

National Nuclear Security Administration, U.S. Department of Energy

Surplus Plutonium Disposition Program

Draft Environmental Impact Statement

Questions & Answers

Why is the National Nuclear Security Administration (NNSA) preparing an environmental impact statement (EIS) for the Surplus Plutonium Disposition Program?

The National Environmental Policy Act of 1969 (NEPA) requires federal agencies to prepare an EIS for any major action that may significantly affect the quality of the human environment. The purpose of the EIS is to evaluate and describe potential effects on the human environment that could occur as a result of a proposed federal action. In addition, the EIS (1) provides public officials the ability to consider the environmental and related social and economic effects of the proposed action and any alternative actions and (2) provides opportunities for public involvement.

The United States (U.S.) Department of Energy’s (DOE’s) NNSA prepared the Surplus Plutonium Disposition Program (SPDP) Draft EIS to identify a proposed action and evaluate alternatives for safely and securely dispositioning 34 metric tons (MT) of surplus plutonium. NNSA’s preferred alternative is the dilute and dispose strategy. The 34 MT of surplus pit and non-pit plutonium are excess to the defense needs of the United States.

What are the steps in the environmental impact statement process?

An EIS describes potential effects on the human environment that may occur as a result of a proposed federal action. The EIS process is conducted in several phases, as shown in the diagram below: (1) NNSA publishes a Notice of Intent (NOI) to prepare an EIS; (2) during a public scoping period, NNSA collects and considers comments from the public on the proposed scope of the EIS; (3) NNSA publishes a Notice of Availability (NOA) to announce the availability of the Draft EIS for public review and comment; (4) the Draft EIS is distributed for public review for a period of at least 45 days; (5) the EIS is revised, as needed, in response to public comments and NNSA issues a Final EIS by publishing an NOA; and (6) NNSA documents decisions regarding actions to be taken by issuing a Record of Decision. Dates associated with the process steps for the SPDP EIS are shown in Figure 1.

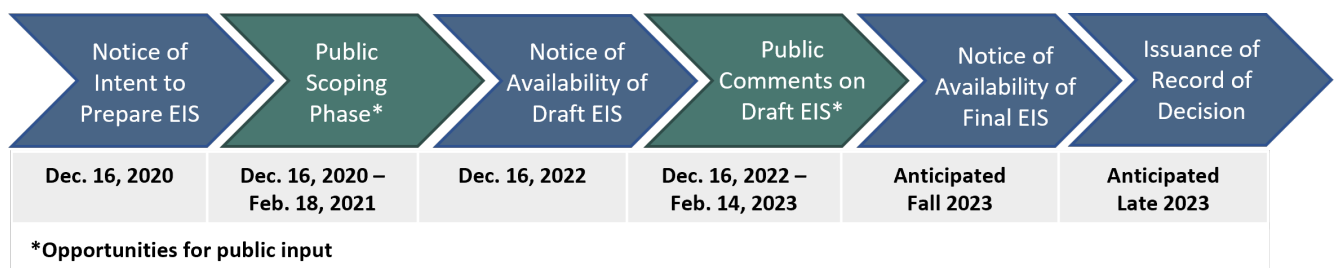


Figure 1. SPDP EIS Timeline

Why are you not developing a Programmatic EIS?

The SPDP EIS is part of an overall NNSA NEPA strategy for surplus plutonium disposition that started with the preparation of a programmatic EIS (PEIS) in 1996. Several NEPA reviews that followed tiered from the 1996 PEIS to evaluate alternative means of assuring that surplus plutonium can never again be readily used in a nuclear weapon. The analyses found in the PEIS, and subsequent tiered documents, are incorporated by reference in this SPDP EIS, which concentrates on issues specific to the dilute and dispose strategy.

Based on the Council on Environmental Quality (CEQ) and DOE regulations related to PEISs, tiering an EIS is an appropriate NEPA approach to undertake for the 34 MT of surplus plutonium described in the purpose and need. It should be noted that there is no regulatory difference between the EIS process and the PEIS process. The resources considered in the assessment of impacts and the requirements for public involvement are the same.

What was the result of the public scoping period and did NNSA consider my comments?

