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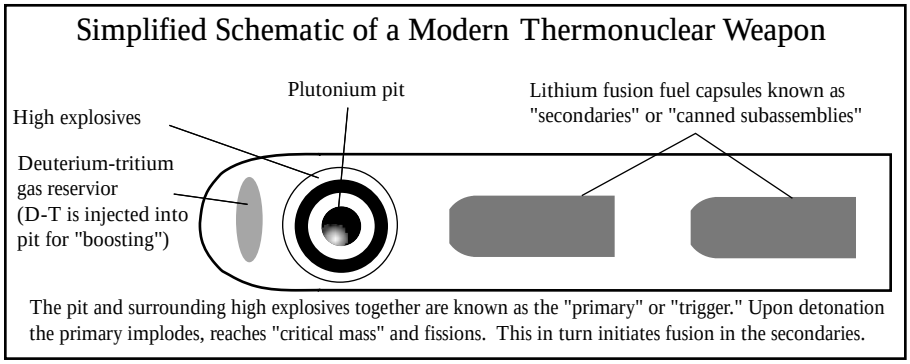
The Modern Pit Facility: Talking Points on the New Bomb Factory

On September 16, 2002, the National Nuclear Security Administration (NNSA), the semi-autonomous nuclear weapons agency within the Department of Energy (DOE), formally announced its intent to build a "Modern Pit Facility." Plutonium pits, in combination with high explosives, are the primaries or "triggers" for modern thermonuclear weapons. They are *the* essential component, roughly analagous to a car engine. They are also atomic weapons in their own right, as the destruction of Nagasaki demonstrated. Under the National Environmental Policy Act (NEPA) federal agencies are required to complete environmental impact statements for proposed major federal actions. Similarly, they are required to complete programmatic environmental impact statements (PEISs) for new proposed programs. In 1996, DOE issued a PEIS for its so-called Stockpile Stewardship Program that largely reconfigured the post-Cold War nuclear weapons complex. As the result of subsequent citizen litigation, DOE is required to prepare a supplemental PEIS if it seeks to expand plutonium pit production beyond that contemplated in 1996 (up to 80 pits per year), which the NNSA is doing with its Modern Pit Facility (MPF) proposal. A draft supplemental PEIS was released on May 30, 2003, in which **the NNSA decided to proceed with the MPF, but deferred a decision on its location.** These Talking Points are meant to assist citizens in oral testimony at hearings and written comments on the draft supplemental PEIS (please see schedules on page 3).



General Points

• **Five DOE sites, the Los Alamos National Laboratory (LANL) and the Waste Isolation Pilot Plant (WIPP) in New Mexico, the Nevada Test Site, the Pantex Plant in Texas and the Savannah River Site (SRS) in South Carolina, are candidate sites.** Of these, SRS (because of its existing plutonium infrastructure) and WIPP (because of Senator Domenici's (R.-NM) influence) are considered the most likely locations. However, the NNSA's failure thus far to pick a site could induce political and economic competition for the MPF. Therefore, citizens should demand a full range of discussion on all five sites.

• The DOE lost stockpile pit production capability after a 1989 FBI raid investigating environmental crimes at the Rocky Flats Plant near Denver. Now **the NNSA is making sensational and alarming statements to Congress** such as: "The United States is the only nuclear power without the capability to manufacture a plutonium pit." This statement is false. LANL has always had the capability to produce plutonium pits for nuclear weapons R&D. Further, stockpile production capable of up to 80 pits a year is being re-established there. **The NNSA needs to fully explain why that level of production is not sufficient for maintaining a nuclear arsenal that is being downsized.**

• A NNSA spokesman has made the outrageous claim that due to potential aging effects the U.S. could lose half of its nuclear weapons stockpile overnight. Under questioning, **the NNSA now officially states that age-induced effects affecting safety, reliability and performance have never been found in pits**

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up to 42 years old (the average age of pits in the deployed stockpile is 19 years). Some recent studies have suggested that pits can last a minimum of 50 to 60 years with the upper end as yet unbounded (for more please see the back page).

• The NNSA's official justification for the MPF is that "classified analyses indicate that the [pit production] capacity being established at LANL will not support either the projected capacity requirements (the number of pits to be produced over a period of time)… or the flexibility *to produce pits of a new design in a timely manner…"* **Both points are gravely misguided and the analyses are hidden from the public.**

Capacity

• In the mid-1990's the stated rationale for resumed pit production was to replace the small number of pits destroyed during routine stockpile evaluation tests. More recently the 2002 Department of Defense's Nuclear Posture Review (NPR) calls for a "responsive defense structure" with the capabilities to **"upgrade existing weapons, [for] surge production of weapons, or … if directed, to design, develop, manufacture, and certify new warheads in response to new national requirements…" The NPR explicitly calls for the construction of the Modern Pit Facility, which will be capable of producing up to 500 pits per year, approaching Cold War rates!** With the demise of the Soviet Union, this amount of capacity is simply not needed, except to support the NPR's regressive policies of an increasing reliance on nuclear weapons and the broadening of potential nuclear targets from two countries to seven.

