



Surplus Plutonium Disposition Program (SPDP) Environmental Impact Statement (EIS)

January 25-26, 2021

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M3-SR-21-0008

Reviewing Official: C. R. Dyer, QA Specialist, 1/18/2021

— PERMANENT THREAT REDUCTION —



**MATERIAL MANAGEMENT
AND MINIMIZATION**

CONVERT, REMOVE, DISPOSE

Part 1: Meeting rules and tips – Dave Goodman

Part 2: Meeting presentation – Jeffrey Galan/Virginia Kay

- Overview of NNSA's mission as it relates to this program
- Description of the NEPA process and NNSA's environmental review process
- Description of plutonium disposition history and relevant past analyses
- Description of purpose and need, proposed action, and alternatives to be included in the Environmental Impact Statement (EIS)

Part 3: Open public comment

Today's Purpose

To provide information
on the Surplus
Plutonium Disposition
Program EIS

and

To seek your input on the
scope, alternatives, and
environmental topics that
should be considered in the EIS

- If you are viewing the webinar electronically and you have NOT already indicated that you want to provide a comment, please signal by raising your hand.
- If you are on phone-only mode we will provide instructions for making comments part way through the webinar comment period.
- All comments are treated equally (mail, phone, e-mail, webinar).
- 3-minute time limit per speaker.
- Provide a brief summary of your comment if you are also providing a written comment or if others have already covered your points.

Overview of DOE's Mission as it Relates to this Program



- The National Nuclear Security Administration
 - Is a semi-autonomous agency within the U.S. Department of Energy (DOE).
 - Maintains and enhances the safety, security, and effectiveness of the U.S. nuclear weapons stockpile.
 - Preventing nuclear weapons proliferation and reducing the threat of nuclear and radiological terrorism around the world.
- Office of Material Management and Minimization
 - Minimizing the use of and where possible, eliminating weapons-usable uranium and plutonium around the world.
 - Positioning 34 MT of plutonium declared excess to national defense needs.

- The action that we are discussing today fits in with NNSA's mission to reduce the threat of nuclear weapons proliferation worldwide by dispositioning surplus plutonium in the United States in a safe and secure manner, ensuring that it can never again be readily used in nuclear weapons.
- To that end, NNSA will disposition 34 MT of surplus plutonium in a safe manner and in a reasonable time frame at a cost consistent with fiscal realities.

The National Environmental Policy Act (NEPA) requires a process for any major Federal action that may significantly affect the quality of the human environment.

The purpose of the NEPA process is to

- Ensure that public officials consider the environmental effects of proposed actions and alternatives in order to foster better decision-making.
- Provide opportunity for public involvement including early participation during the scoping process.