The public scoping phase began with publication of the NOI on December 16, 2020 (85 FR 81460) and continued until February 18, 2021. NNSA hosted two internet and telephone-based virtual public scoping meetings on January 25 and 26, 2021. Comments received during the public scoping meetings and from mail, emails, and phone were considered in preparing the Draft SPDP EIS. A summary of comments and comment responses are included in Appendix F of the Draft SPDP EIS, organized by topic.

What is a Record of Decision (ROD)?

A Record of Decision is a public document that records a Federal agency’s decision(s) concerning a Proposed Action for which the agency has prepared an EIS. The ROD is prepared in accordance with the requirements of the CEQ NEPA regulations (40 CFR 1505.2). A ROD states the agency’s decision, identifies the alternatives considered in reaching the decision, the environmentally preferable alternative(s), factors balanced by the agency in making the decision, whether all practicable means to avoid or minimize environmental harm have been adopted, and if not, why they were not.

Where are the public hearings for the Draft SPDP EIS?

Public review of the Draft SPDP EIS began with the publication of the NOA on December 16, 2022 ([87 FR 77096](#)) and will continue until February 14, 2023. NNSA is hosting three in-person and one virtual public hearings. Times and connection information for the Draft EIS public hearings are provided below. Any changes to the meeting times or locations will be posted on the NNSA NEPA reading room at <https://www.energy.gov/nnsa/nnsa-nepa-reading-room>. The first 30 minutes of the in-person meetings will be a poster session, which will be followed by a presentation by NNSA and a public comment session. Representatives will be available at the poster session to answer your questions and Spanish/English translators will be available.

Date	Time	Location/Connection
Thursday January 19, 2023	6:00 PM — 9:00 PM Eastern	Palmetto Ballroom, North Augusta Municipal Center, 100 Georgia Avenue, North Augusta, SC
Tuesday January 24, 2023	6:00 PM — 9:00 PM Mountain	Carousel House at Pecos River Conference Center 711 Muscatel, Carlsbad, NM
Thursday January 26, 2023	6:00 PM — 9:00 PM Mountain	Pajarito Room, Fuller Lodge 2132 Central Ave, Los Alamos, NM
Monday January 30, 2023	7:00 PM — 10:00 PM Eastern 6:00 PM — 9:00 PM Central 5:00 PM — 8:00 PM Mountain 4:00 PM — 7:00 PM Pacific	The meeting URL will be posted on the NNSA’s NEPA Reading Room - https://www.energy.gov/nnsa/nnsa-nepa-reading-room

What is the purpose of the public review of the Draft SPDP EIS?

NNSA invites other federal and state agencies, state and local governments, Native American tribes, industry, other organizations, and members of the public to submit comments on the merits of alternatives and adequacy of the environmental analysis.

Written and oral comments will be given equal weight, and NNSA will consider all comments when preparing the Final SPDP EIS.

How can I submit comments or ask questions on the Draft SPDP EIS?

In addition to providing comments orally or in writing during the four public meetings, comments and questions about the Draft SPDP EIS can be sent to Maxcine Maxted, NEPA Document Manager:

US Mail: NNSA Office of Material Management and Minimization, Savannah River Site
P.O. Box A, Bldg. 730-2B, Rm. 328
Aiken, SC 29802
Email: SPDP-EIS@nnsa.doe.gov
Phone: 803-952-7434

Requests for general information concerning the NNSA NEPA process should be directed to Lynn Alexander, NEPA Compliance Officer:

US Mail: U.S. Department of Energy/National Nuclear Security Administration
NNSA Office of General Counsel, NA-GC-10
1000 Independence Ave, SW
Washington, DC 20585
Email: SPDP-EIS@nnsa.doe.gov
Phone: 803-952-7434

Will my comments be anonymous?

You may submit comments anonymously. If you wish for NNSA to withhold your name and/or other personally identifiable information, please state this prominently at the beginning of your comment. Otherwise, please be advised that your entire comment, including your personally identifiable information (address, phone number, email address) may be made publicly available.

What is the estimated timeline for completion of this EIS?

NNSA anticipates the Final SPDP EIS will be completed by the end of calendar year 2023.

What is the Proposed Action?

The proposed action is implementation of the dilute and dispose strategy to safely and securely disposition 34 MT of surplus plutonium such that it could never again be readily used in a nuclear weapon.

What alternatives are being considered for the SPDP EIS?

