nuclear watch new mexico

Formal Scoping Comments on the Pit Production Programmatic Environmental Impact Statement

July 14, 2025

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By email to *PitPEIS@nnsa.doe.gov*

Dear. Ms. Jade:

On behalf of Nuclear Watch New Mexico, we respectfully submit these scoping comments on the Pit Production Programmatic Environmental Impact Statement (PEIS). We have decades of experience in the history of DOE/NNSA noncompliance and related litigation.

Through comprehensive research, public education and effective citizen action, ***Nuclear Watch New Mexico*** seeks to promote safety and environmental protection at regional nuclear facilities; mission diversification away from nuclear weapons programs; greater accountability and cleanup in the nation-wide nuclear weapons complex; and consistent U.S. leadership toward a world free of nuclear weapons.

These comments are also available online at https://nukewatch.org/nwnm-pit-peis-scoping-comments-7-14-25/

Sincerely,

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National Environmental Policy Act Compliance

There were three immediate points of interest in the National Nuclear Security Administration's (NNSA's) May 2025 Notice of Intent for its newly required pit production programmatic environmental impact statement. The first is the agency's statement that:

> "The National Nuclear Security Administration (NNSA), a semi-autonomous agency within the United States (U.S.) Department of Energy (DOE), announces its intent to initiate a National Environmental Policy Act of 1969 (NEPA) programmatic environmental impact statement (PEIS) process to ensure NEPA compliance for the production of plutonium pits in support of NNSA's Stockpile Stewardship and Management Program." [1]

Left unsaid is that it took citizen litigation and a court ruling of NEPA violation to compel NNSA to undertake this Pit Production PEIS. Nor is this a one-off experience. In fact, it has taken decades of citizen enforcement to make DOE and NNSA comply with the National Environmental Policy Act.

This started in 1990 when the Natural Resources Defense Council won a court order that required DOE to complete programmatic environmental impact statements on the post-Cold War reconfiguration of its nuclear weapons complex and vitally needed environmental restoration and waste management. DOE ignored that court order until 1995 when in pre-litigation negotiations over an environmental impact statement for the Dual-Axis Radiographic Hydrodynamic Testing Facility at the Los Alamos National Laboratory (LANL) it agreed to a Stockpile Stewardship and Management PEIS. To this day, DOE has never completed an Environmental Restoration PEIS for the most expensive cleanup program in human history. In a related lawsuit, it did settle that claim in part by agreeing to a Central Internet Database that would track radioactive wastes across the nuclear weapons complex. But DOE never completed it, again violating the federal court order.

Nuclear Watch New Mexico, SRS Watch and Tri-Valley CAREs, represented by the South Carolina Environmental Law Project, were co-plaintiffs in the successful lawsuit that compelled NNSA to undertake this Pit Production PEIS. With respect to the scope of this PEIS, a major element should be an honest review by NNSA of its historically deficient and at times downright illegal NEPA compliance history. The usual "we comply with NEPA" pablum will not do.

As an added matter, NNSA should make clear how it will continue to comply with NEPA and the manner in which it will do so. This is a particularly apt question given the Trump Administration's gutting of NEPA, first with the rescission of Council on Environmental Quality NEPA implementing regulations followed by DOE's *Revision of National Environmental Policy Act Implementing Procedures*.[2]

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[1] NNSA, May 9, 2025, https://www.federalregister.gov/documents/2025/05/09/2025-08140/notice-of-intent-to-prepare-a-programmatic-environmental-impact-statement-for-plutonium-pit

[2] https://www.govinfo.gov/content/pkg/FR-2025-07-03/pdf/2025-12383.pdf

Of great interest to us is DOE Secretary Chris Wright's June 30 press release in which he stated:

> "President Trump promised to break the permitting logjam, and he is delivering," said **Energy Secretary Chris Wright.** "America can and will build big things again, but we must cut the red tape that has brought American energy innovation to a standstill and end this era of permitting paralysis. These reforms replace outdated rules with clear deadlines, restore agency authority, and put us back on the path to energy dominance, job creation, and commonsense action. Build, baby, build!" [3]

With respect to this Pit Production PEIS, it was NNSA's conscious and intentional avoidance of NEPA - and the subsequent involvement of the federal court due to such avoidance - that has slowed or impacted NNSA's pit production plans. Prompt compliance with NEPA in May 2018, when the dual-track pit-production plan was first announced by DOE & DoD, could have expeditiously addressed the claim that NEPA delays DOE projects. In fact, beginning in October 2018, we activist groups sent five formal letters to NNSA making very clear our view that a PEIS was required by NEPA, to which we never got a response.

NNSA could have easily completed a PEIS within that timeframe. A DOE order mandating prompt NEPA compliance is needed rather than this effort to gut NEPA through this poorly written and confusing interim rule. It is trying to kill the messenger instead of the message. Moreover, the DOE Secretary's sound bite of "Build, Baby, Build" clearly smacks of predetermination which is illegal under NEPA statutes. NNSA needs to explain the DOE Secretary's statement and clarify how the agency will comply both with the letter and spirit of NEPA in this Pit Production PEIS.

Moreover, instead of hindering and hamstringing the government and American innovation, NEPA processes result in tangible benefits for both the federal government and the public. Our favorite example is public comment on the lack of analysis of wildfire threat in a draft 1999 LANL Site-Wide Environmental Impact Statement (SWEIS). In response, the final LANL SWEIS included a detailed hypothetical wildfire that became all too real a half year later during the April/May 2000 Cerro Grande Fire. That hypothetical scenario aided Lab leadership in their decision to order mandatory evacuation of all but essential personnel. Mitigation provisions in the final LANL SWEIS included fire prevention measures that helped to keep the wildfire a half-mile away from above ground plutonium-contaminated transuranic wastes stored at the Lab's Area G, which could have been catastrophic had their drums ruptured due to high heat.

Even LANL recognized that public comment helped to avert potential catastrophe, writing:

> "It is a story of an EIS process, of helpful public comments, of a timely response ... then a great fire, called Cerro Grande, that proves the value of outsiders' ideas… When the Cerro Grande Fire swept down from the mountains this spring, these extra defensive steps, taken in response to the public comments, paid for themselves many times over. The savings were in

[3] *Energy Secretary Announces Updated NEPA Procedures to End Permitting Paralysis and Unleash American Energy,* June 30, 2025, https://www.energy.gov/articles/energy-secretary-announces-updated-nepa-procedures-end-permitting-paralysis-and-unleash

the form of the harm to facilities that was reduced or avoided and reduced risk to the public that might have resulted."
https://hwbdocuments.env.nm.gov/Los%20Alamos%20National%20Labs/General/13435.pdf

This lesson on the value of public comment under NEPA can obviously be extended to this Pit Production PEIS. NNSA would be wise to really take to heart that NEPA compliance is more than just checking off a procedural box. It does result in tangible benefits for itself and the American taxpayer.

As the U.S. attempts to "modernize" its nuclear arsenal—a plan involving ramping up plutonium pit production that will generate vast amounts of nuclear waste and affect communities across the country—NEPA's review process is critically needed. Without this review, the U.S. modernization plan would proceed without sufficient oversight and zero public input, leading to a far increased likelihood of preventable accidents, toxic exposure, and costly environmental problems. Fast-tracking complex, high-risk projects under weakened regulations increases the potential for operational failures, contamination events, and long-term policy instability. Gutting NEPA benefits industry and government interests at the expense of public health, environmental sustainability, and accountability.

NNSA should also make clear in the draft Pit Production PEIS that the PEIS operates under NEPA requirements prior to their gutting by the Trump Administration. This is a potentially important legal matter as our settlement with NNSA mandating the Pit Production PEIS is prior to Trump's inauguration and hence "grandfathered" in.

The Pit Production PEIS' 50-year time horizon is untenable

NNSA's formal Notice of Intent states that "For analytical purposes, this PEIS will evaluate potential impacts over a 50-year period, through approximately 2075." This is an unheard range of time, essentially a blank check over time. It's as if NNSA said to itself, "well if I am legally forced to do this PEIS, I might as well make it stay in effect for as long as I can get away with."

Fifty years is simply not a practical time period and its range needs to be reduced in the draft Pit Production PEIS. The January 2025 LANL SWEIS offers good precedence with a range of 15 years. We can't even predict with full confidence what happens next year, but 50 years is simply untenable. In addition, we remind NNSA of its requirement to conduct "Supplement Analyses" every 5 years as to whether programmatic NEPA documents need to be reviewed or not. Needless to say, we would take a dim view if 25 years from now Supplement Analyses of this Pit Production PEIS continued to say that a new PEIS was not needed.

One particular issue that clearly limits what an appropriate time horizon for the Pit Production PEIS should be is the disposal of radioactive transuranic wastes from future pit production. NNSA has stated on record:

> "The combined TRU waste (1,151 m3) generated [from pit production] over 50 years would be 57,550 m3, which would account for 53 percent of the projected available capacity at WIPP [the Waste Isolation Pilot Plant]. In addition, use of WIPP capacity for

national security missions such as pit production would be given priority in the allocation." [4]

But this is in conflict with the relatively recent New Mexico Environment Department permit for WIPP which requires prioritization of LANL's legacy wastes, not freshly generated wastes from plutonium pit production. This will likely be a source of future conflict between the state of New Mexico and NNSA, perhaps even resulting in litigation.

The WIPP permit also requires DOE to annually report on its search for a new out-of-state WIPP replacement (which will be politically controversial). In sum, NNSA cannot count on WIPP to be available until ~2075 as the stated Pit Production PEIS's 50-year time horizon implies. It also assumes that WIPP is not shut down in the event of an accident, contrary to what occurred on Valentine's Day 2014. That incident of a ruptured radioactive waste barrel caused by LANL incompetence contaminated 21 workers and shut the facility down for just short of 3 years, costing the American taxpayer at least $2 billion to reopen.

As an obvious scoping comment, the draft Pit Production PEIS must fully discuss and analyze the future disposal of all forms of wastes resulting from plutonium pit production, and especially as it pertains to the Waste Isolation Pilot Plant.

An overarching point is that a 50 year time horizon for continuing plutonium pit production is, in effect, a nuclear weapons forever program, contrary to the 1970 NonProliferation Treaty's mandate to end the nuclear arms race "at an early date..." The U.S. Constitution itself enshrines treaties as the "supreme law of the land." We would like to see NNSA explain and justify its 50 year horizon for plutonium pit production to the international community at the 2026 Review Conference of the NonProliferation Treaty.

A Genuine No Action Alternative

NNSA's Notice of Intent for the Pit Production PEIS states:

> "The No-Action Alternative will be based on NNSA's prior decision to produce 30 pits per year at LANL with surge efforts to produce up to 80 pits per year (85 FR 54544, September 2, 2020)."

This is a rigged No Action Alternative just like NNSA did in the draft LANL Site-Wide Environmental Impact Statement. The NNSA has rigged it with three self-serving scenarios:

- Expanded nuclear weapons programs (contradictorily called the "No Action Alternative").
- Yet more expanded nuclear weapons programs ("Modernized Operations Alternative").
- Yet far more expanded nuclear weapons programs ("Expanded Operations Alternative").

In its Notice of Intent for the LANL SWEIS the NNSA stated:

[4] Final Supplement Analysis of the Complex Transformation Supplemental PEIS, NNSA, December 2019, p. 65, https://www.energy.gov/sites/default/files/2020/01/f70/final-supplement-analysis-eis-0236-s4-sa-02-complex-transformation-12-2019.pdf

> "For the foreseeable future, NNSA does not consider reducing operational or environmental remediation missions at LANL as reasonable. However, the timeframe for the SWEIS analysis is approximately 15 years into the future, and NNSA recognizes that requirements, needs, opportunities, and vision may change over such a long planning horizon. Consequently, NNSA has not made a final decision on whether to include a Reduced Operations Alternative in this SWEIS. NNSA welcomes input on this and any other alternative the public thinks are reasonable and should be analyzed in the SWEIS." [5]

We responded to that by saying in our October 2022 scoping comments:

> "A Reduced Operations Alternative is not only a reasonable alternative but is in the actual best interests of the nation. Such an alternative would best preserve stockpile reliability by foregoing production of new pits that may deviate from tested designs; conservatively maintain the existing, extensively tested nuclear weapons stockpile; augment and accentuate nonproliferation programs, especially the development of monitoring and verification technologies that could help underpin a future world free of nuclear weapons; and augment and accentuate cleanup programs that are truly comprehensive, permanently eliminating the threat to groundwater."

We argue here that the draft Pit Production PEIS should offer a genuine No Action Alternative that aligns with the 1970 NonProliferation Treaty's mandate for nuclear disarmament.

In February 2025 President Trump made statements that clearly indicated that a new path is possible. For example, he is reported to have said:

> "We'd like to see denuclearization… Tremendous amounts of money are being spent on nuclear, and the destructive capability is something that we don't even want to talk about today, because you don't want to hear it. It's too depressing… So, we want to see if we can denuclearize, and I think that's very possible. And I can tell you that President Putin wanted to do it. He and I wanted to do it. We had a good conversation with China. They would have been involved, and that would have been an unbelievable thing for the planet." [6]

and

> "I'd like to have that as soon as things settle down. I'm gonna have that conference, primarily with China and Russia because those are the two that that really are out there, and we're gonna have them spend a lot less money and we're gonna spend a lot less money -- and I know they're gonna do it. They agreed to it, we were talking about de-nuking, de-nuclearizing, de-nuking, and President Putin and I agreed that we were gonna do it, in a very big way.
>
> There's no reason for us to be building brand new nuclear weapons. We already have so many you could destroy the world 50 times over, 100 times over. And here we are building new nuclear

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[5] Notice of Intent To Prepare a Site-Wide Environmental Impact Statement for Continued Operation of the Los Alamos National Laboratory, NNSA, August 19, 2022, https://www.federalregister.gov/documents/2022/08/19/2022-17901/notice-of-intent-to-prepare-a-site-wide-environmental-impact-statement-for-continued-operation-of

[6] *Donald Trump Provides Nuclear Weapons Update*, Newsweek, January 28, 2025, https://www.newsweek.com/donald-trump-nuclear-weapons-china-russia-2020120

> weapons, and they're building nuclear weapons, and China's building new nuclear weapons, and China's trying to catch up because, you know, they're very substantially behind, but within 5 or 6 years they'll be even.
>
> We're all spending a lot of money that we could be spending on other things that are actually, hopefully, much more productive. Hopefully, there'll never be a time when we need those weapons.
>
> If there's ever a time when we need nuclear weapons, like the kind of weapons that we're building, and that Russia has and that China has, to a lesser extent, but will have, that's gonna be a very sad day. That's gonna be probably oblivion." [7]

Thus, President Trumps own words indicate that a draft PEIS should offer a fourth alternative of not expanding plutonium pit production. Moreover, the expansion of pit production is premised on deeply flawed assumptions and distortions (for example, see comment section on "So-Called Deterrence" below).