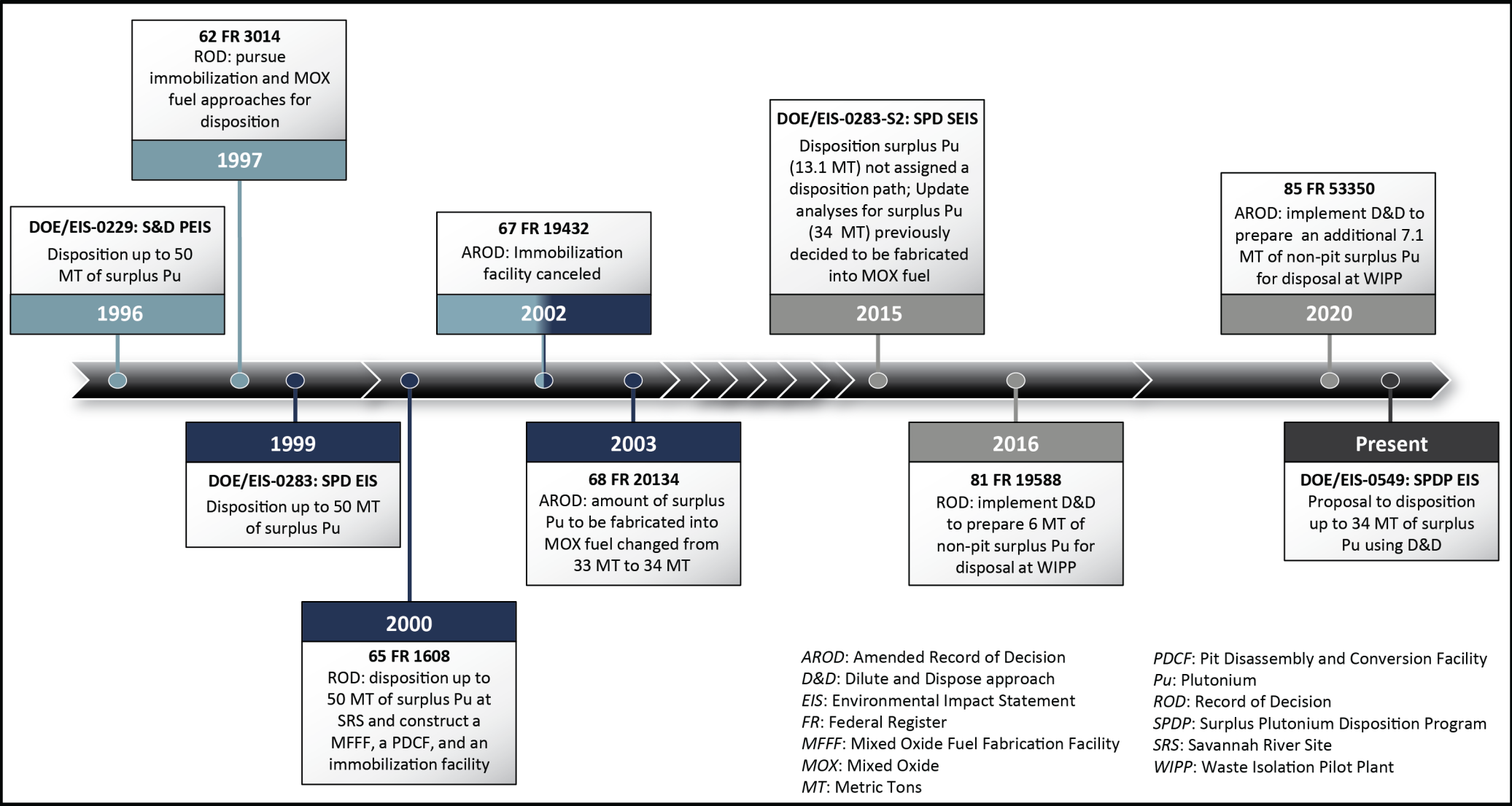


Planned Timeline for NEPA Review



*Dates are subject to change

Background and History



- The Proposed Action for the Surplus Plutonium Disposition Program includes a reconsideration of a pathway for disposition of up to 34 MT of surplus plutonium.
 - NNSA had previously proposed to disposition the 34 MT of surplus plutonium that is the subject of this EIS by using it in the fabrication of Mixed Oxide (MOX) fuel.
 - MOX is no longer a viable alternative as the MOX project was canceled and the former MOX Fuel Fabrication Facility (MFFF) is being repurposed for another NNSA mission.
 - DOE must use a mature method and proven technology that is based on processes requiring minimal research and engineering development.

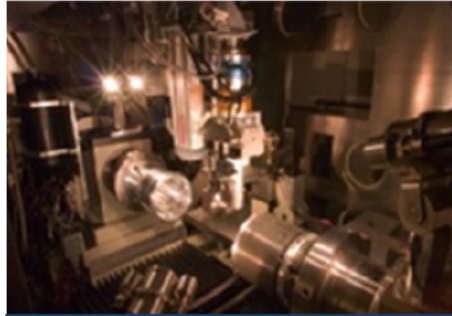
The 34 MT is composed of pit and non-pit plutonium
A **pit** is the central core of a nuclear weapon that principally contains plutonium or enriched uranium.
Non-pit plutonium may be in metal or oxide form or may be associated with other materials that were used in the process of manufacturing and fabricating plutonium for use in nuclear weapons.

- NNSA's preferred alternative for 34 MT is the dilute and dispose approach, also known as "plutonium downblending".
 - The effort would require new, modified, or existing capabilities at the Pantex Plant, Los Alamos National Laboratory (LANL), the Savannah River Site (SRS), and the Waste Isolation Pilot Plant (WIPP).
- In 2016 DOE decided to dispose of separate 6 MT of surplus non-pit plutonium using the dilute and dispose approach and published a Record of Decision in the Federal Register.
 - The 6 MT is not considered a part of the 34 MT.
- In 2020 DOE decided to dispose of an additional 7.1 MT of surplus non-pit plutonium using the dilute and dispose approach and published a Record of Decision in the Federal Register.
 - The 7.1 MT is considered a part of the 34 MT.

