNSA's letter now lists these upgrades as open, meaning that no plans exist for upgrades.**

Plutonium Facility–Safety Basis: On Monday, NNSA Headquarters conditionally approved the safety basis addendum associated with the receipt of large quantities of heat source plutonium (see 11/26/2021 report). The conditions of approval, required by April 29, 2022, involve addressing outstanding comments on the addendum and wording changes to a technical safety requirement. **In approving this addendum, NNSA Headquarters accepted an “exigent condition” where there is no viable control strategy to meet DOE’s evaluation guideline for postulated consequences to the public. In this case, NNSA accepted bounding mitigated consequences to the public that range from 490 to 3,175 rem depending on the amount of radioactive material assumed to leak out of the building structure following a post-seismic fire. NNSA deemed the risk acceptable based on the conservatism in the analysis, the low likelihood that the accident occurs, and the limited number of shipments.** The primary controls credited to protect the public are the shipping containers (which must be received by May 2024 before certifications expire) and the seismic power shutoff system (which has an acknowledged deficiency and cannot prevent all fire ignition sources following an earthquake). **Work associated for this activity will be primarily performed in four gloveboxes where only one of the gloveboxes meets minimum seismic requirements.**

March 18, 2022

<https://www.dnfsb.gov/sites/default/files/document/25456/Los%20Alamos%20Week%20Ending%20March%2018%202022.pdf>

SUBJECT: Los Alamos Activity Report for Week Ending March 18, 2022

Plutonium Facility–Infrastructure: On Tuesday, the NNSA Administrator responded to the reporting requirement from the Board’s letter dated November 24, 2021. The Board requested a written report that describes DOE’s strategy for the Plutonium Facility confinement ventilation system, the planned end-state of the ventilation system, the schedule for achieving that end-state, and how the system will be credited in the facility safety basis. NNSA’s response states that it will pursue upgrades to achieve a more robust ventilation system but will not achieve a safety class active confinement ventilation system at the Plutonium Facility. **This path forward represents a change in strategy from what NNSA personnel briefed the Board in February 2020, where they described the future control strategy as including safety class active confinement ventilation.**

¹ Recommendation 2004-2 to the Secretary of Energy, DNFSB, December 2004, https://www.dnfsb.gov/sites/default/files/document/10373/rec_2004-2_146.pdf

² Wikipedia: “The roentgen equivalent man (or rem) is a CGS unit of equivalent dose, effective dose, and committed dose, which are measures of the health effect of low levels of ionizing radiation on the human body.” Chest x-rays are around 10 millirem (10/1000th rem). 500 rem is considered fatal.

³ Nuclear Watch New Mexico, SRS Watch and Tri-Valley CAREs have filed a lawsuit under the National Environmental Policy Act to compel NNSA to complete a PEIS on expanded plutonium pit production. See <https://www.scelp.org/cases/plutonium-pits>

⁴ See *Potential Energetic Chemical Reaction Events Involving Transuranic Waste at Los Alamos National Laboratory*, DNFSB, September 20, 2020, page 10, <https://www.dnfsb.gov/documents/reports/technical-reports/potential-energetic-chemical-reaction-events-involving>

These energetic reactions are not hypothetical given that an improperly prepared LANL radioactive waste drum ruptured in February 2014, shutting down the Waste Isolation Pilot Plant for nearly three years.