nuclear watch new mexico

Scoping Comments to the National Nuclear Security Administration on the Supplemental Programmatic Environmental Impact Statement On Stockpile Stewardship and Management for a Modern Pit Facility

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Dear Mr. Rose:

Nuclear Watch of New Mexico (NWNM) is pleased to submit the following scoping comments on the National Nuclear Security Administration's (NNSA's) Supplemental Programmatic Environmental Impact Statement on Stockpile Stewardship and Management for a Modern Pit Facility.

Potential Impacts on Nonproliferation Treaties

It is ironic that the United States government is pressuring other nations to refrain from developing nuclear weapons even as it spends billions of dollars to modernize its own nuclear arsenal. Throughout the summer, high-level U.S officials met with Indian and Pakistani officials with the objective of persuading them that the threat or use of nuclear weapons should not be considered in their conflict over Kashmir and Jammu. U.S. officials have pressured North Korea and Iran to abandon their secret nuclear weapons programs. Now the Bush Administration is threatening a preemptive attack on Iraq if Saddam Hussein doesn't relinquish his reputed weapons of mass destruction programs. Simultaneously, the Department of Energy and the Department of Defense have implemented both a fundamental change in national security policy that moves us from a position of declared deterrence to one of preemptive strikes if unilaterally deemed necessary, and a colossal US nuclear weapons modernization plan that includes:

- The expansion of potential nuclear targeting from Russia and China to also include North Korea, Iraq, Iran, Syria and Libya and even undefined "surprising military developments."
- Potentially destabilizing "active and passive defenses" in the form of a National Missile Defense that others could view as an attempt to undermine their own deterrent strategic nuclear forces. Related to this are new space-based surveillance and command and control capabilities directed at much of the

"survivable" Russian and Chinese nuclear forces. All of this can be plausibly construed as a precursor to the US militarization of space.

- So-called nuclear arms cuts between Russia and the U.S. that includes plans to simply switch nuclear weapons from an "operationally deployed force" to a "responsive force for potential contingencies." In other words, they will be held in an active reserve from which they can be readily redeployed. There is no true international accountability in this process.

- New Trident II missiles and extensive upgrades to hundreds of existing submarine-launched missiles, perhaps the most destabilizing nuclear weapons of all;

- The modernization of the Minuteman III intercontinental land-based missile force;

- Directives to all three nuclear weapons laboratories to work on "advanced warhead concepts," principally directed at defeating Hardened and Deeply Buried Targets and thereby seeking to authorize design, production and eventual deployment of a "Robust Nuclear Earth Penetrator;" and

- Finally, "a responsive defense structure" that is to explicitly have "[t]he capacity of the infrastructure to upgrade existing weapon systems, surge production of weapons, or develop and field entirely new systems for the New Triad… The need is clear for a revitalized nuclear weapons complex that will... be able, if directed, to design, develop, manufacture, and certify new warheads in response to new national requirements; and maintain readiness to resume underground nuclear testing if required… One glaring shortfall is the inability to fabricate and certify weapon primaries, or so-called 'pits'… For the long term a new modern production facility will be needed to deal with the large-scale replacement of components and new production."

Hence we come down to the question of the Modern Pit Facility (MPF). All of the preceding comments are meant to place the MPF within the context of the evolving (perhaps better said devolving) nuclear weapons policies that are now being implemented. All of these issues run counter to U.S. obligations and assurances under the Nonproliferation Treaty to end the nuclear arms race, irreversibly reduce its nuclear arsenal, and refrain from threatening non-nuclear states with nuclear attack (restated by the U.S. in 2000 as an "unequivocal commitment"). Further, the MPF is probably the singular project most likely to cause lasting damage to US nonproliferation goals. It will cause further damage to global nonproliferation interests because this proposed facility would likely:

1) Further undermine the intent of the Comprehensive Test Ban Treaty (CTBT) to cut off the further development of nuclear weapons through the MPF's stated objective of possibly producing new-design pits; or

2) In the event that the Pentagon would reject deploying already produced new-designs without full-scale testing, possibly prompt the U.S. to break out of observing the CTBT altogether.