Plutonium Downblending Process

- Convert pit and non-pit plutonium to oxide,
- Blend surplus plutonium oxide form with an adulterant, and
- Emplace the resulting contact handled transuranic waste underground at WIPP.

SPDP Project Steps



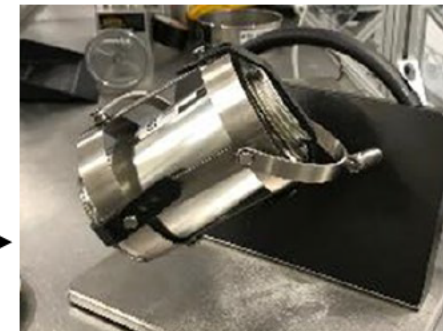
Pit Disassembly and Conversion (oxidation of plutonium) occurs in a system of gloveboxes



Plutonium oxide (PuO_2) and Blend Can Kits are placed in a glovebox



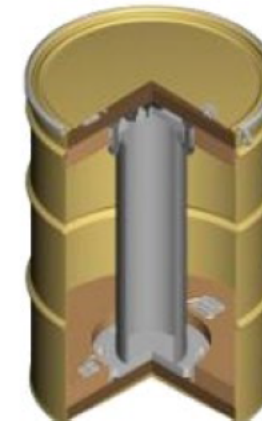
DOE-STD-3013 or alternate containers are opened for PuO_2 blending



PuO_2 is blended with multicomponent adulterant



Lids are press-fit to close Robust Outer Container (ROC). ROC reduces radiation exposure for handling of Dilute Surplus Plutonium (DSP)



