

NNSA Surplus Plutonium Disposition Program EIS

Questions & Answers

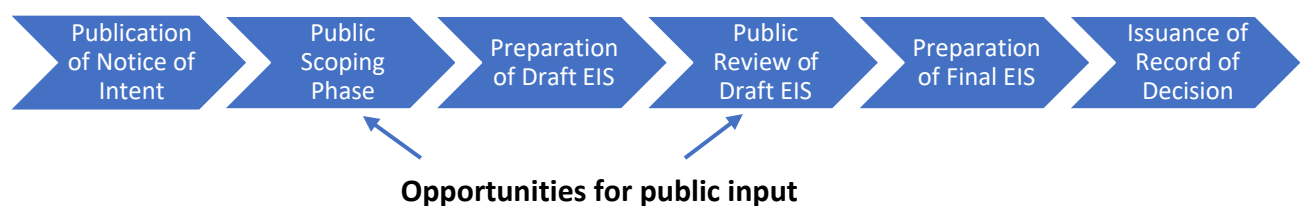
Why is NNSA preparing an environmental impact statement for the Surplus Plutonium Disposition Program?

The National Nuclear Security Administration (NNSA), a semi-autonomous agency within the United States Department of Energy (DOE), is preparing the Surplus Plutonium Disposition Program (SPDP) Environmental Impact Statement (EIS) to evaluate alternatives for the safe and timely disposition of 34 metric tons (MT) of plutonium excess to the defense needs of the United States. NNSA will prepare the SPDP EIS to evaluate the dilute and dispose alternative, also known as “plutonium downblending,” and any other identified reasonable alternatives for the disposition of surplus plutonium.

Under the National Environmental Policy Act of 1969 (NEPA), a federal agency is required 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 (1) ensure public officials consider the environmental and related social and economic effects of their proposed actions and alternative actions and (2) provide an opportunity for public involvement.

What is an environmental impact statement and how is it developed?

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 published its Notice of Intent (NOI) to prepare an EIS; (2) during a public scoping period, NNSA will collect comments on the scope, alternatives and environmental topics to be considered within the scope of the EIS; (3) NNSA will consider the collected comments as it prepares a Draft EIS presenting the analysis of the potential impacts of the proposed action and alternative actions; (4) the Draft EIS will be distributed for public review for a period of at least 45 days; (5) NNSA will issue a Final EIS; and (6) NNSA will document decisions regarding actions to be taken by issuing a Record of Decision.



What types of topics will be analyzed in the EIS?

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

- Air Quality
- Cultural Resources
- Ecological Resources
- Environmental Justice
- Geology and Soils
- Human Health – Accidents
- Human Health – Public
- Human Health – Workers
- Infrastructure
- Land and Visual Resources
- Noise
- Socioeconomics
- Transportation
- Waste Management
- Water Resources

What is the purpose of the public scoping process?

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 to assist in identifying environmental topics and in determining the appropriate scope of the SPDP EIS analysis.

Specifically, NNSA is asking for input on the following aspects of the SPDP EIS:

- The appropriate scope of the EIS
- The preferred alternative and other reasonable alternatives
- Environmental topics that should be considered

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

When will public scoping take place?

The public scoping process began with publication of the NOI on December 16, 2020 (85 FR 81460) and will continue until February 1, 2021. Comments received or postmarked after this date will be considered to the extent practicable.

Will there be a public scoping meeting?

NNSA will host two internet and telephone-based virtual public scoping meetings on January 25 and 26, 2021. Times and connection information are provided below. The meetings will be hosted using the free WebEx application with options for both webinar/visual and audio-only (telephone dial-in) connections.

A document was posted in the NNSA NEPA reading room (<https://www.energy.gov/nnsa/nnsa-nepa-reading-room>) that describes the ground rules and tips for the virtual public scoping meetings. Participants are encouraged to join 15-30 minutes before the event to test their systems. The meeting presentation and informational fact sheets will be posted online in both English and Spanish at least 48 hours before the meetings start at: <https://www.energy.gov/nnsa/nnsa-nepa-reading-room>.