Thus, the overarching question the "Supplemental Programmatic Environmental Impact Statement on Stockpile Stewardship and Management for a Modern Pit Facility" (hereinafter the "SPEIS") needs to address is the nonproliferation implications that construction and operation of this facility will likely bring. The National Nuclear Security Administration (NNSA) needs to seriously address this question and not just piously justify it through citation of this or that executive branch directive. How will construction and operation of the MPF really advance our national security interests, when it will arguably be the most concrete manifestation of the fact that the U.S. never intends to honor the obligation under the NPT to disarm its nuclear stockpiles, and further an intent to circumvent the intent of the CTBT or to abrogate its observance?

Potential Aging Effects on Plutonium

According to the September 27 *Las Vegas Sun*, while explaining the need for the Modern Pit Facility a NNSA spokesman made the outrageous claim that " '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.' " In this commentator's view, the rationale for the Stockpile Stewardship Program (and its associated tens of billions of dollars) largely hinges on the future effects of aging on plutonium-239. Also, in this commentator's view, DOE unfortunately controls the debate on what those aging effects might be, and will likely play up on any tiny degree of uncertainty in order to ensure the continuing flood of appropriations. If DOE were principled in this matter, it would disclose what is known to date and what can be reasonably projected on into the future. Further, because it has so much to do with the need and mission for the Modern Pit Facility the NNSA would disclose that information in the pending draft SPEIS.

This commentator has compiled the following from DOE documents and other sources indicating that plutonium-239 is stable over a long period of time. Therefore, the safety and reliability of the U.S. nuclear weapons stockpile is assured for the long-term, at a minimum for the next half-century.

As a baseline: "The stockpile is currently judged to be safe and reliable by DOE." (1996 Stockpile Stewardship and Management (SSM) PEIS Vol. I at p. 2-3). In all subsequent years the three lab directors have certified that the stockpile has remained safe and reliable. Potential future problems in nuclear weapons safety and reliability can then be divided into problems with nuclear and nonnuclear components. However, potential problems with nonnuclear components can be ruled out as not being germane to the core debate over the SSM Program. "For nonnuclear components, a significant amount of functional test data is acquired during manufacture and is then used to begin building a statistical estimate of component reliability. Subsequent laboratory and flight testing in the surveillance program accumulates additional data that include the effects of aging and exposure to stockpile environments. Thus, over time, high confidence in the safety and reliability of nonnuclear components and subsystems can be established." (SSM PEIS Summary, p. 19.)

The SSM PEIS goes on: "The situation is not the same for nuclear components and the assessment of their nuclear performance... In the past, [full-scale] nuclear testing filled the gaps in basic understanding of the complex physics phenomena; it provided high confidence in the certification of nuclear safety and performance. Without nuclear testing, science-based stockpile stewardship will focus on obtaining the more accurate scientific and experimental data that will be needed for more accurate computer simulations of nuclear performance." (Ibid.) Hence, the overarching justification for the SSM Program and the Modern Pit Facility lies in future uncertainty over aging effects on nuclear components, specifically the plutonium pit. However, language in supporting documents for the SSM PEIS indicates that there is little uncertainty for the foreseeable future.

For the SSM PEIS DOE prepared the *Stockpile Management Preferred Alternatives Report* and the *Analysis of Stockpile Management Alternatives Report*, both released in July 1996. Under "Capacity Assumptions and Contingency Options": "Only replacement of pits destroyed in routine surveillance testing is expected until a near term life limiting phenomenon is observed in stockpile pits. Most pit

requirements during weapon refurbishment are expected to be satisfied by requalification and reuse of existing pits *since historical pit surveillance data and pit life studies do not predict a near-term problem.*" (Stockpile Management Preferred Alternatives Report, July 1996, p.12. Emphasis added.)

