Attachments to June 24, 2020 Request
that DOE and NNSA issue a Record of Decision
on the Final Supplement Analysis of the
Complex Transformation Programmatic Environmental Impact Statement

Attachment A

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VIA ELECTRONIC MAIL

Re: The need to prepare a Programmatic Environmental Impact Statement in connection with plans to expand plutonium pit production at the Los Alamos National Laboratory in New Mexico and the Savannah River Site in South Carolina.

On behalf of the public interest organizations Nuclear Watch New Mexico, Savannah River Site Watch, the Natural Resources Defense Council, and Tri-Valley Communities Against a Radioactive Environment (collectively "the Nuclear Safety Organizations"), we are writing to notify the Department of Energy ("DOE") and the National Nuclear Security Administration ("NNSA") of the need to prepare a Programmatic Environmental Impact Statement ("PEIS") in connection with the agencies' stated plan to expand the production of plutonium pits for nuclear weapons at the Los Alamos National Laboratory ("LANL") in New Mexico and the Savannah River Site ("SRS") in South Carolina. Because the National Environmental Policy Act ("NEPA") mandates that "[a]gencies shall integrate the NEPA process with other planning *at the earliest possible time* to ensure that planning and decisions reflect environmental values," 40 C.F.R. § 1501.2 (emphasis added), DOE and NNSA must begin the preparation of a PEIS now.

EXECUTIVE SUMMARY

The Trump Administration's 2018 Nuclear Posture Review called for the expanded production of nuclear weapons for the first time in many years, and specifically called for production of 80 plutonium pits (the cores of nuclear weapons) per year by 2030. To that end,

the Department of Energy ("DOE") and the National Nuclear Security Administration ("NNSA") plan to expand production of plutonium pits at the Los Alamos National Laboratory in New Mexico and to repurpose an incomplete facility at the Savannah River Site in South Carolina. At Los Alamos, this plan will require roughly tripling plutonium pit production in facilities with nuclear safety deficiencies so severe that DOE suspended all nuclear weapons production there for over four years, and which DOE recently found have not been adequately resolved. At the Savannah River Site, this plan will require repurposing a facility that was never designed for plutonium pit production, that is still incomplete, and that has been subject to construction-related fraud. Both aspects of DOE and NNSA's plan to expand plutonium pit production entail serious risks for the environment and public safety. Additionally, these plans will cost at least $9 billion over the next ten years and at least $42 billion over the project's duration.

The National Environmental Policy Act ("NEPA") requires federal agencies to take a hard look at proposed actions before committing to a course of action or making any irreversible or irretrievable commitment of resources. NEPA requires agencies to publicly disclose environmental impacts, involve the public in agency decision-making, and to seriously consider all viable alternatives to a proposed action. Thus, agencies must prepare an Environmental Impact Statement ("EIS") for any action that may have significant environmental impacts. Where agency actions are closely related, they must be considered together in a single Programmatic EIS ("PEIS").

DOE and NNSA have stated that it is their intention to meet the Trump Administration's goal of producing 80 plutonium pits per year by 2030 through the expansion of pit production at Los Alamos and the Savannah River Site. Because the agencies' previous environmental analysis for activities at Los Alamos is badly outdated and does not properly consider the serious and ongoing safety issues that led to a four-year shutdown in nuclear weapons production there, NEPA requires a hard look at the proposed expansion of plutonium pit production at that site through a new or supplemental EIS. Likewise, because the agencies have not prepared any environmental analysis for the proposal to produce plutonium pits at an incomplete facility at SRS that has been subject to construction fraud, NEPA requires the production of an EIS for this activity as well. And because the proposed actions at LANL and SRS are inextricably related aspects of DOE and NNSA's plan to meet the Trump Administration's call for expanded nuclear weapon production, DOE and NNSA must prepare a PEIS to consider these proposed actions together. However, the agencies instead appear to be shirking NEPA's requirements by undertaking activities at LANL and SRS without first preparing the legally required environmental analysis. To come into compliance with NEPA, DOE and NNSA must begin the required PEIS process now.

DISCUSSION

I. NEPA.

NEPA is the "basic national charter for protection of the environment." 40 C.F.R. § 1500.1. NEPA's "national policy" is to "encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment . . . [and] enrich the understanding of the ecological systems and natural resources

important to the nation . . . ." 42 U.S.C. § 4321. To guard against environmental damage, Congress required all federal agencies to prepare a "detailed statement" for each "major federal action significantly affecting the quality of the human environment" that includes "the environmental impact of the proposed action" as well as a thorough consideration of alternatives to the proposed action. *Id.* § 4332(c).

In light of NEPA's mandates, the Supreme Court has reasoned that NEPA is "intended to reduce or eliminate environmental damage and to promote 'the understanding of the ecological systems and natural resources important to' the United States." *Dep't of Transp. v. Pub. Citizen*, 541 U.S. 752, 756 (2004) (quoting 42 U.S.C. § 4321).

To achieve NEPA's goals, federal agencies must prepare an EIS for any major federal action with significant environmental effects. 42 U.S.C. § 4332(c). NEPA's procedures are designed to inject environmental considerations "in the agency decision making process itself," and to "'help public officials make decisions that are based on understanding of environmental consequences, and take actions that protect, restore, and enhance the environment.'" *Pub. Citizen*, 541 U.S. at 768-69 (quoting 40 C.F.R. § 1500.1(c)). Therefore, "NEPA's core focus [is] on improving agency decisionmaking," *Pub. Citizen*, 541 U.S. at 769 n.2, and specifically on ensuring that agencies take a "hard look" at potential environmental impacts and alternatives "as part of the agency's process of deciding whether to pursue a particular federal action," *Balt. Gas and Elec. Co. v. Natural Res. Def. Council*, 462 U.S. 87, 100 (1983).

Importantly, the NEPA process "shall serve as the means of assessing the environmental impact of proposed agency actions, *rather than justifying decisions already made*." 40 C.F.R. § 1502.2(g) (emphasis added); *see also id.* § 1502.5 (requiring that NEPA review "shall be prepared early enough *so that it can serve practically as an important contribution to the decision making process* and *will not be used to rationalize or justify decisions already made*") (emphasis added).

An agency must prepare an EIS for every "major Federal action significantly affecting the quality of the human environment." 42 U.S.C. § 4332(c). Under NEPA's implementing regulations, "significance" requires consideration of both context and intensity. 40 C.F.R § 1508.27. "Context" considerations include the affected region, interests, and locality, varying with the setting of the action, and include both short and long-term effects. *Id.* § 1508.27(a). "Intensity" refers to the severity of impact, including: impacts that may be both beneficial and adverse; unique characteristics of the geographic area, such as proximity to wetlands, wild and scenic rivers, or ecologically critical areas; the degree to which the effects on the quality of the human environment are likely to be highly controversial; the degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration; whether the action is related to other actions with individually insignificant but cumulatively significant impacts; the degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act; and whether the action threatens a violation of federal law imposed for the protection of the environment. *See* 40 C.F.R. § 1508.27(b).

Under NEPA, to determine the proper scope of an EIS an agency "shall consider 3 types of actions," including connected actions, cumulative actions, and similar actions. *Id.* § 1508.25. Connected actions include those that "are closely related and therefore should be discussed in the same impact statement" because they "[a]re interdependent parts of a larger action and depend on the larger action for their justification." *Id.* § 1508.25(a)(1). Cumulative actions are those that "with other proposed actions have cumulatively significant impacts." *Id.* 1508.25(a)(2). And similar actions "when viewed with other reasonably foreseeable or proposed agency actions have similarities that provide a basis for evaluating their environmental consequences together." *Id.* § 1508.25(a)(3). An agency should analyze similar actions together "when the best way to assess adequately the combined impacts of similar actions or reasonable alternatives to such actions is to treat them in a single impact statement." *Id.* In such circumstances, a Programmatic Environmental Impact Statement is necessary where "actions are 'connected,' 'cumulative,' or 'similar,' such that their environmental effects are best considered in a single impact statement." *American Bird Conservancy v. Federal Communication Commission*, 516 F.3d 1027, 1032 (D.C. Cir. 2008) (quoting 40 C.F.R. § 1508.25(a)).

II. DOE and NNSA's Plans for Expanded Plutonium Pit Production

In 2018, the Trump Administration issued a Nuclear Posture Review that, for the first time in many years, called for expanding production of nuclear weapons. *See* U.S. Dep't of Defense, *Nuclear Posture Review*, February 2018, at 1–2.[1] Despite the fact that "[f]or decades, the United States led the world in efforts to reduce the role and number of nuclear weapons," *id.* at 1, the 2018 Nuclear Posture Review reversed this strategy by calling for "a flexible, tailored nuclear deterrent strategy," an apparent euphemism for the development of new nuclear weapons, *id.* at 2; *see also id.* at 63 (noting that the U.S. "has not executed a new nuclear weapon program for decades" and calling for "research and development" and "technology maturation" in order "to design and develop nuclear weapons"); *id.* at 52 (depicting a proposed increase in the nuclear weapons budget to levels not seen since the Cold War).