Further, as precedence, the Air Force completed an environmental impact statement in 2023 for its proposed Sentinel intercontinental ballistic missile that included a true no action alternative of no Sentinel deployment. Similarly, there should be a genuine No Action Alternative in the draft Pit Production PEIS, contrary to NNSA's assertion that pit production at the Los Alamos National Laboratory (LANL) is "No Action." This precedence is particularly apt given that the Sentinel is greatly delayed and vastly over budget, putting its successful completion into serious doubt. The direct link between the two issues is that the first new plutonium pits are for the W87-1 warhead for the Sentinel.

The stated No Action Alternative in NNSA's Notice of Intent does perhaps point to the uncertainty of future pit production at the Savannah River Site (SRS), which is facing ever increasing delays and escalating costs. The pit plant at SRS is on its way to becoming the second most expensive building in human history. It is becoming increasing questionable that pit production will be successfully established at SRS which could boomerang on LANL. The 2019 Defense Authorization Act required "a detailed plan for designing and carrying out production of plutonium pits 31–80 at Los Alamos National Laboratory, in case the MOX facility is not operational and producing pits by 2030." So, the strong possibility of surge production at LANL should be thoroughly explored and analyzed in the Pit Production PEIS. Further, that congressionally required plan must be made available as a critical supporting reference document.[8]

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[7] *Trump Suggests U.S. Stop Building Nuclear Weapons, Cut Pentagon Budget In Half*, Real Clear Politics, February 13, 2025, https://www.realclearpolitics.com/video/2025/02/13/trump_suggests_us_stop_building_nuclear_weapons_cut_pentagon_budget_in_half.html

[8] There may well be classified elements in that plan, which NNSA should begin to process and redact as needed now in order to have the LANL surge plan publicly available. Again, it is clearly a critical supporting reference document.

So-Called Deterrence

The nuclear weapons powers have always used the one-word rationale of "deterrence" to justify their nuclear stockpiles. It has always been "we have nuclear weapons to deter others from using them against us." However, in the case of the United States and the Soviet Union/Russia, "deterrence" is at best only a half truth. First, as an obvious historic matter, the United States was the first and, so far, only country to use nuclear weapons in war.

As a pertinent, contemporary example, the underlying foundation for the draft LANL SWEIS justified expanding nuclear weapons programs as "...Nuclear deterrence – Lead the nation in evaluating, developing, and ensuring effectiveness of the country's nuclear deterrent, including the design, production, and certification of current and future nuclear weapons." (draft LANL SWEIS, Volume 1, PDF p. 44)

In its 2024 Nuclear Employment Strategy the Pentagon explicitly rejected minimal deterrence while "reiterating the need to maintain counterforce capabilities... not rely[ing] on a counter-value or minimum-deterrence approach..." Counterforce is nuclear weapons jargon for targeting military targets and top political leadership, that is waging nuclear war. This is why both Russia and the U.S. have 1,000s of nuclear weapons instead of just the few hundred needed for minimal deterrence. The latter, also known as counter-value, targets cities and civilian populations, which is deeply immoral, characteristic of the basic nature of nuclear weapons as indiscriminate killers. But, because of inevitable immense collateral damage, both counterforce and counter-value arrive at the same potential end point of millions, if not billions, dead. But that said, nuclear war is more likely to occur under counterforce.

Nuclear warfighting creates pressure for endless modifications and/or new designs for the stockpile, which the 2024 Nuclear Employment Strategy characterizes as "flexible capabilities" and "a wide range of employment options." This is what is driving the U.S.' $2 trillion nuclear weapons "modernization" program, which in turn is driving expanded plutonium pit production. At a certain point the so-called "deterrence" meant to deter others becomes the threat that tempts adversaries into pre-emptive first strike. This fuels an escalating nuclear arms race that imperils us all.

In addition, the very concept of "deterrence" is now being turned on its head. The draft LANL SWEIS claimed:

> "Nuclear weapons have played, and will continue to play for the foreseeable future, a critical role in deterring nuclear attack and in preventing large-scale conventional warfare between nuclear-armed states. U.S. nuclear weapons not only defend the U.S. and our allies against conventional and nuclear threats, but also help allies avoid the need to develop their own nuclear arsenals. This, in turn, furthers global security." (draft LANL SWEIS, Volume 1, PDF page 32).

Putin's nuclear saber rattling has deterred the U.S. and NATO from militarily intervening in Ukraine. It remains to be seen if large-scale conventional warfare between nuclear-armed states (including NATO) will be prevented. In addition, given new geopolitical uncertainties introduced by the Trump Administration, there is increasing discussion in Europe, South Korea and Japan of their own possible independent "deterrents."

It is simply a different geopolitical world now. Therefore, under a fourth alternative of not expanding plutonium pit production for so-called deterrence, the draft Pit Production PEIS should analyze as a fourth alternative U.S. global leadership toward nuclear disarmament that the nuclear weapons powers pledged to more than a half century ago in the 1970 NonProliferation Treaty. What is genuinely in our best national security interests and where taxpayers' dollars should best be used should be fully analyzed in the draft Pit Production PEIS.

There is another reason why "deterrence" itself is the threat, one that is perhaps the easiest reason to understand. There is a long history of nuclear weapons accidents and near miscalculations when there can only be zero. The control of nuclear weapons must be perfect when, unfortunately, human beings are not. For example, four one megaton bombs crashed on the coast of Palomares, Spain, in 1966, widely spreading plutonium. Two one megatons bombs were accidentally dropped near Goldsboro, NC, in 1961. One of them automatically went through four of five arming steps with only the last one preventing it from showering Washington, DC with fallout.[9]

We have the instance of one Soviet submarine officer vetoing the decision by two other officers to launch a nuclear-armed torpedo at a U.S. Navy destroyer during the Cuban Missile Crisis. At that time, it would have likely instigated nuclear Armageddon. We have the instance in 1983 when Lieutenant Colonel Stanislav Petrov of the Soviet Air Defense Forces decided not to alert his higher ups, intuitively sensing that something was wrong. Early warning radars had mistaken sunlight reflecting off of clouds for incoming American ICBMs.[10]

All of these instances may seem to have taken place long ago while operational safety measures have surely improved since then. But there is a new wrinkle - - artificial intelligence. Will AI trump human judgment when human instinct was integral to avoiding nuclear Armageddon in the past? We can't really know until it is far too late. But the only way to 100% eliminate that threat is to eliminate nuclear weapons. It is the "deterrence" itself that is the threat.

To repeat, what is genuinely in our best national security interests and where taxpayers' dollars should best be used should be fully analyzed in the draft Pit Production PEIS. This requires objective examination of "deterrence" and admission that as presently implemented it requires nuclear warfighting capabilities that can end human civilization overnight. That in turn requires the overkill nuclear weapons stockpile and related Department of Defense delivery systems, in short, the $2 trillion modernization program. While minimal deterrence with just a few hundred warheads would still potentially kill hundreds of millions of people, it would prudently preserve the stockpile to its tested legacy and require vastly lower costs. In the policy sphere, minimal

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9 https://nsarchive2.gwu.edu/nukevault/ebb475/ Excerpt: "New Details on the 1961 Goldsboro Nuclear Accident Multi-Megaton Bomb Was Virtually "Armed" When It Crashed to Earth in North Carolina, Sandia Lab Report Concluded Nuclear Stockpile Safety Review from the Mid-1970s Identified Four Weapons Systems that Needed "Time Urgent" Evaluation Because of "Nuclear Detonation Safety Concerns" 1986 Sandia Lab Study Found that, with Respect to "Fully Assembled" and "Combat-Ready" Nuclear Weapons, U.S. Could Not Claim "in an Absolute Sense, that We Take Every Action to Ensure their Safety"

10 https://www.armscontrol.org/act/2017-10/news-briefs/man-who-saved-world-dies-77

deterrence would be an excellent interim step toward the global nuclear disarmament mandated by the 1970 NonProliferation Treaty, which should be analyzed in the draft Pit Production PEIS.

Two Near-Peer Nuclear Adversaries?

Much is made of the fact that China appears to be rapidly expanding its nuclear weapons stockpile after a consistent history of relative moderation, prompting alarms over two near-peer adversaries (i.e., Russia and China). The draft SWEIS states:

> While the U.S. has continued to reduce the number and prominence of nuclear weapons, others, including Russia and China, have moved in the opposite direction. They have added new types of nuclear capabilities to their arsenals, increased the prominence of nuclear forces in their strategies and plans, and engaged in increasingly aggressive behavior, including in outer- and cyberspace. By the 2030s, the U.S. will, for the first time, face two major nuclear powers as strategic competitors and potential adversaries. This will create new stresses on stability and new challenges for deterrence, assurance, arms control, and risk reduction. (Volume 1, PDF p. 32)

First, as the biblical passage goes, "Thou hypocrite, first cast out the beam out of thine own eye; and then shalt thou see clearly to cast out the mote out of thy brother's eye." The U.S. is not lowering the number of its nuclear weapons. In fact, dismantlements are the lowest they have ever been since the end of the Cold War. Despite denials, the U.S. has added new military capabilities to its nuclear weapons stockpile, witness the more accurate W76-1, the low-yield W76-2, the limited earth penetrators B61-11 and -12, and now the new B61-13. Concerning increasingly aggressive behavior, recall Trump threatening "fire and fury like the world has never seen" on North Korea.

But the concept of two near-peer nuclear adversaries has potentially huge implications that could directly impact everything, including plutonium pit production. In October 2023 the Congressional Commission on the Strategic Posture of the United States:

> "... conclude[d] that America's defense strategy and strategic posture must change in order to properly defend its vital interests and improve strategic stability with China and Russia. Decisions need to be made now in order for the nation to be prepared to address the threats from these two nuclear-armed adversaries arising during the 2027-2035 timeframe. Moreover, these threats are such that the United States and its Allies and partners must be ready to deter **and defeat** both adversaries simultaneously." (Bolded emphasis added)

First, the "and defeat" is significant, going beyond just "deterrence" into nuclear warfighting and planning to win it. The Commission's specific recommendations are a throwback to the first nuclear arms race. They include deploying multiple warheads on intercontinental ballistic missiles (which increases strategic instability), possibly deploying road mobile ICBMs, putting strategic bombers back on continuous alert status, adding more heavy bombers and strategic submarines, and increased emphasis on tactical or battlefield nuclear weapons. The Commission essentially calls for two deterrents, one for Russia and one for China, with unspecified consequences for the future size of the U.S. stockpile.

To achieve all this, the Commission recommends that "DOE/NNSA plan to increase production capacity beyond current POR [program of record]." The National Nuclear Security Administration's current plan is to produce at least 30 plutonium pits per year at the Los Alamos National Laboratory (LANL) and at least 50 pits per year at the Savannah River Site (SRS). In alignment with that, the Commission recommends the replacement of LANL's pit production facility known as PF-4. That would be a huge shift from the current program of record of ~$10 billion in upgrades over a decade. It would be a huge and controversial expense, when at the same time both LANL and SRS are experiencing serious cost increases and schedule delays.

Note that the Commission said, "Decisions need to be made now in order for the nation to be prepared to address the threats from these two nuclear-armed adversaries." The Commission's report received widespread bipartisan praise and support. It's difficult to believe that planning is not already taking place within NNSA and LANL to meet at least some of the Commission's recommendations. The draft Pit Production PEIS should disclose that planning, particularly as it pertains to increased rates of plutonium pit production and/or a new pit production facility at LANL.

Finally, yet again, there should be a fourth alternative in the LANL SWEIS of restrained nuclear weapons programs that seek to conservatively and reliably maintain the stockpile while the U.S. demonstrates international leadership toward global nuclear disarmament.

The NonProliferation Treaty

The Department of Energy's semi-autonomous nuclear weapons agency, the National Nuclear Security Administration (NNSA), claims that it has no choice but to follow congressional requirements to manufacture new plutonium pits. However, Article VI of the U.S. Constitution declares "all Treaties made, or which shall be made, under the Authority of the United States, shall be the supreme Law of the Land; and the Judges in every State shall be bound thereby, any Thing in the Constitution or Laws of any State to the Contrary notwithstanding."

The January 2025 draft LANL SWEIS hypocritically claimed that:

> "NNSA missions are conducted fully consistent with current treaty obligations. The SSMP [NNSA's Stockpile Stewardship and Management Plan] is fully consistent with and supports the U.S. commitment to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT)... In Article VI of the NPT, treaty parties "undertake to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a treaty on general and complete disarmament under strict and effective international control." The U.S. takes this commitment seriously and has emphasized dedication to both the long-term goal of eliminating nuclear weapons and the requirement that the U.S. has modern, flexible, and resilient nuclear capabilities that are safe and secure, until such a time as nuclear weapons can prudently be eliminated from the world... The NPT does not provide any specific date for achieving the ultimate goal of nuclear disarmament, nor does it preclude the maintenance of nuclear weapons until their disposition. Continued operations at LANL enable NNSA to maintain the safety, reliability, and performance of the U.S. nuclear weapons stockpile until the ultimate goals of the NPT are attained and are consistent with the NPT." (Volume 1, PDF page 33)

First, in 1996 the World Court concluded that there is indeed a timebound obligation in which the NPT Article VI mandate for "negotiations in good faith on effective measures relating to cessation of the nuclear arms race" must take place. It's like come on, the NNSA invokes how the NPT has no specific date after 54 years? That is not credible. It is also not credible how the U.S. refuses to recognize the World Court, which after all does reflect majority world opinion.

On the question of when nuclear weapons can be "prudently" eliminated from the world, if not after the end of the Cold War, when will it ever be done? The U.S.' $2 trillion "modernization" program directly violates NonProliferation Treaty Article VI and expanded plutonium pit production will play a direct role in that. For the LANL SWEIS to claim that it "is fully consistent with and supports the U.S. commitment to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT)", the final SWEIS must have a fourth alternative of not expanding nuclear weapons programs. From the beginning, the draft Pit Production PEIS should comport not only with the NPT's mandate to disarm nuclear stockpiles, but also with the essential need for the U.S. to lead by example toward ridding the world of weapons of mass destruction.

The Treaty on the Prohibition of Nuclear Weapons

Back to the draft LANL SWEIS' claim that "NNSA missions are conducted fully consistent with current treaty obligations." The silence in the LANL SWEIS' 1,000+ pages is deafening in the omission of any mention whatsoever of the Treaty on the Prohibition of Nuclear Weapons. That ban treaty, similar to chemical and biological weapons ban treaties that the U.S. helped to promulgate, has now been in effect for 4 years and ratified by 73 countries (approaching a majority of nations and climbing). The nuclear weapons ban treaty was born out of concern for the humanitarian consequences of nuclear war which the nuclear powers have suppressed, and out of the non-weapons states frustration that the weapons states have never begun to honor the NonProliferation Treaty's Article VI mandate to disarm.