Date	Time	Connection
Monday, January 25, 2021	5:00—9:00 EST 4:00—8:00 CST 3:00—7:00 MST 2:00—6:00 PST	Visual: https://surplusplutoniumdisposition.webex.com/surplusplutoniumdisposition/onstage/g.php?MTID=e748e008ebe2321538d11908f01211aee Password: SPDPEIS Audio Only: 1-844-621-3956; Access code: 146 423 6294
Tuesday, January 26, 2021	7:00—11:00 EST 6:00—10:00 CST 5:00—9:00 MST 4:00—8:00 PST	Visual: https://surplusplutoniumdisposition.webex.com/surplusplutoniumdisposition/onstage/g.php?MTID=e748e008ebe2321538d11908f01211aee Password: SPDPEIS Audio Only: 1-844-621-3956; Access code: 146 423 6294

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

In addition to providing comments during one of the two virtual scoping meetings, comments and questions about the scope of the SPDP EIS can be sent to Mr. Jeffrey Galan, 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 Mrs. Amy Miller, NEPA Compliance Officer:

US Mail: NNSA Office of General Counsel
P.O. Box 5400
Albuquerque, NM 87185–5400
Email: SPDP-EIS@nnsa.doe.gov

Will my comments be anonymous?

Before including your address, phone number, email address, or other personally identifiable information in your comment, please be advised that your entire comment— including your personally identifiable information—may be made publicly available. 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. You may also submit comments anonymously.

What is the estimated timeline for this EIS?

NNSA anticipates the SPDP EIS will be completed within 24 months after release of the NOI. The current schedule is shown in the diagram below.



*Dates are subject to change

What is a Notice of Intent (NOI)?

A Notice of Intent is a public announcement that an EIS will be prepared and considered. It describes the Proposed Action, possible alternatives, and scoping process, including whether, when, and where any scoping meetings will be held. The NOI is published in the Federal Register and announced in the local media. The scoping process includes holding at least one public meeting and requesting written comments on the scope, alternatives and environmental topics that an EIS should address.

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 Council on Environmental Quality NEPA regulations (40 CFR 1505.2). A ROD 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.

What alternatives are being considered for the SPDP EIS?

NNSA's preferred alternative for the SPDP EIS is the dilute and dispose approach (see description below), which can be accomplished via several options, all of which result in permanent disposition at the Waste Isolation Pilot Plant (WIPP). The preferred alternative entails pit disassembly and oxidation of both pit and non-pit metal plutonium at LANL followed by dilution, characterization, and packaging at SRS. Option 1 includes conducting dilution, characterization, and packaging process steps at LANL. Option 2 focuses disassembly and oxidation of pit plutonium at LANL while oxidation of non-pit metal plutonium occurs at SRS, followed by dilution, characterization, and packaging of both the pit and non-pit plutonium at SRS. Option 3 entails pit disassembly, oxidation, and dilution at new, existing, or modified facilities at Pantex, LANL, and/or SRS.

The SPDP EIS will also include an analysis of the No Action Alternative consisting of (1) continued safe storage of surplus pit plutonium at Pantex and (2) disposition of 7.1 MT of non-pit plutonium using the dilute and dispose approach as approved in August 2020 in an Amended Record of Decision (AROD) as published in the Federal Register (85 FR 53350).

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 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 the dilute and dispose preferred alternative work?

Pit material is disassembled and then it is heated in a high temperature furnace to form an oxide. Likewise, non-pit plutonium not already in oxide form is also converted to an oxide in a high temperature furnace. The dilute and dispose approach adds a specified amount of plutonium oxide to a blend can containing an adulterant material. The material is blended (also called “downblending”) and the blend can is subsequently placed inside a robust outer container that reduces radiological exposure to the workers. This produces a mixture that is not readily usable for weapons and can be safely disposed at WIPP. The disassembly, oxidation and downblending activities occur in gloveboxes located in secure facilities. After downblending, the material is packaged into criticality control overpack containers (CCOs). The CCOs are metal drums approved for off-site shipment of the downblended plutonium. The CCOs would be characterized to verify compliance with WIPP waste acceptance criteria and then readied for shipment to WIPP where the resulting transuranic (TRU) waste would be emplaced deep underground (2,150 feet).