To support the Trump Administration's call for new nuclear weapons, the Nuclear Posture Review announced the need to "[p]rovide the enduring capability and capacity to produce plutonium pits at a rate of no fewer than 80 pits per year by 2030." *Id.* at 64. The Review further stated that in order to increase production of plutonium pits, which are the core of nuclear weapons, "significant and sustained investments will be required over the coming decade." *Id.* Indeed, the Congressional Budget Office ("CBO") has estimated that DOE's plan to "produce at least 80 plutonium pits per year by 2030" will cost "about $9 billion from 2019 to 2028." CBO, *Projected Costs of U.S. Nuclear Forces*, January 2019, at 5.[2] Furthermore, NNSA recently estimated that repurposing the MOX Facility at SRS for plutonium pit production will have a "lifecycle cost" of $27.8 billion, while expanding pit production at LANL will cost between $14.3 billion and $18.8 billion—meaning that over the next decades this plan will likely

[1] The 2018 Nuclear Posture Review is available online at https://media.defense.gov/2018/Feb/02/2001872886/-1/-1/1/2018-NUCLEAR-POSTURE-REVIEW-FINAL-REPORT.PDF

[2] This CBO report is available at https://www.cbo.gov/system/files/2019-01/54914-NuclearForces.pdf

cost taxpayers at least $42 billion. NNSA, *Plutonium Pit Production Engineering Assessment (EA) Results*, May 2018, at 10.[3]

Producing plutonium pits "entails extensive processing of very hazardous materials, which typically requires a specialized facility." CBO, *Projected Costs of U.S. Nuclear Forces*, at 8 n.13. Plutonium pit production in the United States was performed on a large scale at the Rocky Flats Plant in Colorado until 1989, when an FBI raid investigating safety and environmental violations led to the closure of that facility. *See* Congressional Research Service, *U.S. Nuclear Weapon "Pit" Production Options for Congress*, February 2014, at 18.[4] DOE has declined to attempt to restart operations at Rocky Flats and has instead undertaken a "Sisyphean history" of "failed efforts to construct a building to restore pit production." *Id.* "The United States has not had the capacity to make more than about 10 [pits per year] since 1989." *Id.*

Currently, the United States has the capacity to produce a very limited number of plutonium pits only at the Los Alamos National Laboratory in New Mexico, a facility with a history of serious safety problems. *See* DOE Office of Enterprise Assessments, *Assessment of the Management of Nuclear Safety Issues at the Los Alamos National Laboratory*, April 2019, at 1.[5] Indeed, DOE has recognized "significant weaknesses (i.e. non-compliances with significant impact)" in LANL's management of nuclear safety issues "over the past eleven years." *Id.* at 2. These "significant weaknesses . . . have allowed identified problems to go uncorrected, problem recurrences to be routinely accepted, and corrective actions to often be delayed for years." *Id.* at v. These problems led to the production of plutonium pits at LANL being shut down "for over four years." *Id.* Moreover, DOE has recognized that despite changing the contractor responsible for managing these issues, LANL has made "only limited improvement in addressing longstanding weaknesses" and that many of these safety issues "persist, which can lead to the degradation of nuclear safety." *Id.* Nevertheless, the Trump Administration's plan is not only to produce plutonium pits at LANL, but to do so at a rate that has not been seen for decades. *See* DOE, *Final Report for the Plutonium Pit Production Analysis of Alternatives*, October 2017 at 1 (noting that DOE plans to produce 30 pits per year at LANL, but that it produced only 10 pits per year "in the early 2000s" and that no pits have been produced at LANL since 2012).[6] DOE has acknowledged that its plan to accelerate pit production at LANL has a "high risk level," may cause "significant unmitigated off-site consequences," and that "[r]easonable mitigation strategies" are "unavailable." DOE, *Engineering Assessment Report, Pu Pit Production Engineering Assessment*, April 2018, at 4-9.[7]

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[3] This NNSA Report is available at https://nukewatch.org/newsite/wp-content/uploads/2019/03/FINAL-Pu-Pit-Production-EA-Results-05.14.18_Unclassified.pdf

[4] This Report is available at https://fas.org/sgp/crs/nuke/R43406.pdf

[5] This DOE Report is available at https://www.energy.gov/ea/downloads/assessment-management-nuclear-safety-issues-los-alamos-national-laboratory-april-2019

[6] A redacted version of this DOE Report is available at http://www.lasg.org/MPF2/documents/NNSA_PuPitAoA_Oct2017_redacted.pdf

[7] A redacted version of this DOE Report is available at https://nukewatch.org/newsite/wp-content/uploads/2019/03/Pu-Pit-Engineering-Assessment-Report-Rev-2_20-April-2018.pdf

Because DOE does not believe that it is possible for LANL to produce plutonium pits at the rate the Trump Administration has proposed, *id.*, DOE and NNSA have also proposed to produce plutonium pits at an as-yet-incomplete Mixed Oxide Fuel Fabrication Facility ("the MOX Facility") at the Savannah River Site in South Carolina. However, the MOX Facility was never designed for that purpose, *id.*, and has proven to be a multi-billion dollar boondoggle.[8]

Since 1991, the SRS mission has revolved principally around the storage or disposal of radioactive material, in particular plutonium from dismantled nuclear weapons. *See* Complaint, *United States of America v. CB&I AREVA MOX Services, LLC*, No. 1:19-cv-00444, ECF No. 1, at 8. In 1999, NNSA entered into a contract for the construction of the MOX Facility at SRS "to convert surplus nuclear weapons-grade plutonium into safe, stable fuel for civilian nuclear power generation." *Id.* Construction began on the MOX Facility in 2007. *See* Government Accountability Office, *MOX Fuel Fabrication Facility: Briefings in Response to a Mandate in the National Defense Authorization Act for Fiscal Year 2017* ("GAO MOX Report"), November 2017, at 1.[9] However, the MOX Facility project soon ran into dramatic delays and cost overruns. *See id.* (noting that cost estimates rose from $3.4 billion to $17.2 billion between 2007 and 2016). After spending at least $3.4 billion on the MOX facility, *id.*, DOE has recently abandoned any intention to complete the MOX Facility. In November 2017, the Government Accountability Office found that despite DOE spending billions of dollars on the MOX Facility, it was at that time only roughly 30 percent complete. *Id.* at 4.[10]

In addition to stopping work on the MOX Facility after sinking billions of dollars into it, DOE has also recently revealed that the MOX Facility's construction was subject to extensive fraud. Indeed, the government recently brought a False Claims Act case against the MOX Facility contractor and subcontractor, alleging that the contractors defrauded NNSA out of "millions of dollars" by submitting "fraudulent claims, supported by forged and fraudulent invoices, for construction related materials that did not exist." *See* Complaint, *United States of America v. CB&I AREVA MOX Services, LLC*, No. 1:19-cv-00444, ECF No. 1, at 1–2. As such, after spending billions of taxpayer dollars, DOE now has a 30-percent-complete facility plagued by fraudulent construction practices.

Now, DOE and NNSA are considering converting the incomplete MOX Facility into a site for the production of the majority of the plutonium pits that the Trump Administration has stated are necessary. Indeed, of the 80 pits per year that DOE and NNSA say they must produce

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[8] *See, e.g.*, https://www.aikenstandard.com/news/nnsa-delivered-mox-termination-notice-this-week-construction-expected-to/article_b907332c-ce40-11e8-b971-ebc9931647b9.html (noting that the MOX Facility was "initially expected to come online in 2016 at a cost of $4.8 billion" but that "the project's timeline and price tag have seriously bloated" and reporting the termination of the over-budget project).

[9] This GAO Report is available at https://www.gao.gov/assets/690/688369.pdf

[10] DOE issued a stop work order on May 14, 2018. The State of South Carolina sought to enjoin this decision, reasoning that DOE's intention to instead pursue a dilute-and-dispose approach to plutonium disposal violated NEPA, among other defects, but the Fourth Circuit rejected the State's arguments. *See State of South Carolina v. United States*, No. 18-1684, ECF No. 42 (4th Cir. Jan 8, 2019).

by 2030, 50 pits would be produced at the MOX Facility. *See* NNSA, *Engineering Assessment Report: Pu Pit Production Engineering Assessment*, April 2018, at xi.[11] DOE has acknowledged the significant risks of this plan. *See* DOE, *Analysis of Alternatives*, at 1 (noting the "qualitative risk of reconfiguring a partially completed facility for a new mission in a new location").

Notably, DOE and NNSA are treating the 80 pits per year as a minimum figure, meaning that the agencies would require the ability to produce more than 30 pits per year at LANL and more than 50 pits per year at SRS. *See* NNSA, *Pu Pit Production Engineering Assessment*, at 1-2 ("Plutonium pit production capability will be able to produce *a minimum of 80* [pits per year] by 2030." (emphasis added)); *see also* NNSA, *Final Report for the Plutonium Pit Production Analysis of Alternatives*, October 2017, at 1 ("The pit production requirement is an annual 'at least' production rate").

Troublingly, DOE and NNSA appear to be shirking their duties under NEPA. The agencies previously acknowledged in October 2017 that any approach to meeting the Trump Administration's goal of producing at least 80 plutonium pits per year would "require an environmental impact statement." *Id.* at 57; *see also id.* at 60 ("all alternatives are assumed to require a full EIS"); *id.* at 65 ("All alternatives will likely require an EIS"). However, in April 2018 the NNSA stated that "only a NEPA review is required" for the conversion of the MOX Facility to plutonium pit production, without acknowledging that an EIS is clearly required for such a significant action. NNSA, *Pu Pit Production Engineering Assessment*, at 4-6. And DOE and NNSA have not acknowledged the need to prepare a Programmatic EIS to consider the entirety of the agencies' proposed approach to meeting the Trump Administration's expanded plutonium pit production goals. This approach flouts NEPA's purposes and explicit requirements.

III. Analysis.

A. Repurposing the MOX Facility to Produce Plutonium Pits Requires an EIS.

NEPA requires the preparation of an EIS for any "major federal action significantly affecting the quality of the human environment." 42 U.S.C. § 4332(c). To determine whether impacts are significant, agencies must consider a project's "context" and "intensity," which is evaluated according to ten factors, 40 C.F.R. § 1508.27, any one of which may necessitate an EIS. *Ocean Advocates v. U.S. Army Corps of Eng'rs*, 402 F.3d 846, 865 (9th Cir. 2005).

To begin with, DOE's plan to repurpose the incomplete MOX facility to produce plutonium pits is a new proposed action that has never previously been analyzed in any NEPA process. Although DOE and NNSA have prepared previous PEISs for earlier plans regarding nuclear weapons fabrication (described further below), no previous NEPA analysis has considered producing nuclear weapon components using the MOX Facility.