Granted that the U.S. has no "treaty obligation" under the TPNW because it is vehemently against it and has pressured other nations to not sign it. The Pit Production PEIS should fully explain and justify why that is so, and why the United States does not at least maintain observer status at the formal Meetings of the State Parties to the Treaty on the Prohibition of Nuclear Weapons held at the United Nations.

Plutonium Pit Aging

NNSA and the Labs frequently use the issue of the potential aging of plutonium pits as a rationale for expanded production. As LANL Director Thom Mason put it:

> "We don't have an immediate concern with aging. Up to this point, the plutonium pits in America's nuclear weapons have been very robust. But the pits we have today were largely manufactured in the 1980s, and we don't have the predictive ability to say with certainty that our current, 40-year-old pits will be good until any particular date. It's sort of glass half full, glass half empty; we can't prove that they will fail, but we also can't prove that they will work. **The**

> **best way to deal with this dilemma is to "take it off the table. We do that by making new pits, immediately." [11]**

With that he justifies spending tens of billions of dollars on the production of plutonium pits, not to ensure the safety and reliability of the existing nuclear weapons stockpile, but for new designs that can't be tested or, alternatively, could push the U.S. back into testing. Tens of billions of dollars that will permanently reshape LANL into a nuclear weapons production facility, permanently impacting northern New Mexico as well. Tens of billions of dollars that will help accelerate the new nuclear arms race that is imperiling us all. And, of course, it's easy to fail to prove whether pits work or not if you don't try.

During the Cold War the Rocky Flats Plant near Denver was producing up to 2,000 plutonium pits, the fissile cores or "triggers" of nuclear weapons, each year. It ceased production in 1989 after the FBI and EPA conducted a dramatic raid investigating environmental crimes. In 1997 limited production of up to 20 pits per year was re-established at the Los Alamos National Laboratory, although the Lab never produced more than eleven pits in any one year.

In the early 2000's the NNSA was increasingly sounding alarms over plutonium pit aging, saying that pits produced at Rocky Flats in the 1980's would last only on the order of 45 years.[12] But even before then, in 1999 the JASONs (longtime expert consultants to the federal government) were reporting that:

> "Pit lifetimes are now discussed as 60 or 90 years… because there is neither evidence nor physical reason to expect that pit aging on the present time scale has in any way degraded weapons performance, there is no reason to rush decision making as to future pit production rates."[13]

In 2000, Raymond Jeanloz, a member of the JASONs (but writing in his own capacity), published these findings:

> "The most striking result of these studies is that the local deviation from the ideal fcc [face-centered cubic] structure vanishes with aging, disappearing sooner in samples having a higher Ga [gallium, used to alloy the plutonium] content. It is not surprising that the most gallium-poor samples would retain the most structural nonideality over time, because Ga is known to stabilize the d phase (figure 2b); on the nanometer scale, **aging appears to have the same effect as a greater Ga concentration, in that it shifts the Pu to a more stable configuration**...

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[11] *Pit production explained*, LANL, December 21, 2021, https://www.lanl.gov/media/publications/national-security-science/1221-pit-production-explained bolded emphasis added.

[12] **"In approximately 2020, some pits in the enduring stockpile will be approaching the 45-year pit lifetime."** *Draft Supplemental Programmatic Environmental Impact Statement on Stockpile Stewardship and Management for a Modern Pit Facility*, USDOE, May 2003, Volume 1, page 2-**4**, https://www.energy.gov/sites/default/files/EIS-0236-S2-DEIS-01-2003.pdf **In the face of Congressional and public opposition DOE never completed a final programmatic environmental impact statement for the Modern Pit Facility.**

[13] *Remanufacture*, JASONs, JSR-99-300, October 1999, https://rlg.fas.org/JSR-99-300.pdf

> "The overall finding from a variety of observations, including detailed electrical-resistivity measurements as a function of temperature (which are sensitive to the density and distribution of defects present), positron annihilation spectroscopy, and other studies, is that the **Pu samples not only retain long-range order but actually get closer to the ideal crystal structure with increasing age**...
>
> "Surprisingly, however, the **high explosive used in US weapons has been found to improve systematically with age** in key measures of performance, such as yielding characteristics and detonation-front velocities.
>
> "Thus, **crucial primary-stage components that were initially subject to concern have been shown through the SSP [Stockpile Stewardship Program] to be robust as they age**. Indeed, there is now consensus among specialists that the Pu pits in the US stockpile are stable over periods of at least 50–60 years, with the most recent studies suggesting a far longer period. More important than the indications of benign aging is the demonstration that the materials are now becoming understood in sufficient detail, and surveillance methods are becoming sensitive enough, to ensure that any signs of degradation will be observed in time to apply the necessary repairs or refurbishment." [14]

Despite this expert advice, the NNSA began to push for a new-design Reliable Replacement Warhead and related expanded plutonium pit production. This initially included a proposal for a "Modern Pit Facility" capable of producing up to 450 pits per year, with concerns over possible pit aging cited as the primary driver for this huge new pit production plant.[15] However, in 2006 the JASONs concluded in a well-publicized report that plutonium pits have reliable lifetimes of at least 100 years.[16] Following that, Congress deleted funding for both the Reliable Replacement Warhead and the Modern Pit Facility.

In the mid-1990's J. Carson Mark[17] told NukeWatch personnel that from the beginning LANL had set aside plutonium pits for the express purpose of studying how they age. A Freedom of Information Act (FOIA) request quickly got a response from DOE acknowledging the existence of these "set aside" experiments, but that everything about them was classified. On a side note, Mark telling Nuclear Watch later prompted the organization to ask then-Senator Jeff Bingaman (D-NM) to require the 2006 JASON pit life study resulting in their 2006 conclusion that pits last at least a century.[18]

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[14] *Science-Based Stockpile Stewardship*, Raymond Jeanloz, Physics Today, 2000, bolded emphases added, https://nukewatch.org/wp-content/uploads/2024/02/Science-Based-Stockpile-Stewardship.pdf

[15] See *Draft Supplemental Programmatic Environmental Impact Statement on Stockpile Stewardship and Management for a Modern Pit Facility*, USDOE, May 2003, Volume 1, Sec. 2.1.1. "Pit Aging as a Driver," page 2-1, https://www.energy.gov/sites/default/files/EIS-0236-S2-DEIS-01-2003.pdf.

[16] *Pit Lifetimes*, JASON, November 2006, www.nukewatch.org/facts/nwd/JASON_ReportPuAging.pdf This JASON study came about because Nuclear Watch New Mexico, knowing of the earlier *Remanufacture* JASON report, suggested to then-Senator Jeff Bingaman that a new JASON pit lifetime study would be appropriate. He then successfully passed that requirement through an amendment to the 2004 Defense Authorization Act.

[17] Manhattan Project physicist and leader of LANL's Theoretical Division from 1947 to 1973

[18] See JASON Plutonium Pit Lifetime Report, November 28, 2006, https://nukewatch.org/wp-content/uploads/2023/05/pit.pdf

The debate over plutonium pit aging has been going on for decades, with some NNSA and lab people disputing the accuracy of the 2006 JASON conclusion. Concerning the results of the set aside experiments, Mark exclaimed to Nuclear Watch that, "the big news was no news!", that is plutonium pits do not functionally age in any time period of practical relevance. If indeed these set aside experiments exist, NNSA should disclose them and incorporate them into any ongoing studies about plutonium pit aging. The status, good or ill, of these legacy pits should directly inform the need for producing or not new pits. And if the existence of these set aside experiments is true, it speaks ill of NNSA and its predecessor DOE Defense Programs to not have revealed them long ago.

In 2012 the Lawrence Livermore National Laboratory added to the reassuring data about pit aging by announcing:

> "This continuing work shows that no unexpected aging issues are appearing in plutonium that has been accelerated to an equivalent of ~ 150 years of age. **The results of this work are consistent with, and further reinforce, the Department of Energy Record of Decision to pursue a limited pit manufacturing capability in existing and planned facilities at Los Alamos instead of constructing a new, very large pit manufacturing facility (called the Modern Pit Facility) that would have been capable of producing hundreds of pits a year.**
>
> Bruce Goodwin, principal associate director for Weapons and Complex Integration, says he is "extremely pleased" at the continuing positive results… The results, he says, are highly positive for the safety and reliability of the stockpile and for **avoiding the costs associated with remanufacturing pits."**[19] (Bolded emphases added)

Nevertheless, in May 2018 the Department of Defense and NNSA announced an aggressive plan to produce at least 80 pits per year,[20] with simultaneous production at LANL of at least 30 pits per year and at least 50 pits per year at the Savannah River Site, costing at least $50 billion over 30 years.[21]

The FY 2019 Senate Energy and Water Development Committee report (S.R. 115-258) mandated a new JASON study that should:

> "…include recommendations of the study for improving the knowledge, understanding, and application of the fundamental and applied sciences related to the study of plutonium aging and pit lifetimes, an estimate of minimum and likely life-times for pits in current warheads, and the

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19 *Plutonium at 150 years*, LLNL, 2012, https://www.llnl.gov/news/plutonium-150-years

20 *Joint Statement from Ellen M. Lord and Lisa E. Gordon-Hagerty on Recapitalization of Plutonium Pit Production***,** National Nuclear Security Administration, May 10, 2018, www.energy.gov/nnsa/articles/joint-statement-ellen-m-lord-and-lisa-e-gordon-hagerty-recapitalization-plutonium-pit

21 See ***Plutonium Pit Production Engineering Assessment Results***, slide 10, https://nukewatch.org/newsite/wp-content/uploads/2019/03/FINAL-Pu-Pit-Production-EA-Results-05.14.18_Unclassified.pdf This combines Alternative 1 (SRS) and Alternative 2a (LANL) for a total of $43 billion. Since then the construction costs of the Savannah River Plutonium Processing Facility have more than doubled to $11 billion, rounding out pit production costs over 30 years at $50 billion. This is bound to go up. It should also be noted that NNSA cost estimates of new warheads do not include the cost of pit production.

> feasibility of reusing pits in modified nuclear weapons. The report shall be submitted in unclassified form but may include a classified annex." [22]

However, JASON did not have time to do a full study, as it said….

> The report requested by the SEWD **[**Senate Energy and Water Development Committee**]** was too wide in scope for JASON to complete during its 2019 Summer Study. NNSA, JASON, and SEWD staff agreed to divide the study into two phases:
> • Phase One: Perform a 2019 JASON Summer Study that would generate a letter report covering updates since the prior JASON study on plutonium aging, Pit Lifetime, delivered in 2006.
> • Phase Two: Assess the need for the full study, and if deemed necessary and timely, perform a more detailed, multi-year JASON study.[23]

Phase One, the letter report, diminutive in size (all of two and a half pages), was completed. For Phase Two, in the letter report JASON did assess the need for a new study (see below) but did not receive any further directive from Congress or the NNSA to "perform a more detailed, multi-year JASON study."

However, conveniently for NNSA LANL Director Thom Mason, the JASONs did recommend that "pit manufacturing be re-established as expeditiously as possible in parallel with the focused program to understand Pu aging…" So NNSA has moved aggressively to expand plutonium pit production but has not updated JASON-reviewed pit aging data as far as is publicly known. It is perhaps noteworthy that the leader of the 2019 JASON Letter Report later became the NNSA Deputy Administrator of Defense Programs.

In that capacity, Marv Adams again trotted out plutonium aging as a declarant in the lawsuit in which a federal judge ruled NNSA to be in noncompliance with NEPA. Adams claimed that "Pit performance degrades over time... There is no concern over reliability today, but concerns will develop as existing pits continue to age." [24] If so, show us the evidence!

What he also declared is that:

> "... the requirements these [future] warheads must meet differ from those met by existing warheads. In some cases, existing pits that might seem available for reuse are not well suited to the new requirements or are not available in the needed quantities. This is one reason pit manufacturing is needed without further delay."

These "requirements" are of course not specified. But here one of our central points is again reaffirmed. **Pit production is not being driven by pit aging, although that is a primary false justification for it. Pit production is being driven by new-design nuclear weapons for the new arms race.**

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[22] Senate Report 115-258, ENERGY AND WATER DEVELOPMENT APPROPRIATIONS BILL, 2019, page 104, https://www.congress.gov/115/crpt/srpt258/CRPT-115srpt258.pdf

[23] Letter Report to the NNSA, JASON, November 13, 2019, but not transmitted by NNSA to Congress until April 6, 2020, https://irp.fas.org/agency/dod/jason/pit-aging.pdf

[24] DOE/NNSA Plutonium Pit NEPA Settlement Agreement 01/16/25 https://nukewatch.org/wp-content/uploads/2025/01/Settlement-Agreement-and-Exhibits.pdf PDF p. 27

The 2019 JASON letter does point the way to what future pit aging study should address:

> "…in general, studies on Pu aging and its impacts on the performance of nuclear-weapons primaries have not been sufficiently prioritized over the last decade."
>
> "The [labs' pit aging studies] program should assess and, if necessary, mitigate threats to primary performance caused by Pu aging. The labs briefly presented their program to address Pu aging to JASON. The plan seemed sensible, but a detailed JASON assessment would require additional information about the program as well as technical details.
>
> Continued study of Pu-aging should address the following:
>
> • Investigation of the properties of naturally and artificially aged Pu that are relevant to primary yield. These include compressibility, strength, and entropy at weapons-relevant pressures and densities.
> • Completion of aging studies for the full set of Pu materials used in the stockpile.
> • Extending the range of accelerated aging to identify the types, modes, timescales, and uncertainties in changes of Pu behavior that would affect primary performance.
> • The utility of integrated sub-critical experiments with new and aged Pu pits should be explored. They could cover the temperature and pressure conditions encountered during primary implosion to provide information about consequences of Pu aging."