"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." (Analysis of Stockpile Management Alternatives, July 1996, p. 7-8. Emphasis added.) Under "Primary [the nuclear package with high explosives] Requirements": "Known aging effects of high explosive components results in an estimated stockpile life of 30 to 40 years based on current understanding of high explosive aging." (Ibid., p. 7-11.)

"*No age related problem has been observed in pits up to 30 years in age*, though very little data exists for pits older than 25 years. In addition, no age related problem is expected until well past the START II [the second Strategic Arms Reduction Treaty] implementation date [year 2003]." (Ibid., p. 7-12.) Emphasis added. Under "Conclusion": "Nuclear components (pits and secondaries) are expected to have service lives significantly in excess of their minimum design life of twenty to twenty-five years." (Ibid., p. 7-17.)

Senior DOE officials have hinted that the buildup of helium gas as a result of plutonium decay could affect plutonium pit performance in the near term. Again, this is contradicted by PEIS language. During the SSM PEIS public comment period, a commentator asked, "How long can pits remain in the stockpile before buildup of decay products becomes a design or handling concern?" DOE responded: "Modern nuclear weapons are designed with a minimum design life of 20 to 25 years. Based on existing surveillance data, DOE expects the pits to last at least this long, and probably considerably longer. However, very little historical and applicable data exists beyond 30 years. *With regard to the buildup of decay products alone, DOE does not currently believe this will become a problem in less than 50 years...*" (SSM PEIS, Volume IV, p. 3-84. Emphasis added.)

Since the release of the SSM PEIS, Raymond Jeanios (Professor of Geophysics at the University of California Berkeley), published an article entitled "Science-Based Stockpile Stewardship" in *Physics Today*, December 2000. Some relevant quotes are:

> Perhaps the most important result from measurements is that Pu exhibits good crystalline order even after decades of aging.
>
> …on the nanometer scale, aging appears to have the same effect as a greater Ga [gallium] concentration, in that it shifts the Pu to a more stable configuration.
>
> The overall finding from a variety of observations… is that the Pu samples not only retain long-range order but actually get closer to the ideal crystal structure with increasing age. Annealing processes, perhaps related to those countering the crystal-structure disordering, appear to counteract radiation-induced damage and mitigate the initial buildup of He [helium] quite effectively, at least for Pu in the US stockpile.

> 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.

Another point concerning the future effects of aging on plutonium:
J. Carson Mark, former head of LANL's Theoretical Division (and an ardent arms control advocate), before his death personally told this commentator that the lab had the foresight some four decades ago to set aside weapons-grade Pu-239 for the express purpose of studying aging effects. Further, while pointing to Pu-239's long half-life (approximately 24,000 years), he stated that the big news was "no news." I subsequently requested from LANL data or conclusions from these "shelf life" experiments," but was denied on the basis of classification. Nevertheless, I reiterate here that those conclusions are germane to the need and mission for the Modern Pit Facility and should be generally disclosed in the draft SPEIS as part of the project's need and mission.

In addition, the Defense Nuclear Facilities Safety Board Report "Review of the Safety of Storing Plutonium Pits at the Pantex Plant" (November 25, 1997) states:

> The design agencies, Los Alamos National Laboratory (LANL) and Lawrence Livermore National Laboratory (LLNL), manage several programs that assess the condition of pits both in weapons and in storage containers at Pantex. The three key programs are… 2) the shelf-life program, involving pits representative of active weapons and strategic-reserve pits… The shelf-life testing program is intended to evaluate the stability of properly sealed pits for as long as they are representative of weapons programs in the active stockpile or the strategic reserve. About 80 pits are stored at LANL for this program. The pits are identical to actual weapons components, except for special tubing and valving added to facilitate routine gas sampling. As the name implies, the program allows these pits to age on the shelf, with periodic nondestructive testing to ensure that the gases inside the pit remain stable and the interior of the pit is not degrading… (DNFSB Technical Report 18, pp. 4-1 and 4-2.)