[11] This NNSA Engineering Assessment is available at https://www.lasg.org/MPF2/documents/NNSA_PuPitEA_Rev2_20April2018-redacted.pdf

Moreover, DOE and NNSA's plan to repurpose the incomplete MOX facility plainly will have significant environmental impacts and thus requires an EIS. Beginning with the context, this plan will entail spending billions of taxpayer dollars over many years to conduct highly hazardous fabrication of plutonium pits at an incomplete facility that was never designed for this purpose. Because this plan, which bears directly on the nation's national security interests, entails significant risks to the surrounding environment and local communities, consideration of this project's context plainly indicates that the plan is "significant" within the meaning of NEPA. *See* 40 C.F.R. § 1508.27(a) (requiring consideration of "contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality"). Moreover, the plan to repurpose the MOX Facility to produce plutonium pits plainly implicates many of the significance criteria in NEPA's implementing regulations, any one of which may necessitate an EIS. *See Ocean Advocates*, 402 F.3d at 865.

First, this plan may affect public health or safety, 40 C.F.R. § 1508.27(b)(2), both because the processing of plutonium for nuclear weapons "entails extensive processing of very hazardous materials," CBO, *Projected Costs of U.S. Nuclear Forces*, January 2019, at 8 n.13, and because the fact that the MOX Facility was never designed for the production of nuclear weapon components raises very important questions about whether such activities may be undertaken safely at this Facility. *See, e.g.*, NNSA, *Pu Pit Engineering Assessment*, at 2-39 ("The significant number of samples required to support a 50 ppy plutonium pit mission . . . could increase the material at risk . . . above the current safety basis limits"). Likewise, because the release of radiological or hazardous materials from the Savannah River Site could spread for many miles, the impacts on the neighboring populations could be dire. *See, e.g.*, DOE, *Final Complex Transformation Supplemental Programmatic Environmental Impact Statement*, at 4-374 (acknowledging that members of the public within a 50-mile radius of SRS could be affected by radiation on the site).

Second, this plan may affect "[u]nique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas." 40 C.F.R. § 1508.27(b)(3). For example, DOE's own description of the Savannah River Site notes that it includes "hundreds of individual wetland areas." DOE, *Facts from the Savannah River Site*, at 2.[12] Indeed, "[s]ome SRS surface waters are classified as . . . unique and irreplaceable on a national or eco-regional basis." DOE, *Final Complex Transformation Supplemental Programmatic Environmental Impact Statement*, at 4-356. Likewise, the portions of the Savannah River Site managed by the U.S. Forest Service includes "65,000 acres" of habitat for the endangered red-cockaded woodpecker, indicating that this is an ecologically critical area. U.S. Forest Service, *Savannah River Fast Facts*.[13]

Third, this plan would be "highly controversial," 40 C.F.R. § 1508.27(b)(4), and would be "highly uncertain or involve unique or unknown risks," *id.* § 1508.27(b)(5). To begin with, the extent of work that it would take to repurpose the incomplete MOX Facility remains profoundly unclear, in part because there is a dispute about the status of the construction so far.

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[12] This DOE Fact Sheet is available at https://www.srs.gov/general/news/factsheets/srs_overview.pdf

[13] This Fact Sheet is available at https://www.srs.gov/general/news/factsheets/usfs-sr.pdf

Thus, the GAO found that the MOX Facility is "about 30 percent complete," while the contractor insisted that it was 74 percent complete. GAO, *MOX Report*, at 4. Meanwhile, as noted above, the United States has recently sued the MOX Facility contractor under the False Claims Act for falsifying reports on what construction activities were actually undertaken. Under these circumstances, the plan to repurpose the MOX Facility to produce nuclear weapons is both "highly controversial" and "highly uncertain" within the meaning of NEPA's implementing regulations. As Senator Lindsay Graham stated regarding repurposing the MOX Facility, "I have no confidence you got a plan. I think you're making this up as you go." Senate Appropriations Committee, Energy and Water Development Subcommittee Hearing on the Proposed NNSA Budget, April 5, 2019.

Fourth, this action "may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources." 40 C.F.R. § 1508.27(b)(8). Indeed, the counties in which the Savannah River Site is located contain numerous areas listed on the National Register of Historic Places.[14] Likewise, the nearby city of Augusta, Georgia also contains numerous areas listed on the National Register of Historic Places.[15] Because a release of radiological or otherwise hazardous materials from the Savannah River Site could spread for many miles, the impacts to historic places within the area that could be affected by a catastrophic accident at a repurposed MOX Facility must be considered in an EIS. *See*, *e.g.*, DOE, *Final Complex Transformation Supplemental Programmatic Environmental Impact Statement*, at 4-374 (acknowledging that members of the public within a 50-mile radius of SRS could be affected by radiation on the site).[16]

Finally, the proposed repurposing of the MOX Facility to produce plutonium pits "may adversely affect an endangered or threatened species or its habitat that has been determined to be critical." 40 C.F.R § 1508.27(b)(9). SRS and the surrounding area provide habitat for numerous endangered species, including the red-cockaded woodpecker, the wood stork, the shortnose sturgeon, and several species of plants. *See*, DOE, *Final Complex Transformation Supplemental Programmatic Environmental Impact Statement*, at 4-356–57 (listing endangered species near SRS). A release of radiological or hazardous contaminants from a repurposed MOX Facility could have severe adverse impacts on these listed species.[17]

Accordingly, contrary to NNSA's statement that "only a NEPA review is required" for the conversion of the MOX Facility to plutonium pit production. NNSA, *Pu Pit Production Engineering Assessment*, at 4-6, there can be no legitimate dispute that an EIS is necessary.

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[14] *See* http://www.nationalregister.sc.gov/aiken/nraiken.htm (listing historic sites in Aiken County); http://www.nationalregister.sc.gov/barnwell/nrbarnwell.htm (listing historic sites in Barnwell County); http://www.nationalregister.sc.gov/allendale/nrallendale.htm (listing historic sites in Allendale County).

[15] *See* https://nationalregisterofhistoricplaces.com/ga/richmond/state.html (listing historic sites in Augusta).

[16] Likewise, DOE and NNSA must undertake an analysis of impacts to historic places pursuant to the National Historic Preservation Act, which agencies typically conduct in parallel with NEPA.

[17] Likewise, for this reason DOE and NNSA must undertake formal consultation with the United States Fish and Wildlife Service pursuant to section 7(a)(2) of the Endangered Species Act.

B. Expansion of Plutonium Pit Production at LANL Requires a Supplemental EIS.

Where "[t]here are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts," an agency must prepare a Supplemental EIS ("SEIS"). 40 C.F.R. § 1502.9(c)(1)(ii); 10 C.F.R. § 1021.314(a). Whether new information is sufficiently significant to necessitate an SEIS "turns on the value of the new information." *Marsh*, 490 U.S. at 374. Where "new information is sufficient to show that the remaining action will affect the quality of the human environment in a significant manner or to a significant extent not already considered, a supplemental EIS must be prepared." *Id.* New information that "raise[s] substantial questions regarding the project's impact [is] enough to require further analysis." *League of Wilderness Defenders v. Connaughton*, 752 F.3d 755, 760 (9th Cir. 2014) (quoting *Klamath Siskiyou Wildlands Ctr. v. Boody*, 468 F.3d 549, 561–62 (9th Cir. 2006)).

DOE and NNSA appear to be moving forward with a plan to produce 30 plutonium pits per year at LANL without preparing any NEPA analysis that considers new information and changed circumstances since the agencies undertook their *Final Complex Transformation Supplemental Programmatic Environmental Impact Statement* in 2008. However, because important new information has come to light regarding the highly questionable safety of producing plutonium pits at LANL, the preparation of an SEIS is clearly necessary.

As NNSA has recognized, "LANL is currently authorized to produce only 20 pits per year." NNSA, *Supplement Analysis of the 2008 Site-Wide Environmental Impact Statement for the Continued Operation of Los Alamos National Laboratory*, April 2018, at Appendix B-3. This is because DOE and NNSA issued a governing Record of Decision in 2009 that authorizes production of pits "to not exceed 20 pits per year." *Id.* at 46. And although NNSA has asserted that it previously evaluated the production of 80 pits per year in 2008, *id.*, the agency's prior analysis did not—and could not—take into account information and changed circumstances that arose after 2008.

As DOE's own Office of Enterprise Assessments found in 2019, the management of nuclear safety issues at LANL has been sorely lacking for many years and is not significantly improving. For example, "significant weaknesses" in the management of nuclear safety issues "have allowed identified problems to go uncorrected, problem recurrences to be routinely accepted, and corrective actions to often be delayed for years." DOE, *Assessment of the Management of Nuclear Safety Issues at the Los Alamos National Laboratory*, at v. These "significant weaknesses" can "allow layers of defense for nuclear safety to degrade to the extent they did leading to the pause in June 2013 of key fissile material operations in the Plutonium Facility at LANL for over four years." *Id.*

Indeed, in 2013 the director of the LANL laboratory "paused all fissile material operations in the Plutonium Facility . . . due to systemic and recurring weaknesses in the . . . criticality safety program and conduct of operations." *Id.* at 2. Moreover, "[d]ue to the scope and significance of these weaknesses that had been allowed to develop, the mitigation . . . took over four years to be completed for some of the key fissile material operations." *Id.*

DOE found that LANL suffers from serious and ongoing problems in management of nuclear safety issues. In particular, DOE has found that "insufficient attention is given to ensuring timely and effective correction of nuclear safety issues." *Id.* at 15. Likewise, "84% of the high-significance . . . issues did not have an extent-of-condition review to identify potential recurring or systemic issues"; "55% of the high-significance issues that involved nuclear safety analyses" never received documentation of their causes; and "approximately 46% of 196 high-significance issues had been closed without addressing the underlying cause of the event, and 96% of those issues lacked effectiveness evaluations." *Id.* at 2. "Numerous examples" of insufficient management of nuclear safety issues "revealed practices that allowed nuclear safety issues to be lost, closed by transfer to unrelated issues, closed with promises of future action, *or intentionally closed without taking any corrective action*." *Id*. at 18 (emphasis added).