The NNSA and the nuclear weapons labs have capitalized on this half-of-a study, citing it as a "paradigm shift." For example, as the Los Alamos National Laboratory puts it:

> "In 2019, the independent scientific advisory group Jason released a study that assessed plutonium pit lifetimes. The study, a follow up to the 2006 Jason report that concluded there wasn't enough proof to support a plutonium aging issue, stated that plutonium aging might in fact eventually impact the reliability of U.S. nuclear weapons. In the unclassified summary, the authors "urge that pit manufacturing be re-established as expeditiously as possible in parallel with the focused program to understand aging, to mitigate against potential risks posed by Pu aging on the stockpile." With this sudden paradigm shift, concern about aging pits has become more palpable in recent years. How much longer will pits last?
>
> "We don't have an immediate concern with aging," says Los Alamos Director Thom Mason. "Up to this point, the plutonium pits in America's nuclear weapons have been very robust. But the pits we have today were largely manufactured in the 1980s, and we don't have the predictive ability to say with certainty that our current, 40-year-old pits will be good until any particular date. It's sort of glass half full, glass half empty; we can't prove that they will fail, but we also can't prove that they will work."
>
> **The best way to deal with this dilemma is to "take it off the table," Mason explains. "We do that by making new pits, immediately."** (Bolded emphasis added.) [25]

[25] *Pit production explained*, LANL, December 21, 2021, https://www.lanl.gov/media/publications/national-security-science/1221-pit-production-explained

Congress has made its concern over the lack of pit aging studies explicit in legislation. The FY 2021 Consolidated Appropriations Act enacted the following provision:

> "Pit and Plutonium Aging.-There is concern with the apparent lack of focus on advancing knowledge regarding pit and plutonium aging since the JASONs conducted its first study in 2006. Given the future needs of the nation's nuclear deterrent, a robust program of research and experimentation is needed. Therefore, NNSA is directed to develop a comprehensive, integrated ten-year research program for pit and plutonium aging that represents a consensus program among the national laboratories and federal sponsors. Such a plan shall include estimated cost of ongoing research, new or upgraded capability needs, and key near-, mid-, and long-range milestones. The plan shall be submitted to the Committees on Appropriations of both Houses of Congress not later than 180 days after enactment of this Act." [26]

Congress gave further direction in the FY 2023 Defense Authorization Act:

> SEC. 3124. CERTIFICATION OF COMPLETION OF MILESTONES WITH RESPECT TO PLUTONIUM PIT AGING.
> (a) REQUIREMENT.—The Administrator for Nuclear Security shall complete the milestones on plutonium pit aging identified in the report entitled ''Research Program Plan for Plutonium and Pit Aging'', published by the National Nuclear Security Administration in September 2021.... and
> (2) seek to enter into an arrangement with the private scientific advisory group known as JASON to conduct, not later than 2030, an assessment of plutonium pit aging.

Compelled by a Freedom of Information Act request, NNSA released its 2021 ''Research Program Plan for Plutonium and Pit Aging" to the public, but it is nearly 50% redacted (which is under appeal).

Why the lack of openness over plutonium pit aging? Surely general findings could be disclosed without revealing classified design details. This casts a pall of suspicion that NNSA is deliberately dragging its heels on a new, comprehensive pit aging study because it knows it won't support its aggressive drive for production of new design pits for new design nuclear weapons. And why wait until 2030 for a new assessment of pit aging when by that time tens of billions of dollars will have already been spent on plutonium pit production?

The draft LANL SWEIS noted that "Commenters request that the Plutonium Pit Aging Study be completed by NNSA before pit production starts." The draft LANL SWEIS responded with "*The need for pits was evaluated in the CT SPEIS [2019 Complex Transformation Supplemental PEIS], the [2020] SRS Pit Production EIS, and the 2020 LANL SWEIS SA. These documents address the Plutonium Pit Aging Study."* (Volume 2, PDF page 210)

We roundly condemn that statement as misleading, more NNSA obfuscation, and downright wrong. NNSA has not fully disclosed the issue of plutonium pit aging, or rather the lack of it, since the 2006 Jason Life Study, even as it spends tens of billions of dollars for new-design nuclear weapons for the new nuclear arms race. **We reiterate, there should be a new and full independent pit life study before plutonium pit production begins.**

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[26] FY 2021 Consolidated Appropriations Act, Division D, p. 108, https://www.congress.gov/116/statute/STATUTE-134/STATUTE-134-Pg1182.pdf

All this said, there are indications the same body of independent scientists that conducted the 2006 pit life study will conduct another study this summer. If so, NNSA should publish the results as soon as possible, and in an unclassified form. In fact, the draft Pit Production PEIS should wait on those results, as they are crucial in determining the need or not for expanded plutonium pit production. Nuclear Watch specifically calls upon the NNSA to include new pit life study results in the draft Pit Production PEIS.

Similarly, the Pit Production PEIS should incorporate the findings of our colleague Dr. Dylan Spaulding, a senior scientist and physicist at the Union of Concerned Scientists, or refute them in detail, if the agency can.

In his chapter "Assessing the Lifespans of Plutonium Pits," Dr. Spaulding concluded:

> "Plutonium aging is not a credible motivation for renewing pit production at this time. No new technical evidence suggests that the lifetime of plutonium in pits is any shorter than the previously determined 85 to 100 years. If anything, accelerated aging studies have shown that the onset of deleterious effects is slower than expected and that plutonium's unusual metallurgical behavior may slow or counteract many processes thought to contribute to aging.
>
> Publicly reported conclusions regarding both static and dynamic equation-of-state data suggest that the performance of plutonium in US weapons is not measurably different at four to five decades of age.
>
> Signs of void swelling and helium-bubble accumulation, often cited as a potentially catastrophic mechanisms that could result in an unacceptable reduction in performance margin, have not been seen to be significant in samples aged at an accelerated rate to 200 years of age.
>
> The acceptable service life of the primary stage in nuclear weapons may be determined by components other than plutonium. The service life of a nuclear weapon's primary stage may be shorter than 85 to 100 years, but such effects could, in principle, be handled without remanufacturing the plutonium pit itself.[27]

Here, we specifically incorporate Dr. Spaulding's study by reference into the draft Pit Production PEIS.

Maintaining Stockpile Reliability

There were more than forty references in the draft LANL SWEIS that one of LANL's main missions is "maintaining and enhancing the safety, reliability, and effectiveness of the U.S. nuclear weapons stockpile." "Deterrence" discussed above and "stockpile reliability" are the nuclear weapons establishment's quasi-religious mantras for its $2 trillion "modernization" program, which repeated every year induces Congress to shower it with money. But given that future pit production is to produce new design nuclear weapons, is this really true?

[27] *Plutonium Pit Production*, Dr. Dylan Spaulding, Union of Concerned Scientists, May 2025, https://test.ucsaction.org/sites/default/files/2025-05/Plutonium-Pit-Production-report.pdf

The draft LANL SWEIS quotes "Restoring the ability to produce plutonium pits for primaries will guard against the uncertainties of plutonium aging in today's stockpile and will allow new pit designs to be manufactured, if necessary for future weapons," as one of the three pillars of Biden's 2022 Nuclear Posture Review. (Volume 1, PDF page 32).

It is an indisputable fact that new pit designs will be manufactured for future new-design nuclear weapons, specifically the W87-1 ICBM warhead at LANL and the sub-launched W93 warhead at SRS. The related corollary omitted from public attention is that no future pit production is to maintain the safety and reliability of existing nuclear weapons, which have been extensively tested. None, zero. New pits with changed designs cannot be full-scale tested because of the existing international testing moratorium, thereby likely eroding confidence in stockpile reliability. Or, alternatively, these new designs could prompt the U.S. to return to nuclear weapons testing, which a former national security advisor to Trump has already called for. While renewed nuclear weapons testing could do much to restore confidence in stockpile reliability, it would have disastrous international proliferation impacts.

The inescapable conclusion is that future pit production is NOT for the claimed twin rationales of deterrence and maintaining stockpile reliability, nor is it because of pit aging issues (see previous comment section). Instead, it is for new design nuclear weapons for the new escalating nuclear arms which this Pit Production PEIS process seeks to aid and abet. Therefore, once again, this Pit Production PEIS must have a fourth alternative of conservatively and prudently maintaining the reliability of the existing, extensively tested nuclear weapons stockpile while the U.S. plays a global leadership role toward fully honoring the NPT's mandate for nuclear disarmament.

Related issues that the draft Pit Production PEIS must address are:

- What is the justification for new-design nuclear weapons? Why aren't existing nuclear weapons more than sufficient for maintaining "deterrence"?

- Could new design nuclear weapons with new plutonium pits prompt the U.S. to resume testing, which would certainly have strongly negative international proliferation consequences?

- Will confidence in the stockpile be eroded if new-design nuclear weapons with new plutonium pits are not full-scale tested?

Pit Reuse

The U.S. already has more than 15,000 plutonium pits in storage. The draft Pit Production PEIS should thoroughly analyze the reuse of existing pits as a viable alternative to the manufacturing of new pits. Former NNSA Administrator Jill Hruby has already indicated in congressional testimony that by default existing pits will be reused in the initial manufacturing of new-design nuclear weapons. Why not all, especially given potential cost savings and higher confidence in tested designs?

The 2020 Savannah River Site Environmental Impact Statement specifically stated that pit reuse is being considered, as follows:

> Life extension programs include pit reuse activities. The Complex Transformation SPEIS (NNSA 2008a) provides the following description of pit reuse, which his taken from the SSM PEIS (DOE 1996, p. S-20): "Intrusive pit modification reuse requires handling and processing of the plutonium internal to the pit. Non-intrusive pit modification reuse involves the external features of the pit and does not require an extensive plutonium infrastructure; the risk of contamination and generation of radioactive waste is very low for non-intrusive modification activities."
>
> "Implementing a moderate pit manufacturing capability now is a prudent approach to mitigate against age-related risk. For the foreseeable future, NNSA will rely on a combination of newly manufactured pits and judicious reuse of existing pits to modernize the U.S. nuclear stockpile. This approach enables NNSA to implement a moderately sized pit manufacturing capability of not less than 80 pits per year beginning during 2030." [28]

We note the existence of the Special Nuclear Material Component Requalification Facility at the Pantex Plant, also the site for storage of at least 15,000 existing pits. The Plant itself has boasted how pit reuse is much less expensive and environmentally damaging than the production of new pits.

> "With underground testing long out of the question, the health of the country's nuclear weapons stockpile relies in part on pit testing conducted at Pantex. At Pantex's Special Nuclear Material Component Requalification Facility, pits — a nuclear weapon's heart — are probed for analytical data... Requalification allows a pit to stay in the stockpile; surveillance involves obtaining information on a pit, then sharing it with the national laboratories to help certify to the President that the nuclear weapons stockpile is at an extremely high level of quality." [29]

We contend that pit reuse must be analyzed in great detail in the draft Pit Production PEIS as a more than credible alternative. That in turn should help to determine the needed rate of production of new pits at LANL and SRS.

We are well aware of NNSA's arguments against pit reuse. For example, in response to public comments, the SRS EIS stated:

> **"S.2.3.4 Only Reuse Existing Pits**
> NNSA currently stages plutonium pits at Pantex. Like the pits in the active stockpile, those pits are aging and would not mitigate plutonium aging risks or enable NNSA to implement enhanced safety features to pits to meet NNSA and DoD requirements. As identified earlier in Sections S.1.2.1 and S.2.1, this SRS Pit Production EIS analyzes judicious reuse of pits from the existing stockpile, however, the *Atomic Energy Defense Act* requires the production of new pits, so this alternative would not support the purpose and need for agency action (50 U.S.C. § 2538a).

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[28] *Final Environmental Impact Statement for Plutonium Pit Production at the Savannah River Site in South Carolina*, NNSA, September 2020, Footnote one, p. S-3 & S-4, https://www.energy.gov/nepa/articles/doeeis-0541-final-environmental-impact-statement

[29] *Day in the Life of a Pit,* Pantex Plant, July 15, 2015, https://pantex.energy.gov/news/blog/day-life-pit

> Consequently, an alternative that relies only on reused pits was eliminated from detailed analysis." [30]

Here, we attempt to attack that argument head on. As we extensively discussed in our section on plutonium pit aging, there is no publicly available evidence that aging effects will impact plutonium pit reliability in any foreseeable practical time scale. We have only the NNSA and lab directors invoking uncertainty (however, we do concede that there is certainly uncertainty when the NNSA and lab directors seem to avoid new pit aging studies that could alleviate that uncertainty). If there is classified information showing serious aging effects, well then, sanitize it and release it. Put it into a declassified form that can help convince the public that the risks of new pit production are justified. Among such risks we include the exorbitant expense, increased radioactive wastes and the uncertainties that new designs could introduce, including a possible resumption of full-scale testing,

Concerning "enhanced safety features to pits to meet NNSA and DoD requirements," we assert that "safety" is certainly a convenient mom and apple pie issue. Who can be against "safety"?

However, we fear that "safety" is a Trojan Horse for nuclear weapons designers to do whatever they want in an endless string of weapons variants and new designs. On a cautionary note, any kind of "enhanced safety features to pits" that are intrusive to the pits themselves could conceivably impact the all-important symmetry of implosion and subsequent mix of plutonium and tritium, potentially impacting reliability. This, again, could lead to full-scale testing with serious international proliferation consequences.

Concerning "the *Atomic Energy Defense Act* requires the production of new pits," yes, there is no getting around that. It is the NNSA's trump card. However, we are aware of how legislative sausage gets ground. The influence of the nuclear weapons labs prompted that statutory requirement to begin with. As Ray Charles sang, "Them that got get." But that does not make it right or in the country's best national security interest.

A declaration by Marvin Adams, NNSA Deputy Administrator for Defense Programs, is relevant here. He stated, "Pit performance degrades over time... There is no concern over reliability today, but concerns will develop as existing pits continue to age."

If so, show us the evidence! If there is no concern today, what is the projected date that such concerns would be valid? You can't have it both ways, saying everything is fine today but will be terrible tomorrow without evidence.

But Adams also declared that the:

> "...requirements these [future] warheads must meet differ from those met by existing warheads. In some cases, existing pits that might seem available for reuse are not well

[30] Ibid., p. S-25

> suited to the new requirements or are not available in the needed quantities. This is one reason pit manufacturing is needed without further delay." [31]

Here we get into the nub of things. Those "requirements" are of course not specified. But here one of our central points is again reaffirmed. Pit production is not being driven by pit aging, although that is the primary false justification for it. Pit production is being driven by new-design nuclear weapons for the new arms race.

We assert that the correct NNSA strategy would be to forego new designs and new pit production for them while relying on non-intrusive pit requalification, or pit "reuse,' to maintaining the existing, extensively tested stockpile as needed. That is what a draft Pit Production PEIS should consider as a credible fourth alternative to expanding nuclear weapons programs.

Another reason pit reuse needs serious evaluation is that NNSA has been forced to rely upon it because of its own delays and cost escalations. This is made clear in former NNSA Administrator Jill Hruby's response to Sen. Angus King's question, "Is the pit production schedule running in parallel with the renewal of the triad?"

> "Yeah, we have a plan that's fully consistent with the schedule with the Department of Defense to put new pits in our warheads. Now, in some cases, the Savannah River is... We're targeting completion of construction of the Savannah River Plutonium Processing Facility in 2032, and then we have to introduce plutonium. We have to introduce the processes and the rate production. That'll take a few more years. But our plan is to be able to produce pits for the new W93 warhead, and we're targeting at least half of that population. We don't think we can get that facility up in time to do all of the W93 builds, but it's important that we have a fair number of those new pits because **our option is to reuse pits**, which introduces some uncertainty, but more importantly, it limits what else we can do and our stockpile when we reuse those pits." [32]

Thus, it looks like up to half of the new-design W93 warheads could have reused pits. We again argue that untested new-design nuclear weapons should not be added to the stockpile because of the uncertainties they will introduce. But the specific point here is that pit reuse is real and is planned to be used. It should be so analyzed and considered as a more than credible alternative to new pit production in the draft Pit Production PEIS.