Thus, there is no question that these shelf-life experiments exist, and indications are that they have existed for some four decades. NNSA officials publicly made the claim at the October 24 MPF scoping hearing in Los Alamos that the agency has had no experience with pits 30 years in age and older. This is simply not true. NNSA should discuss and disclose in the SPEIS the general conclusions to date drawn from the shelf-life experiments and reasonable projections of the effects of aging on into the future. In the event that linear projections cannot be made there should be a full explanation of why. I can only note that when asked questions on these matters NNSA spokespeople at the Los Alamos hearing did not respond forthrightly and, in my view, were even evasive. There should be the fullest disclosure possible of the projected effects of aging on plutonium in the SPEIS as it is absolute-

ly central to the justification for the MPF. Otherwise, it would be self-serving for LANL and the NNSA to remain silent on this subject.

A final point concerning the future effects of aging on plutonium:
It was widely reported in regional media that LANL will be "spiking" Pu-239 with Pu-238 (half-life approximately 88 years) in order to achieve accelerated aging effects. The draft SPEIS should address these experiments, in part to explain why the experiments would be truly valid. Can the data really be applied to the future safety and reliability of Pu-239 pits? If these experiments are indeed conceptually credible, what is the proper blend with Pu-238 that would assure valid results? As a heavy gamma emitter, how is it that Pu-238 wouldn't skew data results? How long of a performance baseline is the NNSA attempting to establish for plutonium pits? A half century (when, given the referenced quotes above, that already seems pretty well assured)? A full 100 years? Would the NNSA purposively reach for such a lengthy performance baseline that it would be impossible to offer guarantees of safety and reliability? What or who is to ensure the objective and dispassionate analyses of and resulting conclusions from the data, when ultimately 10's or 100's of billions of dollars are in the balance for the Stockpile Stewardship Program?

Deployed Pits and Pits in Strategic Reserve or Declared Excess

Since 1989 when pit production was shut down at the Rocky Flats Plant some 12,000 pits have accumulated at the DOE Pantex Plant near Amarillo, Texas. Of these, some 5000 have been put into a "strategic reserve." In combination with our existing nuclear weapons stockpile containing some 10,000 intact plutonium pits we therefore have some 15,000 pits that are technically capable of being refurbished or re-used as is. Additionally, some 12,000 pits are being stored at Pantex as "surplus." Again, there is a growing scientific consensus that the aging of pits to date (most existing stockpile pits are 15-25 years old) has not appreciably undermined their performance. Further, the recent Bush/Putin "Strategic Offensive Reduction Treaty" states that both Russia and the U.S. will reduce their strategic nuclear arsenals to 2,000 or under by 2013. Given all this, what is the need for the MPF? The SPEIS should address this directly.

Why Isn't Reestablished Pit Production at LANL Sufficient?

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 fond of 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 of up to 80 pits a year is being re-established there. The fundamental fact is that the U.S. has had uninterrupted pit production capability all along, just not on the scale of what the nuclear weaponeers now want.

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 (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 seriously misguided.

In the unlikely event that pit lifetimes are limited to 50-60 years, the US would still not need to resume the fabrication of new pits until 2022 or beyond. The Modern Pit Facility would not come online until as late as 2018, at least five years after the Bush Administration projects strategic arms cuts down to fewer than 2,200 deployed warheads. LANL has already built 11 test stockpile pits and will reportedly be able to produce certified pits by April 2003, from which time it is slated to begin produc-

ing 20 pits per year. This capability could be extended to 80 pits per year with the addition of an extra work shift (which was an objective of the original SSM PEIS). That capability would suffice to maintain a sizable nuclear weapons stockpile, especially for the 2000 or under US strategic nuclear weapons envisioned for operational deployment under the Strategic Offensive Reductions Treaty. For the sake of discussion here, those 2000 weapons divided by a pit production of rate of 80 per year equals 25 years in which every pit could be replaced by LANL, even if every pit needed replacement (which is extremely unlikely).