And critically, DOE has found that LANL has shown "only limited improvement in addressing longstanding weaknesses" in the management of nuclear safety issues. *Id.* at iv. Ongoing "deficiencies in [issues management] metrics and assessments have allowed poor [issues management] practices to persist." *Id.* at 9. Indeed, DOE found that "significant weaknesses" in the management of nuclear safety issues "at LANL persist, which can lead to the degradation of nuclear safety." *Id.* at iv.

The editorial board of the Albuquerque Journal recently found that this "is a huge issue considering the lab is ramping up production on the devices that act as nuclear bomb triggers." The editorial board stated that "[f]alling short of the bare minimum in the eyes of the DOE is a far cry from where the public expects or needs LANL to be." It further emphasized that "[t]op brass must take the audit's criticisms seriously and demonstrate above-and-beyond efforts" and "make safety the lab's top mission."[18]

Although NNSA prepared a Supplement Analysis ("SA") for the ongoing operation of LANL in April 2018, which concluded that no SEIS was necessary, its discussion of the pertinent nuclear safety issues is wholly inadequate. The SA asserts that "DOE has taken actions to address the criticality safety concerns," and that "[f]ull operations, including pit manufacturing, resumed . . . in August 2016." NNSA, *Supplement Analysis of the 2008 Site-Wide Environmental Impact Statement for the Continued Operation of Los Alamos National Laboratory*, at 96. However, since NNSA issued that Supplement Analysis, DOE's own Office of Enterprise Assessments has found that the deficiencies in the management of nuclear safety issues that led to the four-year shutdown at LANL are, in fact, continuing. *See supra.* Indeed, by finding that improving the management of nuclear safety issues "will be key to safely supporting increased production rates of plutonium pits through 2030," DOE, *Assessment of the Management of Nuclear Safety Issues at the Los Alamos National Laboratory*, at v, DOE itself has revealed that the increased production of plutonium pits at LANL cannot currently be undertaken safely.

Against this backdrop of highly unreliable management of nuclear safety risks, DOE and NNSA's counterintuitive plan to not only continue, but expand, the production of plutonium pits at LANL cannot lawfully be undertaken in the absence of an SEIS. Indeed, NNSA cannot

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[18] *See* https://www.abqjournal.com/1316264/lanl-leaders-must-make-safety-the-labs-top-mission.html

credibly claim to have taken any serious look under NEPA at these ongoing nuclear safety issues, because NNSA's last Supplement Analysis was issued in 2018, while DOE's findings of ongoing nuclear safety management deficiencies were issued in 2019. More critically, because NNSA's efforts to improve the management of nuclear safety issues at LANL have clearly not worked, as DOE's own analysis has found, the agencies must take the hard look that NEPA requires at these ongoing deficiencies in nuclear safety management, and at the impacts of, and alternatives to, the proposal to expand plutonium pit production. Under these circumstances, a new or supplemental EIS is clearly necessary.

C. A Programmatic EIS is Necessary to Consider These Plainly Related Activities.

As explained, NEPA requires agencies to consider multiple actions together in a single Programmatic EIS when those "actions are 'connected,' 'cumulative,' or 'similar,' such that their environmental effects are best considered in a single impact statement." *American Bird Conservancy*, 516 F.3d at 1032 (quoting 40 C.F.R. § 1508.25(a)). Here, the expansion of plutonium pit production at LANL and the repurposing of the MOX Facility to produce plutonium pits at SRS plainly fall within the ambit of "connected," "cumulative," and "similar" actions within the meaning of NEPA, meaning that they must be considered together in a single programmatic EIS.

The expansion of plutonium pit production at LANL and the repurposing of the MOX Facility to produce plutonium pits at SRS are "connected" actions under NEPA. Connected actions "are closely related and therefore should be discussed in the same impact statement" because they "[a]re interdependent parts of a larger action and depend on the larger action for their justification." 40 C.F.R. § 1508.25(a)(1). Both the proposed expansion of plutonium pit production at LANL and the repurposing of the incomplete MOX Facility to produce plutonium pits at SRS are interdependent parts of DOE and NNSA's plan to fulfill the Trump Administration's stated goal in its 2018 Nuclear Posture Review of producing at least 80 plutonium pits per year by 2030. *See* Dep't of Defense, *Nuclear Posture Review*, at 64. Because the Administration cannot reach the Nuclear Posture Review goal without both proposed actions at LANL and SRS, and because both actions depend on the Nuclear Posture Review for their justification, these actions are "connected" under NEPA and must be considered together in a single EIS.

Likewise, both projects are "similar" because "when viewed with other reasonably foreseeable or proposed agency actions" both "have similarities that provide a basis for evaluating their environmental consequences together." 40 C.F.R. § 1508.25(a)(3). These similarities are clear. To begin with, both projects involve producing plutonium pits for nuclear weapons. Moreover, both projects are being proposed in locations where the safety of producing plutonium pits is highly questionable at best: as described above, LANL suffers from serious and ongoing deficiencies in the management of nuclear safety issues, while the MOX Facility was never designed for fabrication of plutonium pits, is still incomplete, and was the subject of fraudulent construction practices that leave the state and safety of the building highly uncertain. Finally, because both projects entail processing highly hazardous nuclear materials in facilities

with serious safety concerns, both projects are likely to have serious and similar nuclear safety issues and environmental impacts. Accordingly, both actions are "similar" under NEPA.

Furthermore, both actions also satisfy the definition of "cumulative" actions, because they will "have cumulatively significant impacts." 40 C.F.R. § 1508.25(a)(2). A cumulative impact is "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions." *Id.* § 1508.7. Here, not only will the expansion of plutonium pit production at LANL and the repurposing of the incomplete MOX Facility to produce plutonium pits each have significant impacts in their own right, but each project will also likely have cumulative environmental impacts that should be taken into account in a single EIS. For example, because each site will be performing similar activities and working with similar materials, each site will likely generate wastes that DOE and NNSA will have to determine how to treat, store, or dispose of.

Accordingly, because the expansion of plutonium pit production at LANL and the repurposing of the MOX Facility at SRS are clearly "connected," "cumulative," and "similar" actions, "their environmental effects are best considered in a single impact statement," *American Bird Conservancy*, 516 F.3d at 1032, and a PEIS is the legally and practically appropriate way to accomplish this.

Not surprisingly, therefore, DOE's own regulations require the production of a PEIS under these circumstances. DOE's regulations mandate that "[w]hen required to support a DOE programmatic decision (40 CFR 1508.18(b)(3)), DOE shall prepare a programmatic EIS." 10 C.F.R § 1021.330(a). In turn, a "DOE programmatic decision" includes the "[a]doption of programs, such as a group of concerted actions to implement a specific policy or plan; systematic and connected agency decisions allocating agency resources to implement a specific statutory program or executive directive." 40 C.F.R. § 1508.18(b)(3). Here, both proposed actions at LANL and SRS are "systematic and connected agency decisions" undertaken to implement the specific "executive directive" in the 2018 Nuclear Posture Review to produce at least 80 plutonium pits per year by 2030. Accordingly, DOE's regulations mandate the preparation of a PEIS.

In addition to the need for a PEIS being clear under NEPA and its implementing regulations, DOE is currently subject to a court order in a case brought by two of the signatories to this letter that mandates the preparation of a PEIS under the current circumstances. That order establishes the following requirement:

> Prior to taking any action that would commit DOE resources to detailed engineering design, testing, procurement, or installment of pit production capability for a capacity in excess of the level that has been analyzed in the SSM PEIS (the capacity analyzed in the SSM PEIS is the fabrication at LANL of 50 pits per year under routine conditions, and 80 pits per year under multiple shift operations), DOE shall prepare and circulate a Supplemental PEIS, in accordance with DOE NEPA regulation 10 C.F.R. § 1021.314, analyzing the reasonably foreseeable environmental impacts of and alternatives to operating such an enhanced capacity, and issue a Record of Decision based thereon.

Natural Resources Defense Council v. Pena, 20 F.Supp.2d 45, 50 (D.D.C. 1998). Because DOE and NNSA are currently devoting resources to designing a pit production capability of *at least* 80 pits per year, including a plan to produce pits at SRS, this order clearly requires the agencies to undertake a Supplemental PEIS.

Indeed, in analogous circumstances, DOE and NNSA have undertaken PEISs in the past. For example, in 1996, DOE undertook a *Stockpile Stewardship and Management PEIS* to consider relocating pit production to LANL. Likewise, in 2003, DOE undertook (but never finalized) a *Modern Pit Facility Supplemental PEIS* to analyze a possible increase in the rate of plutonium pit production. Similarly, in 2006, DOE undertook a *Complex 2030 Supplemental PEIS* to consider the modernization of the U.S. nuclear weapons program. And most recently, in 2008, the agencies undertook a *Complex Transformation Supplemental PEIS* in order to analyze alternatives for the modernization of the U.S. nuclear weapons program. Because both the agencies' plans and circumstances at both LANL and SRS have changed significantly since that time—including the new plan to radically increase the level of plutonium pit production, the demonstrated and ongoing serious safety issues at LANL, and the dubious proposition to repurpose the incomplete MOX Facility at SRS—the agencies must undertake a new or supplemental PEIS now as well.

D. DOE and NNSA Must Begin the NEPA Process Now.

Because NEPA mandates that "[a]gencies shall integrate the NEPA process with other planning *at the earliest possible time*," 40 C.F.R. § 1501.2 (emphasis added), DOE and NNSA must begin the preparation of a PEIS now. DOE and NNSA have already begun the process for deciding how to move forward with the expansion of plutonium pit production at LANL and the repurposing of the MOX Facility at SRS, and the agencies must begin preparing a PEIS now "to ensure that planning and decisions reflect environmental values." *Id.*[19]

DOE and NNSA have undertaken significant steps toward the expansion of plutonium pit production at LANL and toward the repurposing of the MOX Facility. For example, DOE has sought and obtained the concurrence of the Nuclear Weapons Council regarding the proposed actions.[20] Moreover, DOE and NNSA have already used an undisclosed amount of taxpayer funds to direct its contractor to undertake design and planning for the repurposing of the incomplete MOX Facility to produce plutonium pits.[21] Although it is not entirely clear how

[19] On October 31, 2018, the Nuclear Safety Organizations sent NNSA a similar letter explaining the need for a PEIS and requesting a response within 30 days. NNSA has not responded.