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[31] Declaration of NNSA Deputy Administrator Marvin Adams, in opposition to our successful lawsuit for a programmatic environmental impact statement on pit production, No 1:21-cv-01942-MGL, https://nukewatch.org/wp-content/uploads/2025/04/Signed-by-NA-10-APPELLATE-540618-v1-Nuclear_Pits_Dr__Adams_Declaration_121224-FINAL-v2.pdf

[32] Senate Committee on Armed Services, Hearing title: To receive testimony on the Department of Energy and National Nuclear Security Administration atomic energy defense activities in review of the Defense Authorization Request for Fiscal Year 2025 and the Future Years Defense Program, April 17, 2024, bolded emphasis added.

Plutonium Disposition

The draft LANL SWEIS stated:

> "As a result of the announced delay in implementation of the SPDP project as analyzed in the SPDP EIS,[33] this SWEIS also analyzes the potential limited enhancement of operations of the ARIES processing line in PF-4. This limited enhancement would take advantage of efficiencies in the process and would increase the amount of actinides processed in support of surplus plutonium disposition from the current limit of 400 kilograms per year to 700 kilograms per year. This increase in annual throughput was previously analyzed as part of the Expanded Operations Alternative in the 2008 LANL SWEIS. There would be no change to the existing building footprint for the limited enhancement (no new construction) nor would any additional floor space be required in PF-4 for ARIES operations. This limited enhancement of operations of the ARIES processing line would not violate the prohibition on ARIES expansion as expressed in Section 3116 of the 2024 National Defense Authorization Act, codified at 50 U.S.C. § 2538a(f)." (Volume 1, PDF p. 95)

AS LANL explains, the purpose of the Advanced Recovery and Integrated Extraction System (ARIES) is to:

> "...convert plutonium metal that could be used to make nuclear weapons into plutonium oxide powder. The program supports the Laboratory's—and the nation's—nuclear nonproliferation commitments by helping to prevent the spread of weapons-grade nuclear material...
>
> Initially, the United States hoped to convert weapons-grade plutonium into fuel for commercial power reactors, but that plan was scrapped when cost estimates skyrocketed.[34] Instead, in 2018, Congress approved a much less expensive "dilute and dispose" plan in which Los Alamos receives surplus nuclear weapon pits (cores) from the Pantex plant near Amarillo, Texas. The pits are disassembled, using a machine called a pit cutter, and the plutonium is placed into a furnace for up to 48 hours. The heat from the furnace turns the plutonium metal into plutonium oxide powder, which is then blended to ensure uniformity." [35]

First of all, the "announced delay in implementation of the SPDP project" is reflective of NNSA's prioritization of nuclear weapons programs above all. This reputed nonproliferation program is being delayed because essentially NNSA can't do both at the same time, that is expand ARIES operations and plutonium pit production in PF-4's limited floor space. That is exactly why Congress recently prohibited expansion of ARIES so that NNSA can focus on nuclear weapons production while cutting nonproliferation programs. But this is not to say that ARIES doesn't also play a role in supporting pit production, as the draft SWEIS states:

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[33] Surplus Plutonium Disposition Program Final Environmental Impact Statement (DOE/EIS-0549), Department of Energy, December 2023, https://www.energy.gov/sites/default/files/2024-01/final-eis-0549-surplus-plutonium-disposition-volume-2-2023-12.pdf

[34] Left unsaid is the fact that the canceled MOX Fuel Fabrication Facility at the Savannah River Site cost taxpayers around $7 billion for nothing (but is unknown since the government has not publicly given an accounting for it). It is now being repurposed into the Savannah River Plutonium Processing Facility for unneeded pit production, originally estimated at $4 billion but now costing more than $11 billion.

[35] *Metal to powder: The ARIES program alters plutonium so that it can't be used in nuclear weapons*, LANL, April 2022, https://www.lanl.gov/media/publications/national-security-science/0422-aries

> "The process development work in the ARIES processing line also supports plutonium pit production, as described in the 2008 SWEIS, for actinide materials science and processing R&D. The disassembly process developed for ARIES supported development of similar equipment used in the first step in recovery of plutonium from pits arriving from Pantex. Equipment used in ARIES in PF- 4 can be used to support pit disassembly for the pit production mission." (Volume 1, PDF page 631)

So, the question is, which the draft Pit Production PEIS should answer, will ARIES be used to provide feedstock plutonium for pit production (presumably pre-oxide)?

To quote the draft LANL SWEIS again:

> "This limited enhancement would take advantage of efficiencies in the process and would increase the amount of actinides processed in support of surplus plutonium disposition from the current limit of 400 kilograms per year to 700 kilograms per year. This increase in annual throughput was previously analyzed as part of the Expanded Operations Alternative in the 2008 LANL SWEIS." (Volume 1, PDF p. 95)

That 75% increase in plutonium is a lot and its approval reliant upon the 2008 SWEIS is insufficient. As we stated in our comments on the draft 2008 LANL SWEIS:

> DSWEIS Table 3-18 states that the Expanded Operations Alternative will include the capacity to disassemble up to 500 plutonium pits per year, in contrast to the "No Action Alternative" of 200 pits per year. Almost no discussion ensues, except *Special recovery processes are performed, including demonstration of the disassembly and conversion of plutonium pits using hydride-dehydride processes and development of expanded disassembly capacity.* DSWEIS, p. 3-57. This is a significant failure that a new DSWEIS must correct.
>
> "Hydride-dehydride processes" are probably the "Advanced Recovery and Integrated Extraction System" (ARIES), which a new DSWEIS should fully explain the merits and demerits thereof. What waste volumes in all categories will result from ARIES? What safety problems might there be with the process? [36]

These questions merit full reconsideration in the draft Pit Production PEIS. It is not clear how expanded pit production can safely operate concurrently with other major plutonium programs at the aging PF-4 facility, very much including ARIES. The Government Accountability Office (GAO) raised this issue years ago with no apparent resolution, saying:

> "However, plans for converting additional surplus plutonium into plutonium oxide are uncertain because of two issues. These issues include NNSA's still-developing plans for new pit production, which will also take place at LANL, and issues surrounding the agency's ability to ship newly produced plutonium oxide for dilution to DOE's Savannah River Site (SRS) in South Carolina. According to agency officials, NNSA and DOE are taking several actions that, if successfully implemented, are designed to allow NNSA to meet its long-term plutonium oxide

[36] *Comments to the National Nuclear Security Administration on the Draft Environmental Impact Statement for Continued Operation of the Los Alamos National Laboratory*, Nuclear Watch New Mexico, September 27, 2006, https://nukewatch.org/oldsite/facts/nwd/NWNM_SWEIS_Comments.pdf

production goals. These actions include continuing to review plutonium oxide and pit production plans, increasing plutonium storage at LANL, reducing the amount of SRS's surplus plutonium, and accelerating the shipment of diluted plutonium from SRS to WIPP." [37]

There will be programmatic conflicts and competition for PF-4 floor space between ARIES and plutonium pit production. As GAO reported on:

> NNSA officials told us in February 2019 that as a result of pit production requirements, the agency might need to use a portion of the processing areas in PF-4 for pit production that the agency had planned to use for plutonium oxide production. Pit production requirements also may use more space in the high-security vault in PF-4 where plutonium must be temporarily stored. Also, in February 2019, NNSA officials said that PF-4's high-security storage space is already near full capacity and that pit production may demand storage space that NNSA had planned to use for plutonium oxide production.
>
> **Reviewing use of operational space in PF-4.** LANL reported in March 2019 that the requirement to produce 30 pits per year would have no significant negative impact on plutonium oxide production. However, LANL reported that a number of programs, including pit production, were planning to increase operations in PF-4, placing demands on the aging facility that could lead to more frequent maintenance outages.[38]
>
> While NNSA is taking actions to address pit production and shipment issues, the agency continues to work on refining the long-term plutonium oxide production goals in its 2018 conceptual plan. However, NNSA officials said that establishing firm long-term plutonium oxide production plans now would be premature and that the agency would use the next several years to balance plutonium oxide production, pit production, and shipment issues as they refine long-term production plans.[39]

In short, the conflicts that GAO point out cry out for both nation-wide programmatic review and LANL site-wide review.

The operation of the Advanced Recovery and Integrated Extraction System (ARIES) at LANL and the transport of plutonium from Pantex to be processed in ARIES must be fully reviewed in the draft plutonium pit production. Reaching back for blanket approval in the 2008 LANL SWEIS is not appropriate given the new programmatic demands on PF-4, particularly expanded plutonium pit production.

NNSA's proposal for now is to operate ARIES at LANL in order to produce plutonium oxide to be shipped to the Savannah River Site for downblending and disposal in WIPP. However, the Senate's version of the 2020 National Defense Authorization Act directed NNSA to consider alternative locations for the plutonium oxide production mission, including SRS. Any NNSA document relevant to moving ARIES to SRS should be included in the reference documents for the draft Pit Production PEIS. In addition, the environmental and proliferation risks of shipment of plutonium oxide from ARIES at LANL to SRS must be fully discussed.

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37 *SURPLUS PLUTONIUM DISPOSITION NNSA's Long-Term Plutonium Oxide Production Plans Are Uncertain,* GAO, October 2019, "What GAO Found," https://www.gao.gov/assets/gao-20-166.pdf

38 Ibid., page 18

39 Ibid., page 22

Finally, President Trump recently issued a vague Executive Order that seemed to cancel the plutonium disposition program and ordered the startup of plutonium reprocessing for commercial reactor fuel. If so, this would be a major departure from policy prohibiting plutonium reprocessing dating back to the Carter Administration. The pending Pit Production PEIS should address this issue and how it may or may not impact expanded plutonium pit production, particularly as to how the two issues may intersect at LANL's main plutonium facility, PF-4.

Pit Production and the Waste Isolation Pilot Plant

NNSA assumes that the Waste Isolation Pilot Plant (WIPP) will be prioritized for disposal of pit production radioactive wastes. In contrast, the New Mexico state permit requires prioritization of LANL cleanup wastes and that DOE start looking for a new out-of-state dump. WIPP is already oversubscribed for all the radioactive wastes that the Department of Energy wants to dump there. NNSA needs to fully analyze and project plutonium pit waste disposal for the next 50 years.

A major vulnerability to the NNSA's overly ambitious plans for expanded plutonium pit production is the uncertainty of future disposal of radioactive transuranic (TRU) wastes and related lack of analysis under the National Environmental Policy Act (NEPA). The only repository for TRU wastes is the Waste Isolation Pilot Plant (WIPP) in southern New Mexico. WIPP is already way oversubscribed for all of the possible TRU wastes that the Department of Energy and NNSA would like to send to it. In addition, legal agreements with the States of Idaho and South Carolina and the relatively new State permit also bind WIPP operations.

Given this, it is not clear where future TRU wastes from plutonium pit production will go in the long term, unless there is an additional repository or WIPP's legal capacity limit is changed by Congress. A senior NNSA official has noted that future disposal of transuranic wastes is the Achilles heel of expanded plutonium pit production.

> "Addressing the elephant in the desert, an official with the National Nuclear Security Administration (NNSA) on Wednesday warned that ongoing nuclear-weapon maintenance [code for plutonium pit production] will require a transuranic waste disposal site that is open beyond 2050: the current, best-case availability for the Waste Isolation Pilot Plant in New Mexico.
>
> "From an NNSA perspective, with an enduring mission, we are going to continue to have a need to dispose of transuranic waste past 2050," James McConnell, the National Nuclear Security Administration's associate administrator for safety, infrastructure, and operations, said Wednesday at the Exchange Monitor's virtual RadWaste Summit. "Far and away the biggest challenge for NNSA is to make sure that the disposal system for transuranic waste is robust enough to not become a choke point for our mission," McConnell said." [40]

The draft Pit Production PEIS must analyze the possibility of not having the Waste Isolation Pilot Plant available (WIPP) for disposal of some or all of the radioactive transuranic (TRU)

[40] *Post-WIPP Disposal 'Far and Away' Biggest TRU Waste Challenge for NNSA Pit Mission, Official Says,* Exchange Monitor, September 10, 2020, https://www.exchangemonitor.com/pit-waste-far-away-biggest-challenge-nnsa-pit-mission-official-says/

wastes from plutonium pit production. First, there is the matter of an accident shutting WIPP down for indefinite periods, as happened for nearly three years after an improperly prepared radioactive waste drum from LANL ruptured on Valentine's Day 2014.

The NNSA itself seems unclear how long WIPP needs to be open. According to the 2020 draft Savannah River Site (SRS) environmental impact statement:

> "WIPP was originally planned for an operational life of 25 years, followed by closure and post closure phases. In August 2019, DOE released, for stakeholder review and comment, a draft Carlsbad Field Office Strategic Plan based on maintaining WIPP TRU waste disposal operations active through 2050 as needed to support identified TRU waste inventory." (SRS DEIS p. 3-54)

As another 2020 NNSA document put it, "Continued availability of WIPP to dispose TRU waste for the next 50+ years is of the utmost importance to NNSA's mission. It estimated that by 2038 NNSA will be largest generator of TRU waste." [41]

NNSA's 2019 Final Supplement Analysis of the Complex Transformation SPEIS states:

> "Based on current estimates, producing 30 pits per year at LANL and 50 pits per year at SRS could generate a maximum of 1,151 m^3 of TRU waste annually (consisting of 107 m^3 at LANL and 1,044 m^3 at SRS)... The combined TRU waste (1,151 m^3) generated over 50 years would be 57,550 m^3, which would account for 53 percent of the projected available capacity at WIPP. In addition, **use of WIPP capacity for national security missions such as pit production would be given priority in the allocation process**." [42]

First of all, this fundamentally changes WIPP's mission from cleanup (however poor) of DOE's nuclear weapons complex to direct support of expanded plutonium pit production. This does not comport with the current New Mexico state permit that requires DOE to prioritize disposal of LANL's legacy TRU wastes instead of new plutonium pit production wastes.[43]

As more evidence that NNSA may not have WIPP for TRU waste disposal for the long run, the New Mexico State permit also requires:

> "...an annual report summarizing its progress toward siting another repository for TRU waste in a state other than New Mexico. The annual report shall summarize the steps the DOE has taken

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41 *RadWaste Summit 2020, National Nuclear Security Administration Prioritization Approach*, James J. McConnell, Associate Administrator for Safety, Infrastructure and Operations, September 9, 2020, bolded emphasis and parentheses in the original, https://srswatch.org/wp-content/uploads/2023/01/Doc-1-Radioactive-Waste-Summit-NA-50-Briefing-Final-9-4-20-2-1.pdf

42 Final Supplement Analysis of the Complex Transformation SPEIS, NNSA, December 2019, page 65, https://www.energy.gov/sites/default/files/2020/01/f70/final-supplement-analysis-eis-0236-s4-sa-02-complex-transformation-12-2019.pdf

43 DOE shall "prioritize by so certifying the emplacement at WIPP of stored (including buried) TRU mixed waste from the clean-up activities at the Los Alamos National Laboratory (LANL)." Waste Isolation Pilot Plant Hazardous Waste Facility Permit, June 2024, 4.2.1.4 Prioritization and Risk Reduction of New Mexico Waste, parentheses in the original, https://wipp.energy.gov/Library/Information_Repository_A/Searchable_Permit_4ItemPackage_Dec2024_1.pdf

> toward siting such a repository in another state and the report shall include documentation supporting the summary." [44]

Yet more evidence of New Mexico's increasing resistance to "Forever WIPP" is this additional provision in the State WIPP permit:

> "The Secretary [of the New Mexico Environment Department] shall issue a notice of revocation and reissuance for cause within 30 calendar days if, as specified in the Land Withdrawal Act (Pub. L. 102-579, as amended), the volumetric disposal limit for TRU waste of 6.2 million cubic feet at the WIPP facility is increased, or additional types of waste (i.e., other than defense-related TRU waste) are authorized, by federal statute." [45]

In short, the draft Pit Production PEIS should explain in detail how long WIPP needs to be open to accept pit production wastes from LANL and SRS and how NNSA plans to ensure that WIPP will remain open.