And that is at just the present rate of planned capability at LANL. It is clear that big plans are afoot for Technical Area-55, LANL's plutonium pits production site. The 9/26/01 LANL Ten-Year Comprehensive Site Plan (TYCSP) describes five "Strategic Facility Plans," amongst which is "Integrated Nuclear Planning" (INP). "Proposed INP Project elements [are]:

- CMR Replacement Project
- TA-18 Relocation Project
- TA-55 Infrastructure Investment
- Pit Radiography
- NMSSUP [Nuclear Materials Safeguard and Security Upgrade Project] Phase II
- Radioactive Liquid Waste Treatment Facility (RLWTF) Upgrade"

All of these projects directly involve the potential for increased pit production capabilities at TA-55. Additionally, the February 26, 2002 LANL BSL-3 Environmental Assessment mentions "the possible construction of a new building for pit manufacturing use (these actions are speculative at this time but are currently under general discussion)." This presumably means a replacement for Plutonium Faciltiy-4 (PF-4), the current specific facility for pit production.

The burden is on the NNSA to explain in the SPEIS why the Modern Pit Facility is needed in light of LANL's current and potential capabilities, in combination with the other already mentioned issues (treaty obligations, the lack of appreciable plutonium aging effects, future strategic arms cuts, reserve and excess pits, etc.). In addition, the SPEIS should discuss and disclose what future links might exist between LANL and the Modern Pit Facility, particularly the proposed Chemical and Metallurgical Research Building Replacement Project and most importantly any future PF-4 replacement facility. As an obvious note, this is to be a supplement to a programmatic environmental impact statement, thus it is necessary to include other sites and facilities as needed under the discussion of expanding the NNSA's plutonium pit production mission. The NNSA also needs to answer how long it would take to replace the existing stockpile of nuclear warheads with existing, or soon to be completed, facilities other than the Modern Pit Facility? How often do pits need to be replaced to begin with?

What is the Mission and Need for the Modern Pit Facility?

In Nuclear Watch of New Mexico's view there is very little in the way of mission and need for the Modern Pit Facility. This view is based, in part, on the apparent long-term stability of Pu-239 as explained above. It is also based on our reading of the 1970 NonProliferation Treaty (NPT), Article VI, in which the nuclear weapons states pledged to "pursue negotiations in good faith on effective measures relating to the cessation of the nuclear arms race at an early date and to nuclear disarmament…" In turn, Article VI of our own Constitution clearly stipulates that international treaties are to be enshrined as the supreme law of the land.

Instead of observing the NPT's mandate to disarm nuclear stockpiles the DOE instituted its Stockpile Stewardship Program. The original rationale for the Program, as stated in the 1996 Stockpile Stewardship and Management Programmatic Environmental Impact Statement, was to ensure the safety and reliability of the U.S. nuclear stockpile in the absence of full-scale testing. Under the Stockpile Stewardship Program "Directed Stockpile Work" is now the largest budget category within NNSA's "Total Weapons Activities." Directed Stockpile Work is primarily comprised of extensively planned Stockpile Life Extension Programs for each of the existing weapons systems in the "enduring" stockpile. The aim of these programs is to preserve the operational life of each weapons system for at least 30 years. Far from the stated rationale of merely maintaining the safety and reliability of the stockpile in the absence of full-scale testing, these programs are aggressively introducing major modifications and possible new designs that will improve accuracy and military effectiveness in order to meet "changing military requirements." The weapons labs themselves now describe the stockpile as "evolving," in contrast to simply "enduring." One of the stated objectives of Directed Stockpile Work is to "provide the capability to realize new weapons, if they are needed." Finally, an expanded Phase 6 [Quantity Production and Stockpile Phase] has been established by the NNSA to indefinitely extend the life of all remaining nuclear weapons systems.