DSP is loaded into Criticality Controlled Overpack (CCO) for Disposal at WIPP

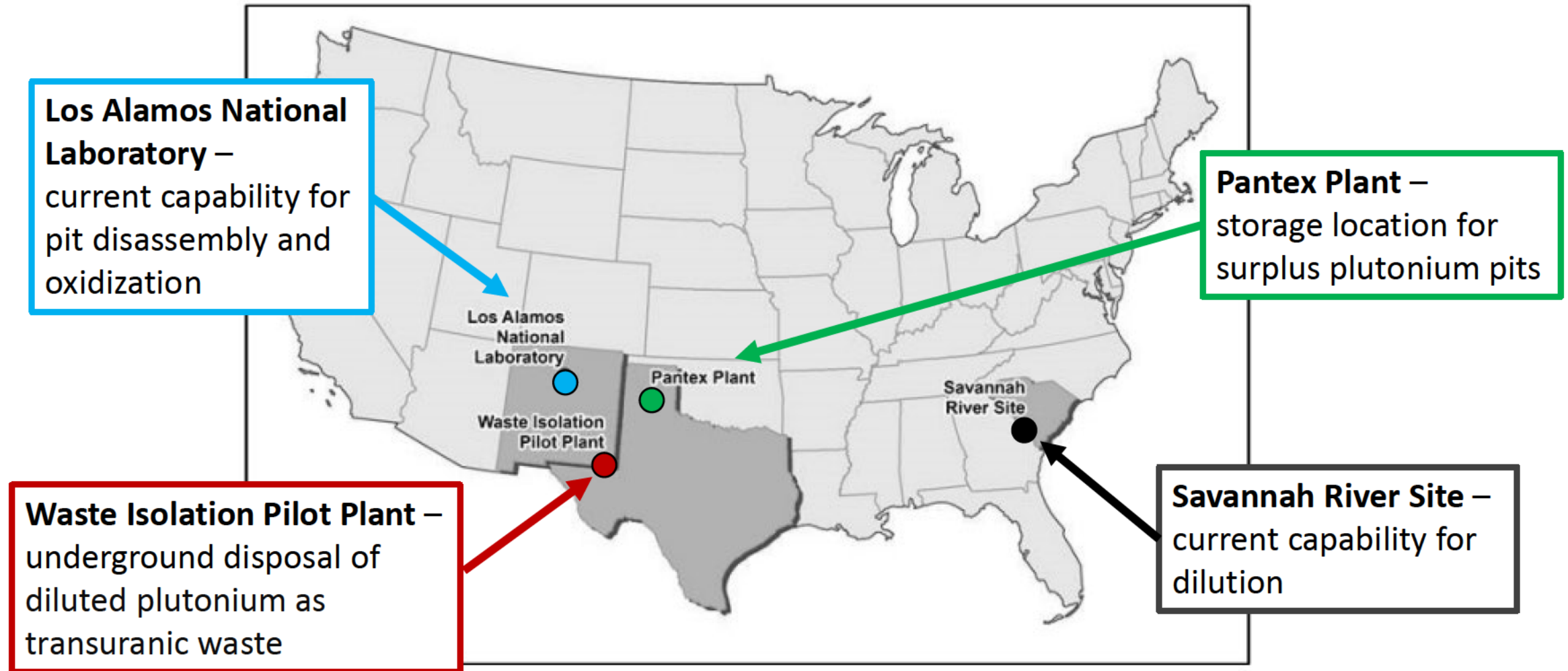


Following Characterization CCOs are loaded in TRUPACT-II for transport

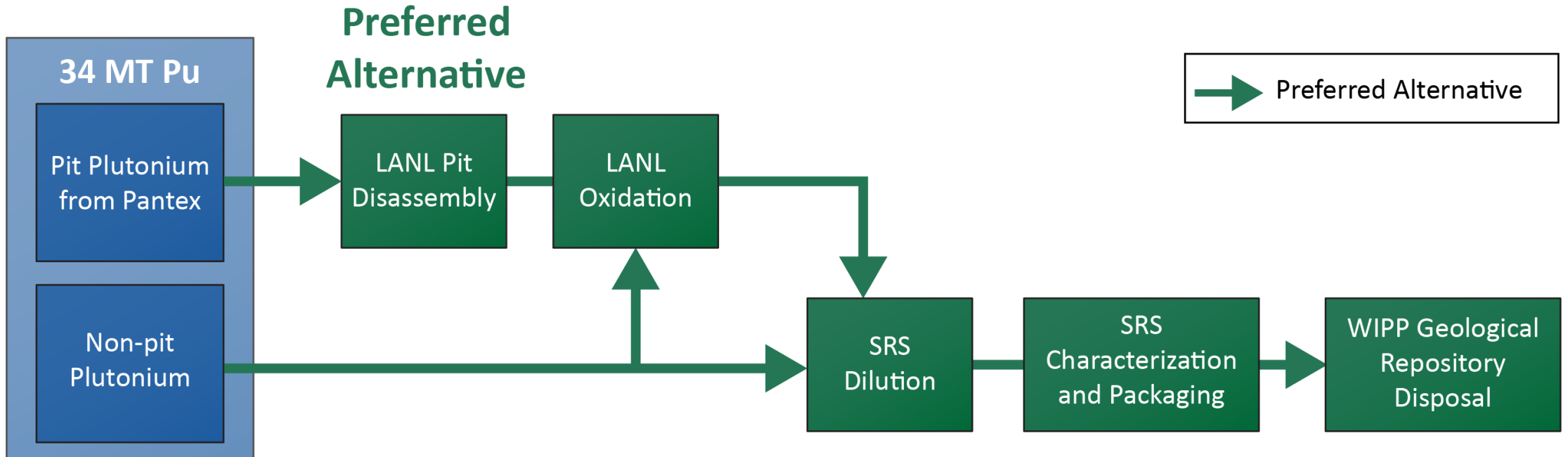