What is an adulterant?

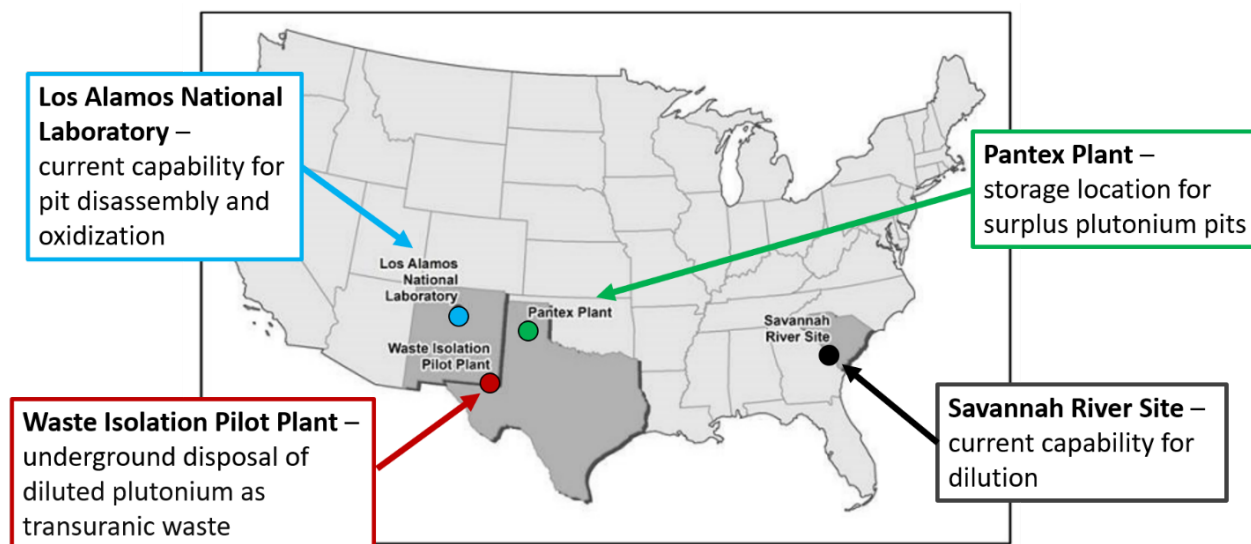
An adulterant is multi-component dry mixture of non-hazardous and non-radioactive materials that is combined with plutonium oxide and is designed to reduce the material attractiveness and inhibit plutonium separation and recovery.

What is a glovebox?

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

Where would the dilute and dispose preferred alternative take place?

The dilute and dispose approach would require new, modified, and/or existing capabilities at the Pantex Plant near Amarillo, Texas; Los Alamos National Laboratory near Santa Fe, New Mexico; Savannah River Site near Aiken, South Carolina; and/or the Waste Isolation Pilot Plant near Carlsbad, New Mexico.



Is MOX still an alternative?

The 34 MT of material being evaluated for disposition in the 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 has been canceled and the former MOX Fuel Fabrication Facility (MFFF) is being repurposed for another NNSA mission.

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

Is the dilute and dispose approach new and untested?

The dilute and dispose approach has been technically validated, uses existing technology, and is currently being used for other programs at the Savannah River Site.

The National Academies of Sciences completed a multi-year review of the dilute and dispose approach and concluded that it is technically feasible (see Review of the Department of Energy's Plans for Disposal of Surplus Plutonium in the Waste Isolation Pilot Plant, National Academies of Science Committee on Disposal of Surplus Plutonium at the Waste Isolation Pilot Plant, 2020).

The proposed action being evaluated in the SPDP EIS would be an expansion of the dilute and dispose approach that is already being used for the disposition of 13.1 MT of surplus non-pit plutonium at the same facilities (6 MT from 2015 decision and 7.1 MT from a 2020 decision). Since August 2012, the Savannah River Site has made a total of 20 shipments of diluted plutonium TRU waste to the WIPP facility, 9 of which occurred in 2017.