It is worthy of note that the "target" stated by the lab for its plutonium pit "campaign" in support of Directed Stockpile Work is to "[r]e-establish a robust pit manufacturing capability to produce stockpiled and *new-design pits without underground testing*." (LANL FY01 Institutional Plan, p. 31, emphasis added.) The express intent of the Comprehensive Test Ban Treaty, which would cut off full-scale underground testing, is to halt the continuing advancement of nuclear weapons designs. Although the U.S. has failed to ratify the CTBT, it has to date observed a testing moratorium. Apparently, through technical experimental and simulation advances, LANL now seeks to circumvent the intent of the CTBT.

All of this begs the question of what is the real mission and need for an expensive and provocative "Modern Pit Facility," one that arguably will work against our own national security because of the bad example that it will give to the international community. The troubling answer is that the Bush Administration wants DoD and DOE to acquire the capacity to produce and deploy a new generation of nuclear weapons, more suited to preemptively attacking specific military targets in so-called "rogue states" such as Iraq, Iran, and North Korea. The January 2002 U.S. Nuclear Posture Review makes this evident: "The need is clear for a revitalized nuclear weapons complex that will be able, if directed, to design, develop, manufacture, and certify new warheads in response to new national requirements . . . a new modern pit facility will be needed to deal with the large scale replacement of components and new production." Every indication is that the nuclear weapons complex is indeed being directed to create exotic new nuclear weapons such as the "Robust Nuclear Earth Penetrator."

On "capacity," in the mid-1990s the stated rationale for resumed pit production was to replace the small number of pits destroyed during routine stockpile evaluation tests. Now the new 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…" With the demise of the Soviet Union, a production capacity of up to 500 pits per year is simply not needed, especially given the new Strategic Offensive Reductions Treaty target of cutting both arsenals down to 2,000 or under each by 2013. We can only surmise that the true purpose of the MPF is to help 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. There can hardly be more concrete demonstration that the U.S. never intends to honor its NPT obligation to disarm its nuclear stockpile than to build and operate a plutonium pit production super facility.

What Are the True and Complete Costs of Pit Production?

Pit production is costly even as funding for domestic human needs is being severely cut. Construction alone of the MPF is expected to cost up to $4.1 billion. Given the DOE's notorious cost overruns and lack of disclosure of complete costs (for example, the National Ignition Facility) the SPEIS should compile and aggregate all related costs. This would include design and construction, the cost of providing plutonium feed material, ongoing operating costs, security, waste management and eventual facility decontamination, decommissioning and cleanup. Particularly, any tendency to "low-ball" construction and operating costs so that it is more palatable to Congress (as perhaps was the case with the National Ignition Facility) should be strenuously avoided. As this is a programmatic document, the SPEIS should also include associated costs at all other relevant facilities. LANL alone will have already spent billions of dollars in resuming pit production there (the first new war reserve pit alone is expected to cost $1.7 billion).

Analysis of Potential Criticality Incidents

Given the large amounts of fissile plutonium-239 and possibly highly enriched uranium that the Modern Pit Facility would presumably handle the SPEIS needs to conduct a stringent review of occupational and public safety measures taken to avoid potential criticality incidents. This would be particularly true in the event that the MPF were to employ aqueous processing or production methods (and, if so, those aqueous processes should be discussed and disclosed in the SPEIS).

Our concerns over potential criticality incidents are not merely pulled out of thin air. In a December 1997 letter the Defense Nuclear Facilities Safety Board (DNFSB) noted its own concerns over criticality issues at the super-sensitive "Superblock" facility at the Lawrence Livermore National Laboratory (LLNL). The DNSFB noted:

> Recent criticality safety infractions at LLNL Building 332 (B332) and reviews by the Board have identified deficiencies that are indicators of a basic problem with the "interim" ISM [Integrated Safety Management] system at Superblock. The basic problem involves inconsistent development and implementation of safety control measures for the protection of the workers and of government property. This is the safety sector for which DOE has relied heavily on the contractor to identify and implement controls…
>
> Two criticality infractions in B332 were reported in July and October 1997. Subsequent review revealed numerous additional criticality infractions. The infractions occurred primarily as a result of poor implementation of criticality safety controls, not deficiencies in criticality safety analyses… There is insufficient DOE oversight in B332.