NNSA is evaluating two alternatives: the Preferred Alternative and a No Action Alternative. NNSA's preferred alternative for disposition of 34 MT of surplus pit and non-pit plutonium is implementation of the dilute and dispose strategy to safely and securely disposition the surplus plutonium such that it could never again be readily used in a nuclear weapon. The Preferred Alternative would require new, modified, or existing capabilities at the Savannah River Site

(SRS), Los Alamos National Laboratory (LANL), Pantex Plant (Pantex), Y-12 National Security Complex (Y-12), and the WIPP facility. The dilute and dispose strategy can be accomplished via any of several sub-alternatives, all of which result in permanent disposal of the contact-handled transuranic (CH-TRU) defense waste at the WIPP facility.

Using the Base Approach Sub-Alternative, NNSA would complete pit disassembly and processing (PDP) and non-pit metal processing (NPMP) at LANL and conduct dilution, characterization, and packaging process steps at SRS. Using the SRS NPMP Sub-Alternative NNSA would complete PDP at LANL while NPMP would occur at SRS, followed by dilution, characterization, and packaging of all the resulting plutonium oxide at SRS. Using the All LANL Sub-Alternative NNSA would complete PDP, NPMP, dilution, characterization, and packaging at LANL. Using the All SRS Sub-Alternative NNSA would complete these same steps at SRS only. The Preferred Alternative includes disposal activities at the WIPP facility for all sub-alternatives.

The Draft SPDP EIS also includes an analysis of the No Action Alternative, which is the continued management of 34 MT of surplus plutonium. This includes (1) continued storage of pits at Pantex, (2) the continued plutonium mission at LANL to process up to 400 kg of actinides (including surplus plutonium) a year, and (3) disposition of up to 7.1 MT of non-pit surplus plutonium for which the disposition decision (i.e., the dilute and dispose strategy), was announced in NNSA's 2020 Amended Record of Decision (AROD) (85 FR 53350). NPMP could occur at an existing facility at LANL or a new facility built at SRS. If NPMP occurs at LANL, the resulting plutonium oxide would be shipped to SRS for dilution. In both cases, dilution, characterization, and packaging would occur at SRS followed by shipment to the WIPP facility in the same manner as discussed for the Preferred Alternative.

Using the no action alternative NNSA disposes 7.1 MT of non-pit surplus plutonium whereas the preferred alternative provides options for disposition of the entire 34 MT of surplus plutonium.

What is the difference between pit plutonium and non-pit plutonium?

A pit is the central core of a nuclear weapon that principally contains plutonium or enriched uranium. The plutonium contained in the pit is termed "pit plutonium."

The term "non-pit plutonium" refers to plutonium that is not in the metal pit form that is the core of a nuclear weapon. Non-pit plutonium may be in metal or oxide form or may be associated with other materials that were used in the process of manufacturing and fabricating plutonium for use in nuclear weapons. Some non-pit plutonium was generated during research and development activities that support weapons production.

How does dilute and dispose work?

Using the Preferred Alternative NNSA would implement the dilute and dispose strategy for up to 34 MT of surplus plutonium. This includes pit disassembly and processing (PDP) of pit plutonium and non-pit metal processing (NPMP) of non-pit plutonium using a furnace in a glovebox, resulting in plutonium oxide. The plutonium oxide would be blended with an adulterant in blend cans within dedicated gloveboxes. This produces a mixture that reduces the plutonium concentration and inhibits plutonium recovery. The CH-TRU defense waste would be packaged into criticality control overpack (CCO) containers and verified for compliance with the WIPP waste acceptance criteria using process knowledge, radiography, and nondestructive assay analysis. Prior to shipment, the CH-TRU defense waste would be further packaged into approved TRU waste transportation containers for shipment to the WIPP facility.

What is an adulterant?

An adulterant contains nonhazardous inorganic materials that when combined with the plutonium oxide forms a chemically stable matrix suitable for plutonium disposition. The multi-component adulterant is designed to impede the recovery of the plutonium.

What is a glovebox?

A glovebox (Figure 2) is an enclosure that separates workers from equipment used to process hazardous material, while allowing the workers to be in physical contact with the equipment. Gloveboxes are normally constructed of stainless steel, with large acrylic/lead glass windows. Workers have access to equipment through the use of heavy-duty, lead-impregnated rubber gloves, the cuffs of which are sealed in portholes in the glovebox windows.