• The recent Bush/Putin Strategic Offensive Reduction Treaty (AKA the "Moscow Treaty") states that both Russia and the U.S. will reduce their strategic nuclear arsenals from around 10,000 deployed warheads to 2,200 or under by 2013. Further, the U.S. already has an estimated 5,000 pits in "strategic reserve" and over 12,000 "surplus" stored at the Pantex Plant. Moreover, LANL is re-establishing a pit production capability that could produce up to 80 pits per year. **What then is the need for the Modern Pit Facility, especially when there are no plans to destroy the pits in presently deployed warheads and in light of a sufficient production capacity being re-established at LANL?**

Flexibility

• That the U.S. is on a path that could lead to the production of new-design nuclear weapons is no longer a question. **Both the House and Senate have recently approved funding for a "Robust Nuclear Earth Penetrator" and overturned the decade-old prohibition against the development of low-yield battlefield weapons ("mininukes").** For now, the NNSA will likely employ modified existing pits for the earth-penetrator, but it is also unquestionably preparing the production capacity for new-design pits for new-design nuclear weapons.

• Los Alamos, the weapons lab in charge of pit production, formally declared three years ago that the "target" of current pit production efforts is to "re-establish a robust manufacturing capability to produce stockpiled and *new-design pits without underground testing.*" Therefore, **the MPF will likely produce new nuclear weapons in spite of the stated intent of the Comprehensive Test Ban Treaty** (observed, but not ratified by the U.S.) **to cut off the further advancement of nuclear weapons**. Conversely, if new U.S. nuclear weapons with new-design pits are produced the Pentagon may not be willing to deploy them without testing, thus possibly prompting the U.S. to terminate observance of the CTBT and resume full-scale testing.

• **The MPF will also violate the 1970 NonProliferation Treaty's (NPT's) mandate for nuclear disarmament**, recognized in 1996 by the World Court as **an obligation requiring the conclusion of dis-**

armament negotiations and re-pledged to in 2000 by the U.S. as an "**unequivocal commitment**." **There can hardly be a more concrete demonstration that the U.S. never intends to honor its NPT obligation to disarm its nuclear stockpile under multilateral nonproliferation agreements than to build and operate a new plutonium pit production super facility.**

- **Pit production is costly** even as the nation has returned to federal deficits and funding for domestic needs are being cut. Construction alone of the MPF is expected to cost up to more than $4 billion and does not include eventual decontamination, decommissioning and cleanup. Meanwhile, LANL will have spent billions in resuming pit production there (the first new stockpile pit in 2007 is expected to cost $1.5 billion). Citizens should demand that the entire programmatic costs of pit production be calculated, including related waste management and disposal. In the event that the present course of U.S. nuclear weapons programs (for which the MPF is to be the crucial future production facility) prompts a global arms race the costs are truly incalculable.

- **Plutonium pit production is inherently dangerous.** If inhaled, dust specks of plutonium can cause lung cancer. The Rocky Flats Plant had a horrible environmental record, replete with accidents that only by luck did not severely contaminate Denver. **Citizens should demand the most rigorous environmental and safety evaluations for all of the sites that are being considered.**

- SRS is preparing to build facilities that DOE claims will render excess weapons-grade plutonium into mixed-oxide (MOX) fuel for use in commercial nuclear reactors as a non-proliferation measure. Toward that end DOE has already moved up to 30 metric tons of plutonium to SRS. However, **these MOX facilities will likely have the capability to purify plutonium for military purposes as well**. Citizens should demand to know what links, if any, MOX facilities and the MPF at the Savannah River Site might have in common with each other.

- WIPP, as a radioactive waste disposal site, is currently barred from a military mission. **Citizens should demand to know how the 1992 WIPP Land Withdrawal Act could be repealed or amended to allow for such a mission**.

- **Citizens should demand that any summary of a classified appendix to the supplemental PEIS be comprehensive and that the full appendix, redacted as necessary, be available upon request.**

Conclusion

Under NEPA, federal agencies are required to analyze alternatives to their proposed actions, including a "**No Action Alternative**" (which, in this case, is limited pit production at LANL). Given the hollowness of the NNSA's proclaimed need and the MPF's long-reaching negative impacts, a decision to not build the facility is the appropriate alternative. **No Modern Pit Facility, No Where, No Way!!**

Hearings: Pantex Site: Thursday, June 26, 7:00 - 10:00 p.m., College Union Building, Oak Room, Amarillo College, Washington St. Campus, 24th & Jackson Streets, Amarillo, TX (806) 371-5100 **WIPP Site:** June 30, 6:00 - 10:00 p.m., DOE Carlsbad Office, 4021 National Parks Highway, Carlsbad, NM, (505) 234-7227 **Los Alamos Site:** July 1, 7:00 - 10:00 p.m., Cities of Gold Hotel, Highway 84/285, Pojoaque, NM (505) 455-0515 **Nevada Test Site:** July 2, 7:00 - 10:00 p.m., UNLV, Student Union Building, 4505 Maryland Parkway, Las Vegas, NV (702) 895-4449 **Savannah River Site:** July 7, 6:00 - 10:00 p.m., North Augusta Community Center, 495 Brookside Avenue, North Augusta, SC (803) 441-4290 **Washington, D.C.:** July 16, 10:00 a.m. - 1:00 p.m., U.S. DOE, 1000 Independence Ave., SW, Room 1E-245, (202) 586-5484. **Comments on the MPF** should be sent to Mr. Jay Rose, MPF Document Manager, DOE/NNSA, 1000 Independence Ave., Washington, DC 20585 by August 5, 2003 (or faxed to 202.586.5324 or e-mailed to James.Rose@nnsa.doe.gov). To download these Talking Points and for further information, including ready-to-send comments and Nuke Watch's comprehensive comments by July 21, please visit www.nukewatch.org or contact us via phone, letter or e-mail. June 2003