[20] *See* https://dod.defense.gov/News/News-Releases/News-Release-View/Article/1518222/joint-statement-from-ellen-m-lord-and-lisa-e-gordon-hagerty-on-recapitalization/

[21] *See* https://www.aikenstandard.com/news/srns-tasked-with-initial-work-for-savannah-river-pit-production/article_e3f15ab0-15ec-11e9-805c-d36536fe2d31.html

much money is already being spent on this effort at SRS, DOE has requested that Congress allocate $410 million toward design and planning for the repurposing of the MOX Facility.[22]

Likewise, Lisa Gordon-Hagerty, the Administrator of NNSA has testified to the House Subcommittee on Energy and Water Development that "NNSA is investing in the Savannah River Plutonium Processing Facility," and that "LANL is actively installing pit production equipment and has begun hiring to meet future work scope." Testimony Statement of Lisa Gordon-Hagerty before House Subcommittee on Energy and Water Development, April 2, 2019 ("Gordon-Hagerty Testimony"), at 5–6. Ms. Gordon-Hagerty also testified that "[r]epurposing the [MOX] Facility and producing plutonium pits at SRS and LANL is the preferred path," and that "[t]he time to move forward is now." *Id.* at 5. Similarly, Peter Fanta, a deputy assistant secretary of defense for nuclear matters, stated that "[t]here is one plan," and that NNSA must "[s]top discussing it, stop slowing it, stop looking at it again, stop looking at seven other alternatives." *See* https://www.exchangemonitor.com/dod-still-satisfied-nnsa-pit-plan-warns-civilian-agency-margin/.

However, taking a hard look at the expansion of plutonium pit production at LANL and the repurposing of the MOX Facility at SRS, and considering alternatives to this proposed plan, is precisely what NEPA requires. And because NEPA mandates that agencies undertake the NEPA process as early as possible in order to promote informed decision-making, DOE and NNSA must undertake a PEIS as soon as possible.

Until DOE and NNSA fully comply with NEPA through the preparation of a PEIS, any irreversible or irretrievable commitment of resources to either the expansion of pit production at LANL or to the repurposing of the MOX Facility at SRS is unlawful. Accordingly, we request that DOE and NNSA respond to this letter within 30 days to explain when the agencies intend to undertake the required PEIS for the expansion of plutonium pit production at LANL and the repurposing of the MOX Facility for plutonium pit production at SRS.

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Sen. Tom Udall, Senate Energy and Water Appropriations Subcommittee
Sen. Deb Fischer, Chair, Strategic Forces Subcommittee, Senate Armed Services Committee
Sen. Martin Heinrich, Ranking Member, Strategic Forces Subcommittee, SASC

[22] DOE, *FY 2020 Congressional Budget Request*, March 2019, at 121–22, *available at* https://www.energy.gov/sites/prod/files/2019/04/f62/doe-fy2020-budget-volume-1.pdf

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Attachment B

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September 17, 2019

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VIA ELECTRONIC MAIL

Re: The abiding need to prepare a new or supplemental Programmatic Environmental Impact Statement for expanded plutonium pit production at the Los Alamos National Laboratory in New Mexico and the Savannah River Site in South Carolina.

We are writing on behalf of the public interest organizations the Natural Resources Defense Council, Nuclear Watch New Mexico, Savannah River Site Watch, and Tri-Valley Communities Against a Radioactive Environment to advise the Department of Energy ("DOE") and the National Nuclear Security Administration ("NNSA") of the continuing need to prepare a Programmatic Environmental Impact Statement ("PEIS") for the proposal to produce plutonium pits—the cores of nuclear weapons—at both the Los Alamos National Laboratory ("LANL") in New Mexico and the Savannah River Site ("SRS") in South Carolina.

We sent a letter on May 17, 2019 explaining the need for a PEIS for the new proposal to produce plutonium pits at multiple sites, and explaining that DOE's and NNSA's failure at that time to undertake *any* NEPA process regarding this new proposal was a violation of the National Environmental Policy Act ("NEPA"). For your convenience, a copy of that letter is attached. Although NNSA failed to respond directly in writing to that letter, DOE and NNSA did apparently respond to our letter by taking some steps toward compliance with NEPA. In particular, DOE and NNSA announced on May 31, 2019 that they would prepare a site-specific Environmental Impact Statement ("EIS") in association with the proposal to produce plutonium pits at SRS, and that they would prepare a Supplement Analysis ("SA") to consider whether to

prepare a new or supplemental PEIS in association with the proposal to produce plutonium pits at multiple sites.[1]

Since then, DOE and NNSA have issued a scoping notice for the EIS process at SRS and a Draft SA, both of which were made available for public comment. The public interest organizations represented in this letter, as well as in our previous letter, submitted comments at each available opportunity. Those comments explain in detail certain flaws in the limited analytic process that DOE and NNSA have chosen to undertake and have provided detailed suggestions for how to improve this process. For your convenience, copies of those comments are attached. We write today to reinforce the points made in these various comments and to explain why, as an overarching matter, DOE and NNSA's apparent refusal to prepare any new or supplemental programmatic environmental analysis of its indisputably programmatic decision to produce plutonium pits at multiple locations continues to violate fundamental NEPA principles.[2]

The NEPA process's "core focus [is] on improving agency decisionmaking," *Dep't of Transp. v. Pub. Citizen*, 541 U.S. 752, 769 n.2 (2004), and specifically on ensuring that agencies take a "hard look" at potential environmental impacts and alternatives "as part of the agency's process of deciding whether to pursue a particular federal action," *Balt. Gas & Elec. Co. v. Nat. Res. Def. Council*, 462 U.S. 87, 100 (1983). As such, the NEPA process "shall serve as the means of assessing the environmental impact of proposed agency actions, *rather than justifying decisions already made*." 40 C.F.R. § 1502.2(g) (emphasis added); *see also id.* § 1502.5 (requiring that NEPA review "shall be prepared early enough *so that it can serve practically as an important contribution to the decision making process* and *will not be used to rationalize or justify decisions already made*" (emphasis added)). To ensure that agencies take a holistic view of their actions, NEPA mandates that any EIS must consider "connected," "cumulative," and "similar" actions. 40 C.F.R. § 1508.25(a). A PEIS is necessary where "actions are 'connected,' 'cumulative,' or 'similar,' such that their environmental effects are best considered in a single impact statement." *Am. Bird Conservancy v. Fed. Commc'n Comm'n*, 516 F.3d 1027, 1032 (D.C. Cir. 2008) (quoting 40 C.F.R. § 1508.25(a)).

DOE's and NNSA's refusal to prepare any new or supplemental PEIS for its new plan to produce plutonium pits at two locations is a profound violation of these fundamental NEPA principles. To begin with, the Draft SA and the proposed EIS presume that plutonium pit production will occur at two sites, and particularly at the two sites at LANL and SRS. As such, DOE and NNSA have entirely failed to consider alternatives to the proposal to produce plutonium pits at multiple locations. For example, since the Trump Administration's 2018 Nuclear Posture Review concluded that the United States must produce at least 80 pits annually,

[1] *See* Notice of Intent to Prepare an Environmental Impact Statement for Plutonium Pit Production at the Savannah River Site, 84 Fed. Reg. 26849 (June 10, 2019) (describing the notice as having been signed May 31, 2019).

[2] We respectfully request that NNSA take this letter into consideration as it decides whether to prepare a new or supplemental PEIS, and to include this letter in the administrative record for any final decision that the agency makes.

no NEPA process has considered whether plutonium pit production could be achieved more safely and with fewer environmental impacts at a single location, or even at multiple locations that are closer to one another than LANL and SRS, which are separated by over a thousand miles. Although NNSA has evidently undertaken some internal decision-making process regarding these questions, it has avoided doing so through the NEPA process that Congress specifically designed for this purpose. Likewise, because this agency decision-making has occurred largely internally, DOE and NNSA have cut the public out of the process for deciding to produce plutonium pits at multiple locations, despite the fact that informed public comment is one of NEPA's key objectives.

Instead of conducting any objective NEPA analysis for the decision to produce plutonium pits at multiple locations, or considering any alternatives to this decision in the NEPA framework, DOE and NNSA have instead decided to prepare an SA to determine whether a new or supplemental PEIS is appropriate. Moreover, the agencies' analysis in their Draft SA reveals that the agencies are not aiming to utilize the NEPA process to inform a pending decision, but instead are impermissibly using the Draft SA to justify a decision that has already been made. Thus, the Draft SA merely considers some of the impacts of producing plutonium pits at LANL and SRS, but fails to actually consider any alternatives to utilizing multiple sites to produce pits. As such, the agencies' Draft SA inappropriately turns the NEPA process on its head: rather than serving to inform the decision to produce plutonium pits at multiple sites, the agencies instead are apparently making that decision first and preparing an ostensible NEPA analysis after. This leap-before-you-look process is exactly the opposite of what NEPA requires.