Additionally, there have been criticality safety infractions at LANL's Technical Area-18.

The point here is obvious. The NNSA needs to institutes rigorous criticality safety measures at the Modern Pit Facility, and to impose them with rigorous oversight that avoids over-reliance on the operating contractor. The NNSA needs to discuss and disclose those measures and quality of oversight in the SPEIS.

Terrorist Events

Obviously the Modern Pit Facility will be a high profile facility, therefore unfortunately it is plausible that the facility could be a tempting target for terrorists. In a sense the NNSA wants to have it both ways in that it obviously anticipates increased funding as a result of the "war on terrorism" but at the same time dismisses by omission the possibility of potentially catastrophic terrorist attacks on its facilities (see, for example, the LANL BSL-3 Environmental Assessment). The SPEIS needs to analyze risk scenarios where terrorists would purposively ram fuel-laden aircraft into the facility or use other unconventional means of attack. Additionally, given DOE's consistently low marks in on-the-ground security (for example, repeated failures by the LANL Protective Force at Technical Area-18 during mock terrorist attacks) the SPEIS needs to analyze potential risks posed by determined intruders.

Waste Disposition

The SPEIS needs to generally discuss the disposition of wastes resulting from MPF operations (specifics would need addressing in the follow-on site-specific EIS). Where would mixed low-level solid wastes be disposed of? Where are transuranic solid wastes to be disposed of? Where are any liquid wastes in either waste class to be disposed of? What are to be the anticipated volumes in all classes of wastes? What ancillary facilities might be needed for management and disposal of MPF wastes (for example, a radioactive liquid waste treatment facility for liquid wastes)?

Is the NNSA relying on the Waste Isolation Pilot Plant (WIPP) for TRU solid waste disposal? Given that the MPF is not expected to begin operations until after 2015 and that under "accelerated cleanup" WIPP is suppose to close earlier than originally anticipated, where are MPF TRU wastes to be disposed of after WIPP's closure?

HEPA Filters

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. The NNSA will no doubt downplay potential public hazards inherent to the pit production mission because of the use of redundant HEPA filters. These filters are often claimed to be 99.97% efficient for 0.3 micron particles, and even more efficient for both smaller and larger particles.

The SPEIS should address unresolved issues concerning HEPA filters, such as:

- The use of *in situ* tests for HEPA filter performance, rather than just lab tests of the filter medium alone. Historically HEPA filters have not always been properly installed and emission particles have been able to escape around the filter rather than being forced through only the filter medium;
- The SPEIS and the subsequent site-specific environmental impact statement for the Modern Pit

Facility needs to employ accident scenarios involving the destruction of HEPA filters by fire or the impairment of their performance by humidity resulting from fire suppression.

- The issue of "alpha recoil," meaning the ability of alpha emitters, like plutonium, to creep through successive HEPA filters.

Ultimately, what is needed is a technique for particle counting immediately downstream of the HEPA filters that monitors and analyzes total emissions, not mere reliance on short-duration lab tests of the filter medium.

Plutonium Mobility

A 1999 DOE study revealed that plutonium transport in groundwater is much quicker than previously believed. The past belief, promoted by DOE, was that plutonium as an actinide binds to clay and rocks, thus immobilizing it and thereby protecting both surface and ground water. The study at the Nevada Test Site found that insoluble plutonium had migrated nearly a mile bound to clay as a colloid. The plutonium was suspended and floating in a sluggish aquifer, a mere 30 years after being deposited by an underground nuclear weapons test. There is also a possible second issue involving the fact that plutonium could oxidize in the presence of subsurface water vapor and become readily soluble in water, thereby enhancing its mobility. The SPEIS and the future site-specific MPF environmental impact statement should address these issues. This would be particularly important for any MPF-related environmental analysis of the Savannah River Site, given the site's plentiful surface water and high water table.