WIPP is Already Over Subscribed

And then there is the question whether WIPP will have the capacity to dispose of the NNSA's projected TRU wastes from plutonium pit production. This section concerns other streams of TRU wastes that DOE wants to send to WIPP.

"In this AROD, DOE/NNSA is announcing its decision to use the dilute and dispose method to disposition up to 7.1 MT of non-pit plutonium as contact handled transuranic (CH-TRU) waste at the Waste Isolation Pilot Plant (WIPP)." [46]

In all, DOE plans to send up to 48.2 metric tons of "excess" plutonium to WIPP. The plutonium will first have to be processed at LANL's PF-4 (see our comments on Plutonium Disposition), then shipped to the Savannah River Site (SRS) for "dilute and dispose" treatment, then shipped back across the country to WIPP for disposal. Note that much of this is spurred by the failure of the Mixed Oxide Fuel Facility and litigation by the State of South Carolina.

The National Academy of Sciences states that the large volumes involved are as follows: [47]

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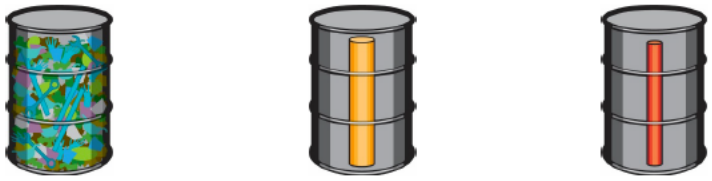
44 Ibid., 2.14.3 Repository Siting Annual Report

45 Ibid., 1.3.1 Permit Modification, Suspension, and Revocation

46 DOE/NNSA, 8-28-20, https://www.federalregister.gov/documents/2020/08/28/2020-19023/surplus-plutonium-disposition

47 *Review of the Department of Energy's Plans for Disposal of Surplus Plutonium in the Waste Isolation Pilot Plant* (2020), NAS, page 30, https://www.nationalacademies.org/ocga/briefings-to-congress/review-of-the-department-of-energys-plans-for-disposal-of-surplus-plutonium-in-the-waste-isolation-pilot-plant

BOX 2-3 Continued



(a) (b) (c)

Characteristics	(a) Direct-loaded	(b) Pipe Overpack Container	(c) Criticality Control Container/Criticality Control Overpack (CCC/CCO)
Inner dimension	N/A	12-inch-diameter pipe	6-inch-diameter pipe
Physical volume	0.21 m^3	0.21 m^3	0.21 m^3
Inner container volume	0.21 m^3	0.046 m^3	0.013 m^3

BOX FIGURE 1 Graphical illustration of the three types of 55-gallon drums approved for disposal of TRU waste at WIPP with information on the physical volumes (outer container volume) and inner container volumes affected by the volume of record decision. (a) A standard sized, direct-loaded 55-gallon drum, (b) a pipe overpack container which has a 12-inch pipe centered within a 55-gallon drum, and (c) the criticality control overpack which has a 6-inch-diameter pipe (the criticality control container) centered in a 55-gallon drum.
SOURCE: Committee-generated with information from (p. 20): https://www.wipp.energy.gov/library/WDS/DOE-WIPP-09-3427_Rev_17.pdf (accessed April 21, 2020).

The dilute and dispose plan would produce approximately 160,666 CCOs (based on a total of 48.2 MT of surplus plutonium and 300 FGE per CCC)—more than the number of 55-gallon drums currently emplaced in WIPP. The LWA volume for the DSP-TRU waste, using the numbers above, would be 2,057 m^3 while the TMW volume would be 33,740 m^3—a factor of 16 larger.

[a]Other types of POCs are used, but the 12-inch POC is the most prevalent.
[b]Only 58 POCs used a 6-inch-diameter inner pipe; the remainder used the 12-inch POC.

In addition, DOE has long sought to reclassify high level wastes at Hanford and send them to WIPP. This even resulted in a permit modification by NMED that barred those wastes.[48] If DOE has agreed to not seek to change that permit provision, it should so state in the Pit Production PEIS and other DOE documents.

Yet another major plutonium waste stream could be created by the Virtual Test Reactor. Its final environmental impact statement (EIS) states:

> "The Waste Isolation Pilot Plant (WIPP) is currently the only disposal option for defense TRU waste. WIPP's Land Withdrawal Act total TRU waste volume limit is 175,564 cubic meters. As of April 3, 2021, 70,115 cubic meters of TRU waste were disposed of at the WIPP facility. TRU waste volume estimates such as those provided in NEPA documents, cannot be used to determine compliance with the WIPP Land Withdrawal Act TRU waste volume capacity limit." [49]

[48] *Environment Department Takes Action to Prohibit High-Level Sludge from WIPP Disposal,* NMED, October 29, 2004, https://www.env.nm.gov/wp-content/uploads/sites/12/2019/10/HLW_Approval_PR.pdf WIPP Permit 2.3.3.8 Excluded Waste.

[49] VTR final EIS, NNSA, May 2022, page S-41, https://www.energy.gov/sites/default/files/2022-05/final-eis-0542-versatile-test-reactor-summary-2022-05.pdf

As the 2020 National Academy of Sciences Report determined, present and possible future TRU waste amounts at WIPP, not including possible Versatile Test Reactor waste, exceed the legal capacity, even using the Volume of Record calculation, as illustrated here: [50]

The committee was asked to review additional TRU waste streams and to assess DSP-TRU waste's potential impact on them as well as the impact on LWA capacity limits. To reassess these impacts against the new volume of record (VoR) calculations, the committee updated the volumes of specific waste streams noted in its Interim Report: Greater-Than-Class-C-like wastes, tank wastes, and TRU waste generated by pit production. Recent DOE-reported volumes for emplaced and future TRU wastes were used (DOE-CBFO, 2018a, 2019a; see Table 3-2). The results shown in Figure S-5 highlight two main issues:

- Under the VoR recalculation, the LWA volume of the DSP-TRU waste generated by processing 48.2 MT of surplus plutonium is reduced from 33,740 m^3 to 2,056 m^3, which is approximately 1 percent of the LWA capacity, yet the physical volume is substantial (approximately the physical space of two panels); and
- When additional TRU wastes volumes are taken into account, the LWA capacity will still be challenged—primarily due to initial estimates with potentially large uncertainties of TRU waste from pit production.

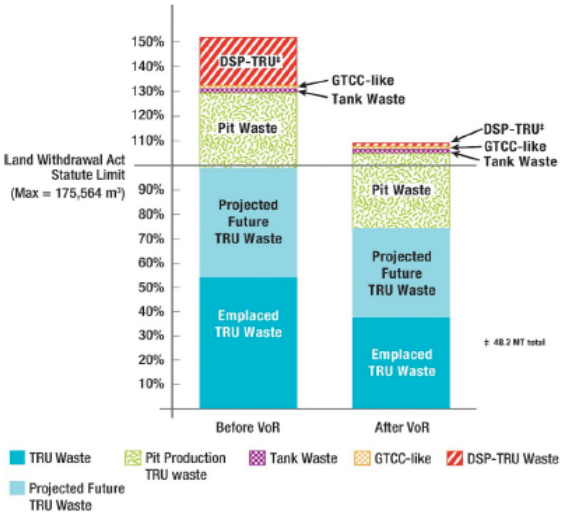


FIGURE S-5 DOE-reported emplaced and future transuranic wastes estimates (DOE-CBFO, 2018a, 2019a) and additional wastes, identified by the committee. Additional wastes are DSP-TRU, Greater-Than-Class-C-like (GTCC-like) TRU wastes, tank wastes, and TRU waste generated from pit production. The graphs illustrate the impact of the volume of record (VoR) recalculation, in particular the large reduction in DSP-TRU waste volumes. Both graphs also show that the Land Withdrawal Act statutory limit is likely to be exceeded. DSP-TRU volumes have been subtracted from TRU waste estimates. See Table 3-2.

Acronyms:
DSP-TRU = TRU wastes generated by processing excess plutonium for disposal at
CBFO = DOE Carlsbad Field Office which oversees the Waste Isolation Pilot Plant (WIPP)
GTCC = Greater-Than-Class-C radioactive wastes are wastes generated by licensees of the Nuclear Regulatory Commission, which is to say commercial nuclear energy.
LWA = WIPP's Land Withdrawal Act that set its legal limit
TRU = radioactive transuranic wastes, primarily produced from using plutonium to fabricate nuclear weapons
VoR = Volume of Record being contested by the Southwest Research and Information Center and Nuclear Watch New Mexico

[50] Ibid., p. 6.

To conclude, the Pit Production PEIS must fully explain and justify how the NNSA can guarantee that the Waste Isolation Pilot Plant will be available for disposal of its plutonium pit production transuranic wastes.

The draft Pit Production PEIS Must Also Address these NMED WIPP-related Issues

In order to demonstrate that WIPP has the capacity and capability of disposing LANL's future plutonium pit production wastes, the draft Pit Production PEIS must address these issues that the New Mexico Environment Department has formally commented on.

NMED commented on NNSA's 2020 Savannah River Site, Draft Environmental Impact Statement for Plutonium Pit Production. It stated:

> "Department of Energy (DOE) and National Nuclear Security Administration (NNSA) did not disclose, discuss and/or quantify various environmental legal matters that could have a material impact on its Proposed Action...
>
> Additionally, the April 2020 draft EIS does not discuss the November 2019 settlement between the DOE and the State of Idaho related to Idaho National Laboratories and the associated impacts of how the DOE prioritizes shipments and emplacement at WIPP. The total volume of emplaced and future waste shipments is expected to exceed the legislated volume capacity for WIPP (National Academy of Sciences Review of Department of Energy's Plans for Disposal of Surplus Plutonium in the Waste Isolation Pilot Plant, April 2020). The Idaho Settlement allocates fifty-five percent (55%) of all TRU waste shipments received at WIPP for Idaho. Depending on how the DOE prioritizes future waste shipments across the complex, other facilities around the U.S., including LANL, will need to store remediated legacy waste and/or delay remediating legacy waste. The State of New Mexico objects to the DOE prioritizing defense waste over remediating and emplacing legacy contamination at the WIPP, particularly in the state that hosts and regulates the WIPP. The DOE and NNSA failed to disclose, discuss and/or quantify various environmental legal matters that will have a material impact on legacy contamination and risk to communities…
>
> The DOE and NNSA failed to quantify the risk, impacts, and costs associated with the successful emplacement of SRS wastes at the WIPP in the draft EIS…
>
> The draft EIS fails to demonstrate that the Proposed Action will achieve environmental justice for the high percentage of minority and low-income populations in the State of New Mexico that have already suffered disproportionately high adverse human health and environmental effects of U.S. Department of Energy programs…
>
> The disposal of SRS TRU waste at the WIPP site must conform to the following requirements:
> a. Future waste streams must meet requirements in the DOE WIPP Waste Acceptance Criteria, the WIPP Hazardous Waste Facility Permit Waste Analysis Plan, and the WIPP Transportation Safety Plan Implementation Guide;
> b. DOE must adhere to the limits on types and quantity of waste imposed by the 1992 WIPP Land Withdrawal Act, as amended by Public Law No. 104–201 (1996); and

c. Legacy waste, particularly from LANL, must remain a high priority for disposal at the WIPP.[51]

Note that "b" is important because WIPP is already way oversubscribed for disposal of all TRU wastes that DOE is considering. Concerning "c", DOE is not prioritizing legacy wastes from LANL. Instead legacy wastes from Idaho and non-legacy waste from South Carolina and future plutonium pit production wastes are being prioritized.

NMED commented on NNSA's May 2020 Supplemental Analysis of the 2008 LANL Sitewide Environmental Impact Statement:

> Further, the March 2020 draft supplemental analysis of the 2008 SWEIS does not discuss the November 2019 settlement between DOE and the State of Idaho related to Idaho National Labs. In that settlement, DOE agreed to allocate fifty-five percent (55%) of all transuranic waste shipments received at the Waste Isolation Pilot Plant (WIPP) for Idaho National Labs. By prioritizing waste shipped from the State of Idaho to the WIPP, DOE will need to store remediated legacy waste at LANL and/or delay remediating legacy waste at LANL or both. DOE and NNSA did not address this risk which contradicts the conclusion that there is "no significant new circumstances or information relevant to environmental concerns. DOE and NNSA failed to account for these settlements or explain the impacts from these settlements in the draft EIS and the overall conclusion…"
>
> 9. Increased pit production will generate extra waste and DOE and NNSA will likely have to request permit modifications to increase their hazardous waste storage capacity. Section 3.3.5, page 55 indicates that low level waste and chemical waste will exceed the 2008 SWEIS estimates for the plutonium facility but not for the entire facility. DOE and NNSA will needed extra storage capacity at TA-55 and NMED approved the permit modification request in May 2017. Increased pit production will generate extra waste and DOE and NNSA may have to request permit modifications to increase their hazardous waste storage capacity. Mixed waste is currently stored at LANL beyond the one-year storage allowed by the federal Resource Conservation and Recovery Act (RCRA) under a Federal Facility Compliance Order, Site Treatment Plan. The increased pit production will result in generation and storage of more mixed waste at LANL than currently present.
>
> 12. ... The disposal capacity limits at WIPP are defined by several different laws, agreements, and permits intended for the purpose of regulating both the physical space as well as the physiochemical and radiological aspects of transuranic (TRU) and hazardous waste disposal. The WIPP Land Withdrawal Act (LWA) limits TRU waste disposal capacity to no greater than 6,200,000 ft^3 (175,564 m^3) of defense related TRU waste, a limit that is overseen by the USEPA. The Record of Decision (ROD) for the WIPP limits the amount of remote handled TRU (RH TRU) waste in the WIPP to no more than 250,000 ft^3 (7,079 m^3) of the LWA total. In the National Academies of Sciences Engineering and Medicine (NAS) Review of the Department of Energy's Plans for Disposal of Surplus Plutonium in the Waste Isolation Pilot Plant (2020), the report identifies 48.2 metric tons of surplus plutonium that is under consideration or slated for disposition at the WIPP. Based on the current LWA statute limit and on the waste volume decision (currently under appeal in the New Mexico Court of Appeals) the waste exceeds the authorized volume of waste allowed in the WIPP.[52]

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51 NMED, May 2020, https://www.env.nm.gov/wp-content/uploads/2020/05/2020-05-18-NEPA-EIS-Savannah-River-Plutonium-Pits-Final.pdf

52 NMED, May 9, 2020, https://www.env.nm.gov/wp-content/uploads/2020/05/2020-05-09-OOTS-NEPA-Review-LANL-Sitewide-EIS-Supplemental-Analysis-Final.pdf

NMED commented on NNSA's September 2020 Notice of Intent for a Lawrence Livermore National Laboratory (LLNL) SWEIS. It stated:

> The SWEIS must include a description of the radionuclides and activities of waste that will be transported to New Mexico for disposal at WIPP, along with anticipated changes in waste generation and disposal that will result from the Proposed Action.[53]

NMED also commented:

> "Action Alternatives in the SWEIS that involve transporting material from LLNL to New Mexico must ensure any action will achieve environmental justice for the high percentage of minority and low-income populations in the State of New Mexico. These populations have already suffered disproportionately high adverse human health and environmental effects from nuclear energy and weapons programs of the United States."