Indeed, as is explained in the attached comments submitted on the Draft SA, the agencies have framed the entire inquiry of the Draft SA incorrectly, again revealing the impermissibly *post hoc* nature of the agencies' ostensible effort to comply with NEPA. NEPA's implementing regulations require agencies to prepare supplemental environmental impact statement ("SEIS") where "[t]he agency makes substantial changes in the proposed action that are relevant to environmental concerns; or [t]here are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts." 40 C.F.R. § 1502.9(c)(1); *see also* 10 C.F.R. § 1021.314 (DOE regulations echoing this requirement). However, the Draft SA does not even attempt to grapple with these questions. Instead, the Draft SA focuses on a conceptually distinct inquiry: namely, whether "the potential impacts of the proposed action exceed those in the Complex Transformation SPEIS." Draft SA at 26. In other words, rather than taking a hard look at the nature of the changes in the plutonium pit production program, or at new information that bears on the risks and environmental impacts of the agencies' new proposal, DOE and NNSA are instead merely inquiring whether the impacts from producing plutonium pits at multiple sites are "bounded" by the impacts considered in a previous analysis. *See*, *e.g.*, Draft SA at 29–36 (asserting that various types of impacts are "bounded" by analysis in the 2008 Complex Transformation SPEIS).

DOE's and NNSA's reliance on a "bounding" analysis in this instance is entirely inappropriate—as DOE's own policies explain. Neither NEPA itself, nor its implementing

regulations, nor DOE's own NEPA policies countenance such reliance on a bounding analysis for the instant situation. As DOE itself has recognized, "*bounding analyses should not be used where more accurate and detailed assessment is possible and would better serve the purposes of NEPA.*"[3] Likewise, DOE's own policies recognize that "*[i]t is never appropriate to "bound" the environmental impacts of potential future actions (not yet proposed) and argue later that additional NEPA analysis is unnecessary because the impacts have been bounded by the original analysis*."[4]

The reliance on a "bounding" analysis here is also a violation of fundamental NEPA principles because it wrongly leads NNSA to ignore or discount the significantly changed circumstances and important new information that necessitates preparation of a new or supplemental PEIS here. No previous analysis "bounds" or even remotely contemplated the major federal actions at issue here. The comments submitted on the Draft SA, and attached and incorporated by reference here, detail numerous changed circumstances and new information that, under basic NEPA principles, require a new or supplemental PEIS. For brevity's sake, this letter does not reproduce all of those changed circumstances and new information. However, as an example, the fact that DOE and NNSA have conceded that they must prepare an EIS for the plan to produce plutonium pits at the "repurposed" Mixed Oxide Fuel Fabrication Facility (MFFF) at SRS is itself a sufficient indication of a profoundly changed circumstance that warrants preparation of a new or supplemental PEIS.

By conceding that an EIS is necessary for repurposing the MFFF to produce plutonium pits—a process for which that facility was never designed, and which is especially hazardous at that facility given that it was never completed and was subject to extensive construction-related fraud—DOE and NNSA have recognized that the proposal to produce plutonium pits at that site entails significant environmental impacts that have never previously been analyzed. As such, this development constitutes a significant changed circumstance from anything NNSA previously considered in any PEIS. Indeed, NNSA leaves no room to doubt that this new circumstance is itself "significant" within the meaning of NEPA, as the Draft SA itself describes the cancellation of the MFFF as a "significant change." Accordingly, even setting aside the numerous other changed circumstances and the plethora of new information described in the attached comments, the proposal to produce plutonium pits at SRS as well as LANL by itself is sufficient to require the preparation of a new or supplemental PEIS.[5]

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[3] *Mini-guidance Articles from Lessons Learned Quarterly Reports, December 1994 to September 2005*, p. 2-4, USDOE Office of NEPA Policy and Compliance, October 2005, https://www.energy.gov/sites/prod/files/miniguidance-20110511.pdf (emphasis added).

[4] *Id.* (emphasis added).

[5] Although the Draft SA misleadingly asserts that NNSA previously analyzed an alternative that involved producing plutonium pits using the MFFF infrastructure, in fact the agency's 2008 Complex Transformation PEIS mentioned this prospect only cursorily and in passing, failing to take the "hard look" that NEPA requires. Moreover, since NNSA issued the 2008 Complex Transformation PEIS, the MFFF has encountered highly significant obstacles that bear directly on the viability of, and environmental impacts from, using this facility for the highly hazardous process of producing plutonium pits. Indeed, these obstacles were so significant that NNSA recently cancelled the

Finally, in addition to a new or supplemental PEIS being clearly necessary under NEPA's implementing regulations and DOE's own regulations (as described in the attached comments), as a separate matter DOE and NNSA remain subject to a court order that mandates the preparation of a new PEIS under these circumstances. That order establishes that:

> Prior to taking any action that would commit DOE resources to detailed engineering design, testing, procurement, or installment of pit production capability for a capacity in excess of the level that has been analyzed in the SSM PEIS (the capacity analyzed in the SSM PEIS is the fabrication at LANL of 50 pits per year under routine conditions, and 80 pits per year under multiple shift operations), *DOE shall prepare and circulate a Supplemental PEIS*, in accordance with DOE NEPA regulation 10 C.F.R. § 1021.314, *analyzing the reasonably foreseeable environmental impacts of and alternatives to operating such an enhanced capacity, and issue a Record of Decision based thereon*.

Nat. Res. Def. Council v. Pena, 20 F. Supp. 2d 45, 50 (D.D.C. 1998) (emphasis added). DOE and NNSA's proposal to produce at least 80 pits per year, and to do so at multiple sites, is plainly "in excess of the level that has been analyzed" previously. *Id.* Accordingly, the plain terms of this court order require the agencies to prepare a new or supplemental PEIS for this decision. We remind DOE and NNSA that the Natural Resources Defense Council and Tri Valley Communities Against a Radioactive Environment were parties to this court order and advise the agencies that these entities remain ready to enforce this order if necessary.

At bottom, it appears that DOE and NNSA are attempting to circumvent NEPA by impermissibly separating analysis of proposed activities at LANL and SRS into separate environmental reviews, when in fact a programmatic review is necessary for this plainly programmatic action. Moreover, it appears that the agencies are motivated mainly by haste, because they remain uncertain about their logistical ability to achieve their desired level of pit production by 2030. However, we advise the agencies that timely compliance with NEPA is the best means for the agencies to keep these projects on track, as a failure to rigorously comply with NEPA may necessitate litigation, including if necessary motions for injunctive relief, all of which would likely increase the expense of DOE's and NNSA's proposed actions and extend their timelines further. Accordingly, we strongly encourage DOE and NNSA to come into compliance with NEPA by preparing a new or supplemental PEIS for its proposals regarding plutonium pit production, and to do so immediately. If the agencies continue on their current trajectory, we will have no

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completion of the MFFF altogether and brought a lawsuit against the facility's contractor to seek damages associated with construction-related fraud. These developments plainly reveal that the situation surrounding the MFFF facility has changed in significant ways since 2008. In reality, the Complex Transformation PEIS plainly did not consider any impacts associated with the profoundly changed circumstances surrounding the MFFF—namely, the fact that it was fraught with construction fraud and abandoned in a partially completed state.

choice but to evaluate all our options to enforce compliance with federal environmental laws.

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Sen. Martin Heinrich, Ranking Member, Strategic Forces Subcommittee, SASC
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Attachment C

19 May 2020

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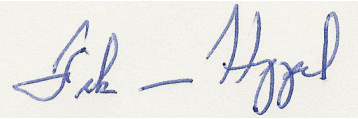
Re: "Draft EIS for Plutonium Pit Production at the SRS in South Carolina"

Comments on National Nuclear Security Administration's *Draft Environmental Impact Statement for Plutonium Pit Production at the Savannah River Site in South Carolina*, DOE/EIS-0541.



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Draft EIS is posted here on NNSA's website:
https://www.energy.gov/nepa/downloads/doeeis-0541-draft-environmental-impact-statement

Summary

Irrespective of its other merits or demerits, the *Draft EIS* does not provide a rationale for urgently building pit-production capacity at the Savannah River Site (SRS) in parallel to establishing a pit-production capacity at the Los Alamos National Laboratory (LANL).

Technically, my comments would support the "no-action" alternative but they are really an argument for deferring the decision on an SRS pit-production facility for a decade.

A decade delay would:

1. Make it possible to see whether the production line at LANL – presumably the model for the production line at SRS – works or needs to be redesigned.
2. Provide an opportunity for pit experts at LANL and Livermore National Laboratory (LLNL), peer-reviewed by the JASON group, to determine a new lower bound on the functional life of the remarkably durable pits in the current stockpile.
3. Make it possible to settle the national policy debate over scrapping US intercontinental ballistic missiles (ICBMs), which would make it unnecessary to replace the W78 ICBM warhead.

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4. Provide time for a decision on whether to replace the W76 and W88 submarine-launched ballistic missile (SLBM) warheads and, if so, determine whether the new warheads could be made with refurbished stored pits or require the manufacture of new pits.
5. Allow a broader-scope and deeper review in a Programmatic Environmental Impact Statement of the tradeoffs associated with pit production and reuse before finalizing the site-specific NEPA documents.