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A Short Primer on the Effects of Aging on Plutonium

While explaining the need for a new "Modern Pit Facility" DOE NNSA spokesman Wilkes said: "We know that plutonium pits have a limited lifetime." Without replacing the bombs, "we could wake up and find out half our stockpile is gone to waste." The Las Vegas Sun, September 27, 2002.

Plutonium pits are the triggers for modern nuclear weapons. The National Nuclear Security Administration (NNSA) is the aggressive, semi-autonomous nuclear weapons agency within the DOE. While seeking to advance the argument for building a "Modern Pit Facility" (MPF) capable of producing pits approaching Cold War rates the NNSA spokesman disingenuously raises the boogieman of pits turning into mush overnight. Carried to an extreme, this would then lead to *de facto* U.S. nuclear disarmament in a cruel and dangerous world. This is certainly not the case. The MPF's official notice itself states that "Although no such [plutonium pit aging] problems have been identified, the potential for such problems increases as pits age." While this statement seems intuitively logical at first, it cries for careful examination as 100's of billions of dollars and the true nature of the U.S.'s nuclear weapons programs ride on the answer. Is plutonium aging so fast that a new super pit production facility is needed? No!

Unfortunately the NNSA controls the debate on what plutonium aging effects might be. However, the following is publicly available from DOE documents and other sources indicating that plutonium-239 (the isotope used in nuclear weapons) is stable over many, many decades. First, it was declared in 1996 that "The [nuclear weapons] stockpile is currently judged to be safe and reliable by DOE." In all subsequent years the Los Alamos, Sandia and Lawrence Livermore National Laboratories have certified that the stockpile has remained safe and reliable. Potential future problems in nuclear weapons safety and reliability can be then divided into problems between nuclear and nonnuclear components. However, potential problems with nonnuclear components can be ruled out as not being germane to the core debate. For example, DOE has formally stated that "Over time, high confidence in the safety and reliability of nonnuclear components and subsystems can be established [through laboratory tests]."

Concerning the crucial nuclear part, the plutonium pit, DOE also stated in 1996 that "historical pit surveillance data and pit life studies do not predict a near-term problem." The Department went on to say "Most nuclear weapons in the stockpile were designed for a minimum lifetime of 20 years. However, experience indicates that weapons can remain in the stockpile well beyond their minimum design lifetime. Two nuclear weapon systems remained in the stockpile for more than 30 years." DOE further stated that "No age related problem has been observed in pits up to 30 years in age…" Additionally, with respect to the effects of radioactive decay impairing pit performance, DOE said that it "does not currently believe this will become a problem in less than 50 years." The NNSA now states in the MPF draft environmental impact statement that aging effects that impair safety and realibilty have never been observed in pits up to 42 years of age (the average pit age in the deployed stockpile is 19 years).

In December 2000 Raymond Jeanios (professor of geophysics at UC Berkeley) published an article entitled "Science-Based Stockpile Stewardship" in *Physics Today*. Some relevant quotes are: "Perhaps the most important result from measurements is that Pu [plutonium] exhibits good crystalline order even after decades of aging… Pu samples not only retain long-range order but actually get closer to the ideal crystal structure with increasing age… The high explosive used in US weapons has been found to improve systematically with age in key measures of performance… 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."

The reason that plutonium-239 does not age quickly is inherent to that isotope. J. Carson Mark, former head of Los Alamos National Laboratory's Theoretical Division (and an ardent arms control advocate later in life) stated that the lab had the foresight some four decades ago to set aside weapons-grade plutonium-239 for the express purpose of studying aging effects. While pointing to Pu-239's long half-life (approximately 24,000 years), he said that the big news was "no news," that is there were no appreciable aging effects. By way of explanation, an isotope with a shorter half-life would be more intensely radioactive and thus decay or "age" faster (for example, plutonium-238 has a half-life of 87.7 years).

The ultimate point of this primer is that any attempt to use the specter of near-term aging effects on plutonium-239 as justification for the Modern Pit Facility is false and misleading. One has to look elsewhere for the true reasons why the NNSA wants the MPF. We believe that the answer lies in the major refurbishments, alterations and possible new designs for nuclear weapons that the NNSA is implementing under the regressive policies of the new Nuclear Posture Review and recently approved by Congress (for more please see our *NPR Special Bulletin* at www.nukewatch.org/facts).

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