In October 2020 NMED commented to the Savannah River Site Site-Specific Advisory Board:

> 1. DOE/National Nuclear Security Administration (NNSA) publicly stated plans to dilute and dispose of non-pit plutonium waste. DOE/NNSA plans to dispose of this waste at the Waste Isolation Pilot Plant (WIPP) facility in Carlsbad, New Mexico. However, DOE/NNSA has not yet discussed the regulatory implications of such plans with NMED nor satisfied the approval conditions of its Resource Conservation and Recovery Act (RCRA) Hazardous Waste Facility Permit issued by the State of New Mexico. The State of New Mexico requests that the EM SSAB carefully consider the ramifications of the incomplete analysis of the proposed final disposition pathway for this waste.
>
> On December 24, 2015, DOE/NNSA announced in the Federal Register, 80 Fed. Reg 80,348, that its preferred alternative for disposition of the 6 metric tons (MT) of non-pit plutonium was the dilution/downblending of the waste at SRS and disposal at WIPP, located near Carlsbad, New Mexico, otherwise known as the "WIPP Disposal Alternative." At that time, DOE/NNSA did not state a preferred alternative for dispositioning the associated 7.1 MT of pit plutonium. In its April 5, 2016 Record of Decision, 81 Fed. Reg. 19,588, DOE/NNSA announced its decision to implement their preferred alternative for the disposition of 6 MT of non-pit plutonium as contact- handled transuranic (CH-TRU) waste for disposal at WIPP. A disposition path for the 7.1 MT of pit plutonium was not decided at this time.
>
> On July 23, 2020, DOE/NNSA announced that SRS had resumed plutonium downblending. In its press release, DOE/NNSA stated that "Plutonium downblending is the process of mixing plutonium oxide with a multicomponent adulterant. After downblending, the plutonium will be shipped to the Waste Isolation Pilot Plant in New Mexico for disposal."
>
> On August 28, 2020, DOE/NNSA issued an amended decision in the Federal Register, 85 Fed. Reg. 53,350, stating that it will now dispose of an additional 7.1 MT of pit plutonium as CH-TRU waste at the WIPP facility. According to DOE/NNSA, the process would be the same as described for the 6 MT of non-pit plutonium that DOE/NNSA had previously delineated for disposal at WIPP. Conversion to oxide may be performed at either Los Alamos National Laboratory (LANL) or at SRS.

[53] NMED, September 2020, https://www.env.nm.gov/wp-content/uploads/2020/05/2020-08-25-OOTS-NEPA-Lawrence-Livermore-NL-Intent-to-Prepare-Sitewide-EIS-draft.pdf

> DOE Environmental Management must satisfy the requirements in NMED's Hazardous Waste Facility Permit, Part 2 and Attachment C, in order for this waste to be eligible for disposal at the WIPP facility. To date, it has not specifically been articulated how DOE Environmental Management will ensure compliance with the Permit's Waste Acceptance Criteria. DOE must engage with NMED to demonstrate such waste will meet the WIPP Waste Acceptance Criteria." [54]

The draft Pit Production PEIS must fully explain and justify how the NNSA is addressing these additional NMED WIPP-related issues.

Cost of plutonium pit production

According to the Government Accountability Office, the NNSA has no credible cost estimates for expanded plutonium pit production, its most complex and expansive program ever. Why? This is particularly egregious when DOE and the NNSA (and its predecessors) have been on the GAO's "High Risk List" for project mismanagement and waste of taxpayers' dollars since 1991.

The MOX Fuel Fabrication Facility (MFFF) at SRS cost American taxpayers ~$7 billion for nothing. NNSA's repurposing it into the Savannah River Plutonium Processing Facility was originally estimated to cost $4.1 billion and is now $11 billion and climbing. Hot operations are not expected to begin until the mid-2030s. So, what is LANL's congressionally required plan for picking up the slack from the Savannah River Plutonium Processing Facility in the event of continuing delays?

NNSA's original cost estimates in 2018 for expanded plutonium pit production over 30 years was $43 billion. With typical costs overruns, we are now betting that pit production will cost at least $60 billion over the next 25 years. And yet another issue that would help to solidify estimated costs for pit production is that NNSA must develop an Integrated Master Schedule between the programmatic sites, which GAO has long advocated for.[55]

In March we met with high-level NNSA officials in Washington, DC. One of them mentioned that the Uranium Processing Facility was one of the agency's best projects. We burst out in spontaneous laughter, after which the NNSA official sheepishly said that it's all relative.

Yes, it's relative all right. UPF is one of NNSA's "best" projects after it was stripped of all non-production missions, rebaselined twice, nevertheless busted its promised $6.5 billion budget cap, and three old contaminated facilities that the UPF was supposed to replace are now expected to continue operations into the 2040s.

NNSA drastically needs to clean up its fiscal house and finally produce credible cost estimates. In our opinion, when the Department of Energy doesn't want to do something, it highballs the cost estimates. When it wants to do something, it intentionally lowballs cost estimates to suck

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[54] NMED, October 22, 2020, https://www.env.nm.gov/wp-content/uploads/2020/05/2020-10-22-NMED-SRS-CAB-Comments-Final.pdf

[55] See Nuclear Weapons: NNSA Should Further Develop Cost, Schedule, and Risk Information for the W87-1 Warhead Program, GAO, September 2020, at https://www.gao.gov/products/gao-20-703

Congress into appropriations. This does a real disservice to the American taxpayer. We can rattle off a dozen DOE/NNSA projects and programs that have exceeded initial cost estimates by an order of magnitude.

Even if one is in favor of pit production, there is no need to rush it before NNSA gets it right. Media has recently reported that the new Sentinel intercontinental ballistic missile is being seriously delayed because of drastically increasing costs.[56] LANL's planned new pits are for the W87-1 warhead for the Sentinel ICBM. The draft Pit Production PEIS should analyze slowing down planned pit production even beyond the delays it is already experiencing with a focus on resolving all the issues brought up in these comments and more.

DOE Secretary Chris Wright is reported to have said, "We've built one [pit] in the last 25 years, and we'll build more than 100 during the Trump administration." First, he is incorrect because LANL produced 29 W88 pits during 2007-2011 to complete the production run that was abruptly halted by the 1989 FBI raid investigating environmental crimes at the Rocky Flats Plant near Denver.

But the relevant point here is that DOE Secretary Wright said 100 pits will be manufactured during the Trump Administration, which assuming no unconstitutional third term would end January 20, 2029. Acting NNSA Administrator Teresa Robbins stated in January that LANL would have the "capability" to make 30 pits per year "in or near 2028." [57] The Savannah River Site won't be able to produce new pits until the mid-2030s. It is almost impossible that LANL could produce 100 pits in that brief time. Nevertheless, the Pit Production PEIS should explain and provide comprehensive background on the DOE Secretary's projection and justify how that can be safely done.

Indications are that just preparing facilities for plutonium pit production at LANL will cost $25 billion and at SRS up to $30 billion, without including actual production. Nor can we be confident that this includes all related costs by any means. It definitely does not include related programmatic costs at the Lawrence Livermore National Laboratory, Nevada National Security Site and the Kansas City National Security Complex.

DOE and NNSA have a long history of not discussing costs in NEPA processes. However, in our view, it is imperative that the draft Pit Production PEIS discusses costs because they may well drag the entire program down, if not terminate major portions of it (for example pit production at the Savannah River Site).

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[56] gulfnews.com/world/americas/extending-1970s-era-icbms-until-2050-weighed-by-us-air-force-1.500074346

[57] *EnergySec tells Fox News he wants to build 'more than 100' pits*, Exchange Monitor, April 4, 2025 https://www.exchangemonitor.com/energysec-tells-fox-news-he-wants-to-build-more-than-100-pits-2/

Worker and Public Safety and the Defense Nuclear Facilities Safety Board

The Defense Nuclear Facilities Safety Board, whose access and functionality the DOE and NNSA have repeatedly tried to hinder, has been indispensable in its reporting on nuclear safety incidences across the nuclear weapons complex.

NNSA calculated potential doses to workers and the public are inevitably orders of magnitude lower than those calculated by the independent Safety Board (some of which are lethal doses).[58] This is of natural concern because as the draft LANL SWEIS stated, "Under normal operations, public radiation doses would occur from airborne releases from continued operations." (Volume 1, PDF page 323). Those public radiation doses are bound to increase with expanded plutonium pit production.

In one particular case of high potential doses to the public:

> "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 conservatisms 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." [59]

Thus, clearly NNSA is more than willing to risk the health and well-being of its workers and the public in pursuit of its missions, and plutonium pit production is its declared number one mission. Risk analysis is at the heart of NEPA. This mismatch between the NNSA's and the Safety Board's potential dose calculations urgently needs to be reconciled in the draft Pit Production PEIS.

LANL's chronic history of nuclear safety incidences need analysis and resolution before expanding plutonium pit production. These concerns are serious enough that major operations at LANL's main plutonium facility (PF-4) were halted for more than three years, yet nuclear safety incidences still occur. Further, a Defense Nuclear Facilities Safety Board report noted that approximately one third of Lab criticality evaluations reviewed were noncompliant with analysis and documentation requirements defined in DOE-STD-3007. The impacts of and rigorous avoidance of criticality accidents must be analyzed in the draft PEIS.

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[58] See Table 1, page 10 of the Defense Nuclear Facilities Safety Board's report *Potential Energetic Chemical Reaction Events Involving Transuranic Waste at Los Alamos National Laboratory* at https://www.dnfsb.gov/documents/reports/technical-reports/potential-energetic-chemical-reaction-events-involving It gives lethal potential occupational doses of 760 rem and public doses of up to 24 rem.

[59] *Los Alamos Activity Report for Week Ending April 1, 2022*, DNFSB, https://www.dnfsb.gov/sites/default/files/document/25541/Los%20Alamos%20Week%20Ending%20April%201%202022.pdf Parentheses in the original.

The long track record of chronic nuclear criticality incidences at LANL has become publicly known primarily through the reporting of the Defense Nuclear Facilities Safety Board (DNFSB). In what was arguably an attempt to kill the messenger DOE issued its Order 140.1 *Interface with the Defense Nuclear Facilities Safety Board*.

As the Board itself observed:

> "…DOE Order 140.1*, Interface with the Defense Nuclear Facilities Safety Board*, issued in May 2018, threatens to undermine the Board's ability to execute its statutory mission under the Atomic Energy Act. DOE Order 140.1 improperly attempts to diminish the Board's statutory mandate in four principal ways, all of which are inconsistent with the text of the Atomic Energy Act:
> • The Order contains a narrow definition of "Public Health and Safety," which only includes individuals located outside of DOE site boundaries (i.e., excluding onsite individuals and workers);
> • The Order provides exemptions allowing DOE and contractors to not provide access to facilities that DOE determines do not have the potential to adversely affect public health and safety, which could limit Board oversight at many defense nuclear facilities;
> • The Order lacks a clear provision to provide the Board with ready access to such information, facilities, and personnel as the Board considers necessary to carry out its responsibilities; and
> • The Order provides an allowance for DOE to deny Board requests for relevant deliberative and pre-decisional information."

The last point in particular strikes at the heart of potential risks that the public may be exposed to by expanded plutonium pit production at both LANL and SRS. The Safety Board is the only independent entity that can review and comment on NNSA facility planning before those plans are made final. The DOE attempt to bar the DNFSB from ostensibly "deliberative and pre-decisional information"—apparently designated as such unilaterally by DOE without any prospect for appeal or review—could directly lead to pit production facilities lacking the safety provisions and requirements that would make the public safer.

Fortunately, in the face of public and congressional pressure, DOE rescinded Order 140.1. But this bears remembering as the NNSA aggressively expands plutonium pit production and the Safety Board faces possible cutbacks.

DOE/NNSA's degradation of safety even as it plans to ramp up plutonium pit production appears to be systematic. As the Safety Board noted:

> "DOE has begun the process to revise 10 CFR Part 830, *Nuclear Safety Management*, which has served as the cornerstone of its regulatory framework to ensure adequate protection of public health and safety… Overall, the Board is concerned that the proposed revision to 10 CFR Part 830 will make it more difficult for the Department to exercise consistent oversight across the complex and loosens requirements upon which DOE and the public rely to ensure adequate protection of public health and safety. The Board identified concerns with DOE's proposal to remove the requirement for DOE to annually review and approve changes to documented safety

> analyses. The Board found that DOE's proposed change, if implemented, created a potential for the safety basis and facility operations to drift outside the envelope approved by DOE." [60]

This is again directly relevant to the risks posed to the public by plutonium pit production at both LANL and SRS. LANL's PF-4 has long had a bad track record of insufficient and/or outdated safety bases. The removal of the requirement to annually review and approve changes could directly threaten the public. In short, the draft Pit Production PEIS needs to fully review the risks posed by plutonium pit production to the public by apparent systemic attempts by DOE to degrade institutional safety and independent review of safety.

A 2009 DNFSB recommendation stated:

> "Consistent with the Board's Recommendation 2004-2, Active Confinement Systems, one long-term strategy that could provide effective mitigation for seismic events involves upgrading the facility's confinement ventilation system to meet seismic performance category 3 criteria. This strategy would allow the confinement ventilation system to reduce reliably the consequences of a seismically induced event by many orders of magnitude to acceptably low values." [61]

In March 2022, NNSA stated that they are no longer pursuing a safety class active confinement system at PF-4.[62] Basically, active confinement systems would automatically close doors and turn off, or on, exhaust fans during an accident. This would contain the radiologic materials, such as plutonium, in PF-4. This discussion between the DNFSB and DOE has been going on for over a decade. The draft Pit Production PEIS must analyze the potential impacts of the Lab not installing active confinement at PF-4.