The discussion below therefore explains the following assertions:

1. ***The pit production facility at Los Alamos National Laboratory (LANL) would, in effect, serve as a pilot plant for the proposed pit-production facility at the Savannah River Site. The LANL design must therefore be shown to work to establish confidence in the scaled-up version proposed for SRS.***
2. ***The JASON 2019 review of pit longevity found that NNSA has not adequately sustained the research program that a 2007 JASON review report concluded had established that most of the pits in the existing US warhead stockpile could be expected to be functional for at least a century, i.e. for at least another 50 years. NNSA recently committed to resource that program more adequately so that it can be determined if the pits are likely to continue to be functional for significantly longer than a century.***
3. ***The need to manufacture more pits of existing or new types has not been settled.***
4. ***A Programmatic EIS is required.***

1. The LANL Pit Production Facility is a Pilot for the SRS Facility

The pits in the current US nuclear stockpile were almost all produced at the Rocky Flats Plant in Colorado, which operated from 1952 till 1989 and, in its later decades, produced about 1,000 pits per year.[2] That plant was shut down permanently in 1992 because of its releases of hazardous materials into the environment.[3]

In 1993, DOE asked LANL to establish a pit manufacturing capability at its PF-4 plutonium facility and, in 1996, tasked it to produce 31 "war reserve" W88 pits to fill an order that had not been completed because of the shutdown of Rocky Flats. It took the PF-4 facility 16 years, until 2012, to fabricate the pits: eleven in 2007, and a declining number annually thereafter.[4]

The plan was to transition to the production of W87 pits for the US Minuteman III intercontinental ballistic missile but pit production was shut down by safety problems in 2013.[5] Pit production at PF-4 is still shut down and NNSA's budget submission for fiscal year 2021 states that it is engaged in

[2] NNSA, "Plutonium Pit Production," April 2019, https://www.energy.gov/sites/prod/files/2019/05/f62/2019-05-13-FACTSHEET-plutonium-pits.pdf.
[3] Dana Coffield, "Judge Upholds Plea-Bargain on Rocky Flats; Rockwell To Pay $18.5 Million Fine" (Associated Press, 1 June 1992) https://apnews.com/7b90ebb526dc79de86f4123a6b1fa979.
[4] Bradford G. Storey, *Pit Manufacturing Fiscal Year 2012 Program Report to the University of California* (LANL, 2012) Table 1, https://www.lasg.org/MPF2/LA-UR-12-25400_Pit_manuf_rpt_UC_FY2012.pdf.
[5] R. Jeffrey Smith and Patrick Malone, "Safety problems at a Los Alamos laboratory delay U.S. nuclear warhead testing and production," *Science*, 30 June 2017, https://www.sciencemag.org/news/2017/06/safety-problems-los-alamos-laboratory-delay-us-nuclear-warhead-testing-and-production.

> "activities to hire, train, qualify, and retain required pit production personnel, recapitalization of equipment needed to restore Plutonium Facility (PF)-4's ability to produce War Reserve (WR) [pits,] towards producing the first WR pit during 2023 [and] manage capital acquisitions to increase production capability of PF-4 to produce 10 pits per year."[6]

NNSA's goal is to produce 30 pits in 2026. The cost of the planned upgrades to PF-4 is estimated at $1.75 billion through FY2025 with the total cost to be determined.[7]

Given that LANL's PF-4 facility, the location of the nation's current pit production capabilities, has produced only 30 pits in a quarter century and is struggling to reestablish production by 2026, one wonders who is going to design the plutonium-pit production facility at SRS and train its workers? It would appear more prudent to let LANL prove its equipment and personnel-training abilities at Los Alamos first rather than stretch it thinner by establishing a parallel effort at SRS, which has no pit production experience whatsoever.

2. The alternative of pit reuse

Delaying the SRS pit production facility by refurbishing and reusing existing pits during the life extension of existing warheads and the production of replacement warheads beyond 2030 is dismissed by a vague statement in the draft EIS (at Vol. 1, section 2.3.4):

> "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. Consequently, only reusing pits was eliminated from detailed analysis."

A more substantive analysis is required – preferably in a Programmatic Environmental Impact Statement that would cover the contributions of the Kansas City Plant and LLNL as well as SRS, LANL and Pantex. Some relevant considerations are sketched here.

As already noted, almost all the pits currently in the US operational nuclear-warhead stockpile were produced between 1978 and 1989, which makes the oldest pits about 40 years old.[8]

The question is, how much longer will they last?

The 2005 Defense Authorization Act directed NNSA's Administrator to commission an independent review of the efforts at LANL and LLNL to estimate pit lifetimes. The review was carried out by the JASON group of independent consultants and an unclassified summary of its findings was released in early 2007.[9]

The laboratories had been assessing the effects of aging effects on the functionality of US pits. They also had been doing accelerated-aging experiments on new samples of the plutonium alloy used in US pits by spiking them with Pu-238, which decays by alpha emission with a half-life of 88 years vs. 24,000 years for the dominant isotope in weapon-grade plutonium, Pu-239.

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[6] Department of Energy *FY 2021 Congressional Budget Request*. Vol 1. "National Nuclear Security Administration," p. 160.
[7] *Ibid.* pp. 195, 195.
[8] Steve Fetter and Frank von Hippel, "Does the United States Need a New Plutonium-Pit Facility?" *Arms Control Today,* May 2004, Table 1, https://www.armscontrol.org/act/2004-05/features/does-united-states-need-new-plutonium-pit-facility.
[9] JASON, *Pit Lifetime* (MITRE Corporation, 2007) https://fas.org/irp/agency/dod/jason/pit.pdf.

The summary conclusion of the 2007 JASON report was,

> "We judge that the Los Alamos/Livermore assessment provides a scientifically valid framework for evaluating pit lifetimes. The assessment demonstrates that there is no degradation in performance of primaries of stockpile systems due to plutonium aging that would be cause for near-term concern regarding their safety and reliability. Most primary types have credible minimum lifetimes in excess of 100 years as regards aging of plutonium; those with assessed minimum lifetimes of 100 years or less have clear mitigation paths that are proposed and/or being implemented."

The JASON report also recommended additional research (pp. 17-18):

> "to gain experience with Pu that has suffered the equivalent of a century or more of aging (i.e., with accelerated aging), thereby allowing an interpolation rather than an extrapolation in estimating performance changes and degradation due to aging. In particular, one wants to know the modes of failure that will be among the first to appear, because these can inform the stockpile surveillance program in order to make it most sensitive to aging-induced degradation [and] ongoing study of the current accelerated-aging Pu samples, which are spiked with the rapidly-decaying ^{238}Pu, as well as production of samples that have been aged by alternative means. In all of these cases, the objective is to get the equivalent of multi-century experience on aging phenomena, associated with decay (e.g., radiation damage) as well as with activated processes such as annealing."[10]

At least some work on accelerated aging did continue and, in 2012, the Lawrence Livermore National Laboratory (LLNL) reported

> "no unexpected aging issues are appearing in plutonium that has been accelerated to an equivalent of ~ 150 years of age." [11]

The deputy program leader for enhanced surveillance of pit aging at Livermore was quoted as saying,

> "In the near term, the nation can save tens of billions of dollars that might be required to build a new production facility,"

In March 2018, the Senate, in its report on the Energy and Water Appropriations Act for FY2019 directed the NNSA administrator to contract with JASON to do an update on its 2007 report and

> "assess the efforts of the NNSA to understand plutonium aging and the lifetime of plutonium pits in nuclear weapons [and] 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 lifetimes for pits in current warheads, and the feasibility of reusing pits in modified nuclear weapons. The report shall be submitted in unclassified form but may include a classified annex.[12]

The Senate also instructed that the NNSA "Administrator shall make available all information that is necessary to successfully complete a meaningful study on a timely basis."

JASON submitted a "letter report" on 23 November 2019 that informed Congress that[13]

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[10] Not mentioned in the published JASON reports is the possibility that older retired pits may be available all the way back to the 1940s that could provide additional data on plutonium aging out to 75 years.
[11] "Plutonium at 150 years," (Lawrence Livermore National Laboratory, 14 December 2012) https://www.llnl.gov/news/plutonium-150-years.
[12] Senate Report, *Energy and Water Development Appropriations Bill, 2019*, p. 104, https://www.congress.gov/115/crpt/srpt258/CRPT-115srpt258.pdf.
[13] JASON letter report, 23 November 2019, https://fas.org/irp/agency/dod/jason/pit-aging.pdf.

> "in general, studies on Pu aging and its impacts on the performance of nuclear-weapon primaries have not been sufficiently prioritized over the past decade. A focused program of experiments, theory, and simulations is required to determine the timescales over which Pu aging may lead to an unacceptable degradation of primary performance."

The JASON letter also suggests that, contrary to Congress's instruction, NNSA did not cooperate adequately with the review:

> "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."

Laudably, NNSA was embarrassed by this fiasco and, on 6 April 2020, Administrator Lisa E. Gordon-Hagerty informed the Chairman of the Senate Armed Services Committee Subcommittee on Strategic Forces that NNSA planned to fund a second phase of the JASON study during the summer of 2020 to[14]

> "Assess the need for the full study, and if deemed necessary and timely, perform a more detailed, multi-year JASON study."

The letter also stated that

> "NNSA has launched an enhanced program focused on understanding the potential effects of plutonium radioactive decay, or aging, on pit performance.

Therefore, within a decade, important new information on pit aging should be available to inform a decision on whether a second pit production facility will be required.

3. The need to produce new pits for new warheads

In addition to its concern about possible aging effects in the plutonium of the legacy pits, NNSA argues that the new facility is required "for producing pits with enhanced safety features to meet NNSA and DoD requirements" (Vol. 1, Sec. 1.3.2). There is no elaboration on this claim in the Draft EIS, but I am able provide some information because I was involved in this discussion almost 30 years ago, during the launch of the Stockpile Stewardship Program by the Clinton Administration.[15]

At the time, the weapon labs were proposing to replace the W78 ICBM warhead and the W76 and W88 submarine-launched ballistic missile (SLBM) warheads with warheads containing insensitive high explosive (IHE). That proposal has been sustained over the decades since through a number of incarnations, including proposals for warheads that would be "interoperable" between the ICBMs and SLBMs, but actually would have different variants for the ICBMs and SLBMs because of different fuses, reentry vehicles, etc., the benefit being a reduction in the size of the reserve warhead stockpile.[16]

The main argument, however, was for insensitive high explosive.

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[14] Lisa E. Gordon Haggerty to Senator Deb Fischer, 6 April 2020, https://fas.org/irp/agency/dod/jason/pit-aging.pdf.
[15] Frank von Hippel, "The Decision to End U.S. Nuclear Testing," *Arms Control Today,* December 2019, https://www.armscontrol.org/act/2019-12/features/decision-end-us-nuclear-testing.
[16] Lisbeth Gronlund, *Bad Math on New Nuclear Weapons: The Costs of the 3+2 Plan Outweigh Its Benefits* (Union of Concerned Scientists, 2015), https://www.ucsusa.org/sites/default/files/attach/2015/11/Bad-Math-Nuclear-Weapons-3-Plus-2.pdf.