The Savannah River Site

The Savannah River Site is commonly understood to be the most likely site for the MPF. SRS is also preparing to build facilities, purportedly for non-proliferation purposes, that will render weapons-grade plutonium into mixed-oxide (MOX) fuel for use in commercial nuclear reactors. Toward that end DOE has begun the process of moving some 30 metric tons of plutonium to SRS. However, these MOX facilities will likely have the capability to purify plutonium for weapons purposes as well. The SPEIS should discuss and disclose what links, if any, future MOX facilities and the MPF might have with each other. For example, is it possible that the "Pit Conversion and Disassembly Facility" and the "Mixed Oxide Fuel Fabrication Facility" could supply the Modern Pit Facility with plutonium feed material for pit production, or even play more direct roles in production? The expense of these facilities, whose design costs alone each exceed $100 million, coupled with the uncertain future of DOE's MOX program, underline the urgency of this question.

Y-12

The SPEIS should include discussion and disclosure of the role that the Y-12 Plant in Tennessee might play in future pit production. The 1997 DOE Report "Rapid Reconstitution of Pit Production Capacity" stated that "a combined SRS/Y-12 site is the technically superior multi-site option" for the Modern Pit Facility. In the current site selection process Y-12 was dropped. The SPEIS should explain why and if this is really the case. Additionally, the SPEIS should discuss and disclose how Y-12's traditional mission of fabricating highly enriched uranium components may intersect with present and future pit production at LANL and/or the Modern Pit Facility.

A Hearing in Santa Fe on the Draft SPEIS

The NNSA should hold a hearing on the draft SPEIS in Santa Fe, NM. The citizenry of Santa Fe

and environs have strong interests in LANL affairs and the Modern Pit Facility.

Classified Appendix/Unclassified Summary

The NNSA states that the Modern Pit Facility environmental impact statement will likely contain a classified appendix and that it will provide an unclassified summary "to the fullest extent possible." The full appendix, redacted as necessary, should be available to interested citizens promptly upon request.

Conclusion

We are living in a world increasingly threatened by the use of weapons of mass destruction, a world in which the US should lead by example towards their elimination. This is not to argue for unilateral nuclear disarmament: instead, it is to argue that our own national security can be better enhanced if our own government led by example. Nuclear Watch of New Mexico does not believe that the Modern Pit Facility is necessary for the NNSA's Stockpile Stewardship Program's stated rationale of maintaining the safety and reliability of the U.S. nuclear stockpile. Instead, construction and operation of the Modern Pit Facility will act against our own and global security interests by supporting the broadening of the US nuclear targeting rationale, efforts to make nuclear weapons more usable and programs that seek to preserve nuclear weapons forever. It will work against the international nonproliferation regime codified by the NonProliferation Treaty. To the extent that the MPF produces new-design pits it will undermine the intent of the Comprehensive Test Ban Treaty or add internal pressures to nullify the Treaty altogether. We already have an overabundance of plutonium pits and there is no evidence that plutonium-239 is aging so fast that the MPF must be built. Finally, there are many, many environmental, safety and health issues (not all covered in these comments) that will be associated with the Modern Pit Facility.

Five DOE sites, the Los Alamos National Laboratory and the Waste Isolation Pilot Plant in New Mexico, the Nevada Test Site, the Pantex Plant in Texas and the Savannah River Site (SRS) in South Carolina are being considered for the Modern Pit Facility (MPF). Under the National Environmental Policy Act federal agencies are required to analyze alternatives to their proposed actions, including a "No Action Alternative." Given the hollowness of the NNSA's proclaimed need and the MPF's long-reaching negative impacts, a decision to <u>not</u> build the facility is the appropriate alternative.

- End of Comments -

Respectfully submitted,

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