Figure 2. Glovebox

Where would the Preferred Alternative take place?

The Preferred Alternative would require new, modified, or existing capabilities at the Pantex Plant near Amarillo, Texas; LANL near Santa Fe, New Mexico; SRS near Aiken, South Carolina; Y-12 in Oak Ridge, Tennessee; Nevada National Security Site near Las Vegas (potentially for LANL low level waste disposal), Nevada; and the Waste Isolation Pilot Plant near Carlsbad, New Mexico (Figure 3).

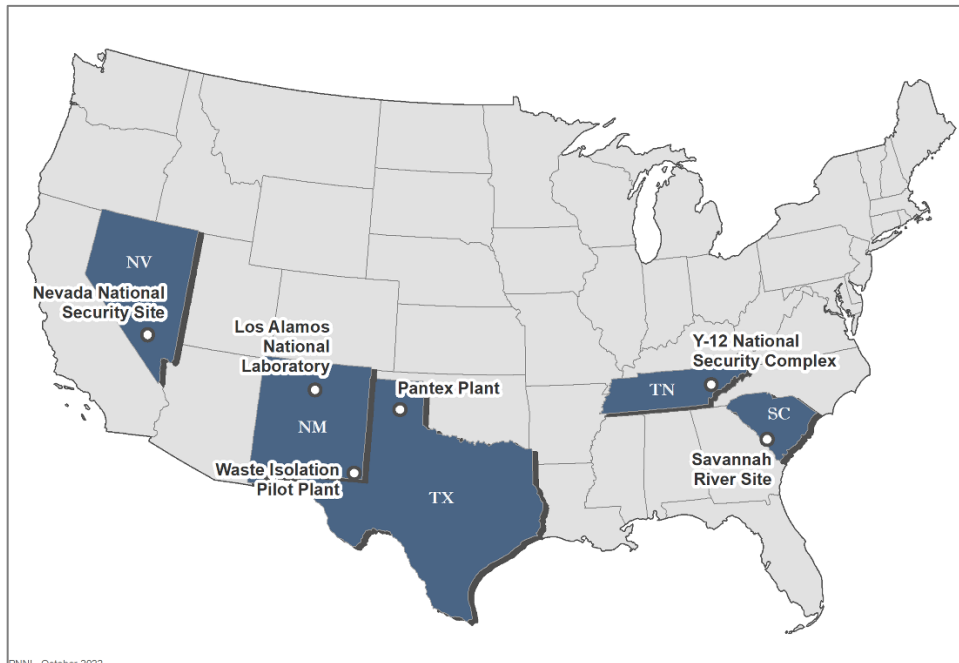


Figure 3. Proposed Locations of Project Activities

Is the dilute and dispose strategy new and untested?

The dilute and dispose strategy is not new. It has been technically validated, uses existing technology, and is currently being used for other programs at the SRS. These programs are based on previous NNSA decisions including a 2016 ROD to disposition 6 MT of surplus non-pit plutonium and

the previously mentioned 2020 AROD to disposition 7.1 MT of surplus non-pit plutonium. The proposed action being evaluated in the Draft SPDP EIS would be an expansion of the dilute and dispose strategy.

Is MOX still an alternative?

The 34 MT of surplus plutonium being evaluated for disposition in the Draft SPDP EIS was previously intended to be dispositioned using the Mixed Oxide (MOX) Fuel Alternative. MOX is no longer a viable alternative as the MOX project was canceled in 2018 and the former MOX Fuel Fabrication Facility (MFFF) is being repurposed for another NNSA mission.

The dilute and dispose strategy can be implemented much sooner than the MOX approach. The dilute and dispose strategy cost estimates have been analyzed in multiple reports and all conclude the costs would be less than half of the MOX approach.

What types of topics are analyzed in the EIS?

The types of topics and potential resource impacts that are analyzed in the EIS include the following:

- Land Use and Visual Resources
- Geology and Soils
- Water Resources
- Air Quality
- Noise
- Ecological Resources
- Human Health for normal operations
- Human Health from accidents
- Intentional Destructive Acts
- Cultural and Paleontological Resources
- Socioeconomics
- Infrastructure
- Waste Management
- Environmental Justice
- Transportation
- Cumulative Impacts from past, present, and reasonably foreseeable activities