The purpose of IHE is not to reduce the probability of an accidental nuclear explosion. Other elements of the safety design are supposed to do that, and, thus far, no warhead accident has resulted in a nuclear yield. The benefit from the use of IHE would be to reduce the number of accidents in which the chemical explosive around the pit detonates and disperses plutonium.[17] There were many such accidents involving aircraft-carried warheads prior to the decision in 1968 not to fly nuclear-armed aircraft in peacetime.[18] The Navy has had no such accidents with SLBM warheads, however, and therefore has in the past not been willing to invest in adapting new IHE warheads to its SLBMs, including flight tests.

It appears, however, that the Navy has finally acquiesced or been overruled on this matter and the plan is to replace its two SLBM warheads, the W76 and W88, with new IHE warheads.

As I understand it, the current proposal is to build two new IHE warheads: the W87-1, which would replace the W-78 on the "Ground-Based Strategic Deterrent" (GBSD), the successor to the Minuteman III missile and potentially also the W-88 the high-yield warhead on the Trident II submarine-launched ballistic missile. A second warhead, sometimes referred to as the W93, would replace the W76.[19] Recent news reports indicate that the US is coordinating with the UK on the W93, since the warhead on the UK's SLBMs is closely related to the W76 and the US and UK SLBMs come from a shared pool of missiles.[20]

W87-1. The pit of the W87-1 would be identical to the pit of the W87-0, a warhead originally developed for the MX ICBM. W87-0s are currently deployed on the Minuteman III, and the plan is to use both W87-0s and W87-1s on the GBSD.[21] The 400 Minuteman IIIs are to be replaced one-for-one with GBSDs, which is, like the Minuteman III, to be deployed with only a single warhead per missile.

DOD reportedly has 540 W87-0s in stock with 200 deployed on the Minuteman III along with 200 W78s. [22] Therefore, the W78s, could be replaced with stored W87-0s.

In fact, as the *Draft EIS* notes, this same point was made during the EIS scoping process:

> "There is a straight-forward alternative available right now that would lead to all the warheads on U.S. land-based missiles using insensitive explosives: that is to replace the W78s with W87 warheads currently in storage." (I, Table 1-1)

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[17] S.D. Drell, John Foster and Charles Townes, *Nuclear Weapons Safety: Report of the Panel on Nuclear Weapons Safety* of the House Committee on Armed Services, 1990, https://fas.org/nuke/guide/usa/drell-safety.pdf.

[18] Department of Defense, *Narrative Summaries of Accidents Involving U.S. Nuclear Weapons, 1950-1980,* https://nsarchive.files.wordpress.com/2010/04/635.pdf.

[19] DOD's *Nuclear Weapons Matters Handbook 2020,* Figure 4.2, shows the W78 being replaced by the W87-1 beginning around 2030. The W87 and W88 are shown as being replaced beginning sometime around 2035-40, and the W76 is shown as being replaced beginning sometime around 2040-55. Their replacements are designated only as FBW (Future Ballistic Warheads), https://www.acq.osd.mil/ncbdp/nm/nmhb/chapters/chapter4.htm.

[20] "Planned W93 Warhead Will Contribute to new U.K. Nuke, DOD Officials Say," *Defense Daily*, 13 February 2020, https://www.defensedaily.com/planned-w93-warhead-will-contribute-new-u-k-nuke-dod-officials-say/nuclear-modernization/; Andrew Chuter, "Britain confirms new nuclear warhead project after US officials spill the beans," *Defense News*, 25 February 2020, https://www.defensenews.com/global/europe/2020/02/25/britain-confirms-new-nuclear-warhead-project-after-us-officials-spill-the-beans/; Dan Leone,

[21] *NNSA Has Taken Steps to Prepare to Restart a Program to Replace the W78 Warhead Capability* (US Government Accountability Office, 2018) Footnote 9, https://www.gao.gov/assets/700/695759.pdf.

[22] Hans M. Kristensen and Matt Korda, "United States nuclear forces, 2020," *Bulletin of the Atomic Scientists*, 2020, Vol. 76, NO. 1, 46–60, Table 1, note d, https://doi.org/10.1080/00963402.2019.1701286.

Although the *Draft EIS* states in Vol. 1, p.14 that "[c]omments were considered in preparing this Draft EIS, I do not see any response to this comment.

DOD prefers to have two types of warheads available for each missile in case one type develops a problem but, because the W87-1 would have the same "physics package" as the W87-0, it would provide much less diversity than having a different warhead type.

It is possible also that DOD wishes to preserve the option of loading more warheads onto the GBSD in case of a breakdown in nuclear arms control with Russia. In the Clinton Administration's Nuclear Posture Review, this was called the "warhead upload hedge"[23] To get three W87s on a GBSD would require a larger-diameter third stage than the Minuteman III has. Northrup-Grumman's GBSD appears to have such a larger-diameter third stage.[24]

To fully load up every deployed GBSD with three warheads would require 1200 warheads, which would require more W87-1s and therefore more pits. No realistic circumstance that would require uploading the US ICBMs again has been suggested, however. In fact, the downloading to one warhead each was done to make the deterrent relationship with Russia more stable. Destroying one US warhead in a first strike would require more than one Russian warhead. Furthermore, in 2013, the Joint Chiefs reportedly informed President Obama that they could cover all essential targets in potential adversary nations with one third fewer warheads than the 1550 counted warheads allowed by New START.[25]

Also, many respected defense experts, including former Secretary of Defense Perry, argue that the US should abandon fixed land-based ICBMs because they are targetable, which has resulted in Strategic Command keeping them in a dangerous launch-on-warning posture.[26]

The *Draft EIS* is silent on these critical considerations.

W93. Relatively little firm information has been made public about the design of the proposed W93. NNSA's *Fiscal Year 2020 Stockpile Stewardship and Management Plan* describes "the Next Navy Warhead," as "not yet an established program of record."[27]

An anonymous "senior defense official" has asserted, however, that the W93 would be "previously nuclear-tested designs, it's not going to require any nuclear testing."[28] This must mean that a previously tested IHE primary would be used.

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[23] US Department of Defense, "Nuclear Posture Review," 19, https://fas.org/nuke/guide/usa/doctrine/dod/npr-slides-1994.pdf

[24] This was pointed out by Hans Kristensen, 17 September 2019, https://twitter.com/nukestrat/status/1173971761634926592; see also the Northrup-Grumman cutaway, https://news.northropgrumman.com/news/features/northrop-grumman-celebrates-60-years-supporting-air-forces-intercontinental-ballistic-missile-mission.

[25] David Sanger, "Obama to Renew Drive for Cuts in Nuclear Arms," *New York Times,* 10 February 2013, https://www.nytimes.com/2013/02/11/us/politics/obama-to-renew-drive-for-cuts-in-nuclear-arms.html. New START counting rules count each strategic nuclear bomber as a single warhead even though they could each carry many.

[26] William Perry, "Why It's Safe to Scrap America's ICBMs," *New York Times*, 30 September 2016, https://www.nytimes.com/2016/09/30/opinion/why-its-safe-to-scrap-americas-icbms.html.

[27] *Fiscal Year 2020 Stockpile Stewardship and Management Plan* (NNSA, 2019) p. 2-37, footnote 1, https://www.energy.gov/sites/prod/files/2019/08/f65/FY2020__SSMP.pdf.

[28] Patrick Tucker, "A New Nuclear Warhead? STRATCOM Chief Can't Answer Yes or No," *Defense One,* 27 February 2020, https://www.defenseone.com/politics/2020/02/new-nuclear-warhead-stratcom-chief-cant-answer-yes-or-no/163395/.

In 1990, in hearings before the Senate Appropriations Committee's Subcommittee on Energy and Water, DOE's then Deputy Assistant Secretary of Energy for Military Applications listed all US nuclear weapons with insensitive high explosive, including those that had been produced and deployed and some that were tested but not deployed as a result of the end of the Cold War:[29]

- B61-3, -4, -6, -8, -9, -10 tactical and B61-7 strategic bombs
- [Deleted]
- W80-0, -1 sea- and air-launched cruise missile warheads,
- B83 and B83-ALT 904 strategic bombs,
- W-84 warheads for the ground-launched cruise missile,
- W-85 warheads for the Pershing II intermediate-range ballistic missile,
- W87-0, -ALT 323, -1, ICBM warheads
- W89 SRAM II warhead (cancelled in Phase 3 development[30])
- B90 NSB, -NDB strike and depth bombs (cancelled in Phase 3 development[31])
- W91 warhead for the short-range (air-to-ground) attack missile, tactical, SRAM-T and for the follow-on to the Lance tactical missile warhead[32] (cancelled in Phase 3 development[33]).

If pits are used from warheads that were produced and retired, there will be no need to make new pits. If pits are selected from warheads that were tested but not produced or were not produced in sufficient numbers, then new pits will have to be produced. However, the production of pits that may or may not be needed for a warhead whose design has not yet been decided should not be used as a justification for urgently expanding US pit-production capacity beyond the currently planned expansion at LANL.

4. Need for a Programmatic EIS on Pit Production

The above issues should be dealt with in the Final EIS for Plutonium at SRS. They also require, however, a Programmatic EIS on the proposal for pit production, inspection, lifetime estimation, refurbishment and reuse in NNSA's larger complex, including the Kansas City Plant and LLNL as well as LANL, Pantex and SRS.

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[29] Senate Appropriations Committee Subcommittee on Energy and Water Development, *Hearing on H.R. 5019, An Act Making Appropriations for Energy and Water Development for the Fiscal Year Ending September 30, 1991, and for Other Purposes,* p. 303.

[30] https://en.wikipedia.org/wiki/W89; development phases are described in https://www.energy.gov/sites/prod/files/2018/06/f53/6x%20process.pdf.

[31] https://en.wikipedia.org/wiki/B90_nuclear_bomb

[32] House Appropriations Committee Subcommittee on Energy and Water Development, Hearings, Part 6, 12 March 1990, p. 584.

[33] https://en.wikipedia.org/wiki/W91.