As the Defense Nuclear Facilities Safety Board (DNFSB) noted in its required 2018 annual report to Congress:

> "Nuclear Criticality Safety at Los Alamos National Laboratory (LANL)—Based on an evaluation of the LANL nuclear criticality safety program, the Board in its November 28, 2018, letter to the Secretary of Energy, identified the following related to this vitally important safety program: (1) lack of concrete milestones in corrective action initiatives for weaknesses in the program; (2) inadequate staffing in the nuclear criticality safety division; (3) inadequate documentation for daily work activities with the potential to impact nuclear criticality safety; (4) instances of poor operational quality in implementing nuclear criticality safety requirements; and (5) repetitive, ineffective corrective actions for weaknesses in the program." [63]

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60 Defense Nuclear Facilities Safety Board 29th Annual Report to Congress, April 2019, p. ii, https://www.dnfsb.gov/sites/default/files/document/17791/2018%20Annual%20Report%20to%20Congress%20%5B2019-100-017%5D.pdf

61 Recommendation 2009-2, DNFSB, https://www.dnfsb.gov/sites/default/files/document/10377/rec_2009-2_32.pdf

62 See *Los Alamos Activity Report for Week Ending April 1, 2022*, DNFSB, https://www.dnfsb.gov/sites/default/files/document/25541/Los%20Alamos%20Week%20Ending%20April%201%202022.pdf

63 Defense Nuclear Facilities Safety Board 29th Annual Report to Congress, April 2019, p. ii, https://www.dnfsb.gov/sites/default/files/document/17791/2018%20Annual%20Report%20to%20Congress%20%5B2019-100-017%5D.pdf

We contend that the draft Pit Production PEIS must analyze the occupational and public risks of repeated, chronic nuclear criticality safety incidences at LANL and how to resolve them. And any lessons learned should be applied to pit production at the Savannah River Site as well.

We excerpt the following passages from the DNFSB's March 2024 Report to Congress:

> "The Board is concerned that DOE's planned and completed actions will not be sufficient to drive necessary safety improvements to the requirements and processes that ensure safe and effective management of decades-old defense nuclear facilities.
>
> *Onsite Transportation Safety*—The Board identified safety weaknesses in Los Alamos National Laboratory's (LANL) transportation safety document, stemming in part from weaknesses in the safe harbors that govern transportation safety document development under 10 CFR 830, *Nuclear Safety Management*.
>
> *Los Alamos National Laboratory Plutonium Facility Safety Posture*—NNSA is working to improve the safety basis and engineered safety systems for the LANL Plutonium Facility to support the facility's increased mission scope...The Board is using this information to evaluate the assumptions that underpin NNSA's passive confinement strategy for the facility, the functional requirements of the facility fire suppression system, and the design and performance requirements for the facility's confinement ventilation system.
>
> In a January 19, 2024, letter, the Board noted that, while LANL has implemented several notable process upgrades that reduce the risk of radiological releases caused by adverse chemical reactions in transuranic waste, LANL still has not defined how the chemical compatibility program will interface with the nuclear safety bases of its facilities. Further, the Board noted opportunities for improvement within the chemical compatibility program.
>
> *Criticality Safety*
> Over the last several years, the Board has observed persistent criticality safety staffing challenges and increased significance of criticality safety infractions." [64]

In response to "Criticality Safety," the draft LANL SWEIS stated:

> "... In response to the DNFSB, DOE took actions to address the criticality safety concerns. Corrective actions include revising the Nuclear Criticality Safety Program. In addition, the Laboratory conducted a causal analysis of criticality safety infractions that occurred in 2013 and submitted a plan to DOE for reopening PF-4 for operations. The Laboratory incorporated corrective actions from prior assessments into the 2014 *Nuclear Criticality Safety Program Upgrades Project Management Plan* (LANL 2014a). Full operations, including pit manufacturing, resumed at PF-4 in August 2016. In NNSA's January 2023 annual report to the DNFSB (NNSA 2023c) regarding DOE nuclear criticality safety programs, LANL's "program health" and "operational implementation" were both assessed to be "good." In a letter in August 2023, DNFSB acknowledged that the Laboratory completed a probabilistic risk analysis and concluded that the seismic safety risk of PF-4 is acceptable until the site-specific probabilistic

[64] *Defense Nuclear Facilities Safety Board 34th Annual Report to Congress*, https://www.dnfsb.gov/sites/default/files/document/30216/DNFSB%2034th%20Annual%20Report%20to%20Congress_0.pdf

> seismic hazard analysis is updated in 2025. DNFSB found that NNSA's conclusion was technically defensible and that the accompanying peer review process was robust (DNFSB 2023). (Volume 2, PDF page 44 & 45)

Note that DNFSB "concluded that the seismic safety risk of PF-4 is acceptable until the site-specific probabilistic seismic hazard analysis is updated in 2025." The last site-specific probabilistic seismic hazard analysis was completed in 2009 and must be completed in advance of this draft PEIS. This is crucial information that is missing in what should be NEPA's required "hard look" at potential risks.

The "increased significance of criticality safety infractions" is concerning. Their frequency and significance may well (or is even likely to) increase as LANL tries to speed up expanded plutonium pit production. We are also concerned with "persistent criticality safety staffing challenges" that we address more in our comment section *Essential vs Non-Essential DOE Personnel*.

As previously stated, the Defense Nuclear Facilities Safety Board has been indispensable in reporting nuclear safety incidences across the nuclear weapons complex. Now the very survival of the Safety Board is imperiled. In October 2025 one of the two remaining Board Members terms out, leaving the Safety Board without a functioning quorum unless a new member is nominated and confirmed. That is growing increasingly unlikely. The pending draft PEIS first needs to thoroughly analyze how LANL's chronic track record of nuclear safety incidences can be fully resolved. Secondly, it needs to analyze how needed improvements in the future would be discouraged and/or prevented in the event that the Defense Nuclear Facilities Safety Board ceases to function.

Further, in its own interests and for its own good, NNSA should encourage nominations and confirmations to the Board. After all, it would take only one major accident in NNSA's nuclear weapons complex to radically change political and popular support for it. The Safety Board is important insurance that could help prevent a major accident.

According to the Government Accountability Office, the NNSA has no credible cost estimates for expanded plutonium pit production, its most complex and expansive program ever. Nor does it have an "Integrated Master Schedule" for its multi-site program. Why? This is particularly egregious when DOE and the NNSA (and its predecessors) have been on the GAO's "High Risk List" for project mismanagement and waste of taxpayers' dollars since 1991.

Environmental Justice Issues

The draft LANL SWEIS stated:

> Under EO [Executive Order] 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," 37 federal agencies are responsible for identifying and addressing the possibility of disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations (59 FR 7629, February 16, 1994)...

> Regardless of alternatives considered in this SWEIS, DOE will continue to implement its environmental justice requirements and obligations in accordance with DOE's trust responsibilities to tribal nations, EOs on environmental justice; [and] guidance from the CEQ [Council on Environmental Quality]...
>
> • Protecting tribal people and their resources—land, air, water, vegetation, wildlife and fisheries—from DOE actions that could harm their health, safety, or sustainability.
> • Protecting "reserved" rights (such as hunting and fishing rights that were specified in treaties as retained or reserved even though the lands are not part of the reservation).
> • Protecting Indian cultural and religious artifacts and sites on land now managed by DOE, and avoiding any unnecessary interference with traditional religious practices, which includes providing appropriate access to sacred sites on DOE lands.
> • Protecting the sovereignty of tribal governments.
>
> ... LANL shares a property boundary with the Pueblo de San Ildefonso—one of several sovereign federally recognized tribes with a government-to-government relationship with DOE. Other federally recognized tribes within the ROI [LANL's "Region of Influence"] include portions or entireties of the Pueblos of Cochiti, Jemez, Nambé, Ohkay Owingeh, Picuris, Pojoaque, Sandia, Santa Ana, Santa Clara, San Felipe, Santo Domingo, Taos, Tesuque, Zia, and a portion of the Jicarilla Apache Indian Reservation. (Volume 1, PDF pages 241-242)

In his second day in office, Trump wasted no time in revoking Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," under the rubric of "Ending Illegal Discrimination and Restoring Merit-Based Opportunity."

The question then becomes will DOE "continue to implement its environmental justice requirements and obligations in accordance with DOE's trust responsibilities to tribal nations"? Will environmental justice language be absent in the draft Pit Production PEIS? If so, how will DOE and NNSA communicate this to the affected Tribes? More seriously, what are the substantive impacts to the Tribes of any deletion, in whole or part, of environmental justice issues? And how will this impact DOE/NNSA relations with the Tribes? Will there be legal ramifications in the event that environmental justice issues are absent in the final Pit Production PEIS?

Seismic Issues

NNSA must have current seismic studies at all relevant sites incorporated into the draft Pit Production PEIS, especially the Los Alamos and Lawrence Livermore National Laboratories.

A recent report analyzing the Pajarito Fault System under Los Alamos states:

> "The subsurface geology beneath the Pajarito Plateau is critical to understanding the seismic hazard of the Pajarito Fault System, yet our understanding of this geology is relatively poor. While previous 3D geologic framework models of the area have been created for the purposes of

understanding hydrogeologic flow, they are inadequate for the purposes of understanding the Pajarito Fault System."[65]

DOE requires a site-specific Probabilistic Seismic Hazard Analysis (PSHA) for the design of certain seismic design category facilities. In 2007, a comprehensive update to the 1995 seismic hazard analysis of LANL was completed and incorporated into the 2008 SWEIS analysis. The comprehensive 2007 update indicated that the seismic hazard was higher than previously understood from the initial 1995 PSHA. The 2007 seismic hazard study was updated in 2009 to incorporate a new set of ground motion attenuation relationships and to examine potential conservatism in the 2007 study. LANL is currently engaged in an update to the 2007 PSHA, which is scheduled for tardy, delayed completion in 2025.

The PSHA process uses information available to the US Geologic Survey, but also incorporates more detailed, site-specific geologic, geophysical, and geotechnical information to determine seismic hazard curves. Site-specific seismic hazard analysis at LANL estimated horizontal and vertical PGAs. Until an updated LANL sitewide PSHA is completed, seismic safety designs are based on information from the 2007 LANL PSHA and subsequent 2009 update.

The public did not get a chance to comment on the implications of an updated PSHA for the draft LANL SWEIS, which is a serious deficiency. NNSA should make LANL stop its foot dragging and get the final PSHA completed. Comprehensively updated PSHAs for both the Los Alamos and Livermore Labs must be incorporated into the draft Pit Production PEIS for that document to have credible risk analyses.

NNSA Must Prepare a New Site-Wide Environmental Impact Statement for the Pantex Plant

We warned NNSA beginning in October 2018 that it must complete a Pit Production PEIS. Here, in these PEIS scoping comments, we are warning NNSA that in addition to the fact that pit reuse and Pantex's Pit Requalification Facility must be extensively discussed and analyzed, that the agency needs to complete a new Site-Wide Environmental Impact Statement (SWEIS) for its Pantex Plant.

In January 1997, DOE published a Record of Decision in the Federal Register (62 FR 3880), announcing its decision to implement the Preferred Alternative evaluated in the Pantex Site-Wide Environmental Impact Statement (SWEIS) by:

> "(1) continuing nuclear weapon operations involving assembly and disassembly of nuclear weapons at the Pantex Plant; (2) implementing facility projects, including upgrades and construction consistent with conducting these operations; and (3) continuing to provide interim

[65] 3D Geologic Framework Modelling of the Los Alamos National Laboratory Site and Pajarito Plateau: Integrating a realistic 3D fault network and modelling subsurface relationships in a sparsely sampled and complex geologic region, LA-UR-24-31214, 2024-10-16, https://www.osti.gov/search/semantic:LA-UR-24-31214

> pit storage at the Pantex Plant and increasing the storage level from 12,000 to 20,000 pits." (DOE/EIS-0225; DOE 1996a)

Outside of the Pit Production PEIS, the possible impacts of pit reuse must be analyzed in a new Pantex SWEIS. If pit reuse is not analyzed, then permanent disposal of the up to 20,000 pits at Pantex must be analyzed. Pit storage can no longer be considered "interim."

Four Supplement Analyses (SAs) for the Pantex SWEIS have been completed since the issuance of the 1997 ROD: (1) 2003 SA, approved on March 10, 2003; (2) 2008 SA, approved on January 14, 2009; (3) 2013 SA, approved on January 28, 2013; and (4) 2018 SA, approved on July 18, 2018. The analyses in these four SAs indicated that the identified and projected impacts for all areas were not substantially changed from those identified in the 1996 SWEIS, nor did they represent significant, new circumstances or information relative to environmental concerns. So, NNSA issued determinations that there was no need to supplement the SWEIS or to prepare a new SWEIS for the Pantex Plant. DOE claims that the fourth five-year update of the 1996 SWEIS, fulfills DOE/NNSA's requirement to review the SWEIS at least every five years as required by 10 CFR §1021.330(d).

The 1996 SWEIS assessed impacts on areas of the human and natural environment potentially affected by operations performed at Pantex. The Pantex SWEIS evaluated activities associated with ongoing operations, including onsite nuclear material storage, transportation of nuclear material to an alternate site for interim storage, and transportation of classified components between the Pantex Plant and other sites occurring over a period of approximately 10 years, from 1996 through 2006. The analysis assumed that production (the combined activities of assembly, disassembly, and modifications) would not exceed 2,000 weapons per year and assessed the impacts of activity levels required to produce 2,000, 1,000, and 500 weapons per year.

DOE must analyze if the combined activities of assembly, disassembly, and modifications including expanded pit production will exceed the 2,000 weapons per year limit.

It's been nearly 30 years since the last full-on Pantex SWEIS. Since that time, in addition to radically increased nuclear weapons assembly and decreased dismantlement missions, there was a "1,000 year" flood in 2011 and a wildfire in 2023 that forced a temporary evacuation of the Plant. It's been way too long to continue relying upon a 30-year old SWEIS when clearly there is new information and substantially changed circumstances.

All reference documents must be readily available

Over 20% of listed reference documents in the January 2025 draft LANL Site-Wide Environmental Impact Statement (SWEIS) were not available. Many links were entirely absent, many were "404: Page Not Found," a number of documents required purchase, and many required a Freedom of Information Act request for which the NNSA can take years to honor. This is inexcusable in the modern information age and is a serious impediment to the serious researcher and commenter. As such, all unclassified reference documents in the draft Pit Production PEIS, and, for that matter, all NNSA NEPA processes, should be readily online for the public, with classified supporting documents (if any) noted as such.

Moreover, we have been saying this directly to NNSA since the 2008 LANL Site-Wide Environmental Impact Statement (SWEIS) process. It is way past time for the agency to correct this.

These comments are also available online at https://nukewatch.org/nwnm-pit-peis-scoping-comments-7-14-25/

Sincerely,

Jay Coghlan, Executive Director
Scott Kovac, Research Director,
Sophia Stroud, Communications Director