Shipping containers are transported to WIPP by commercial truck

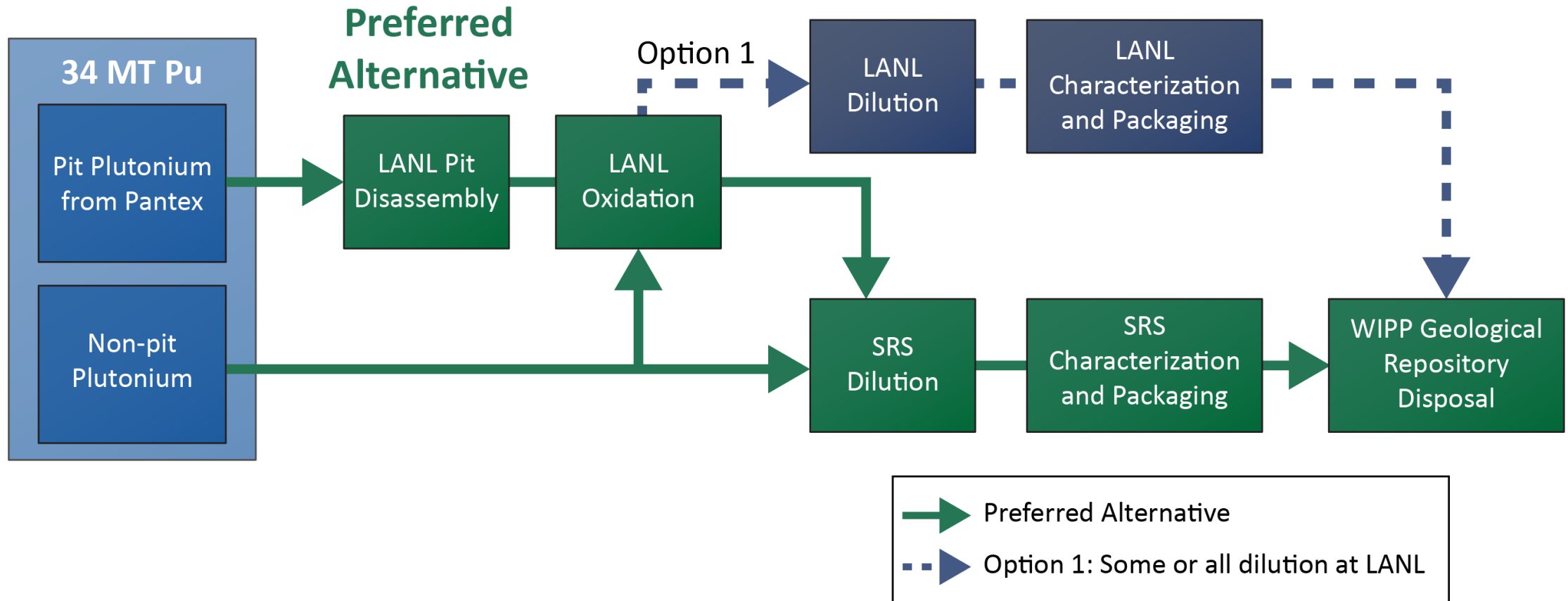
Locations of Major Facilities Included in this EIS



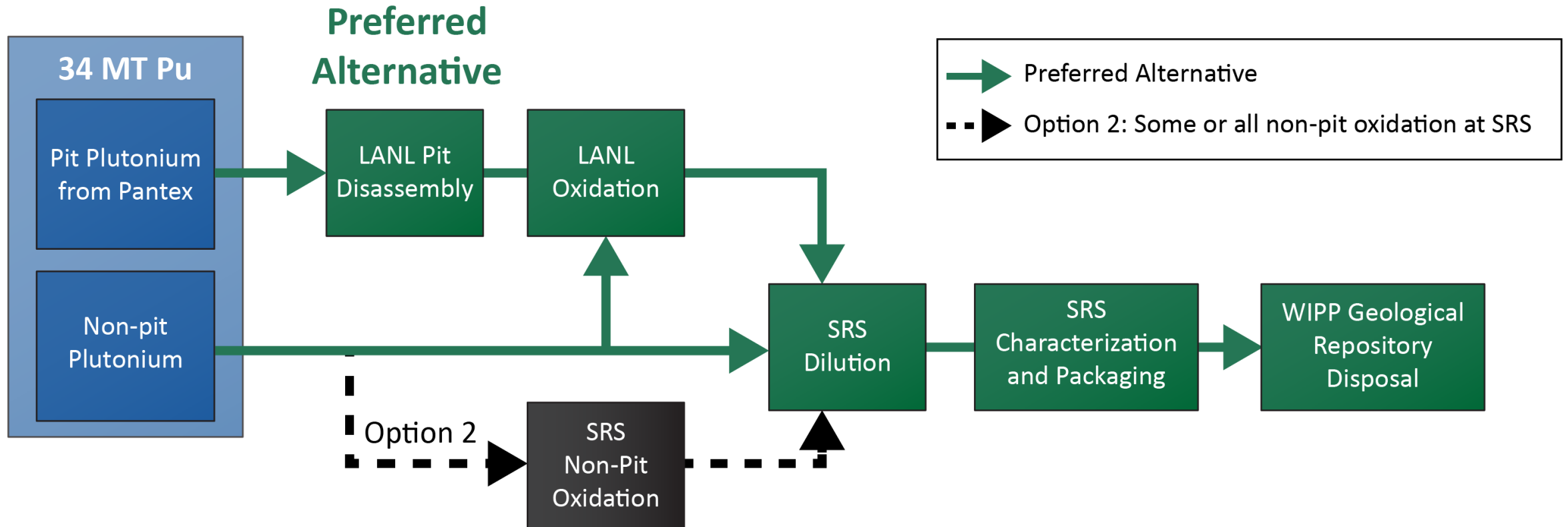
Preferred Alternative and Options



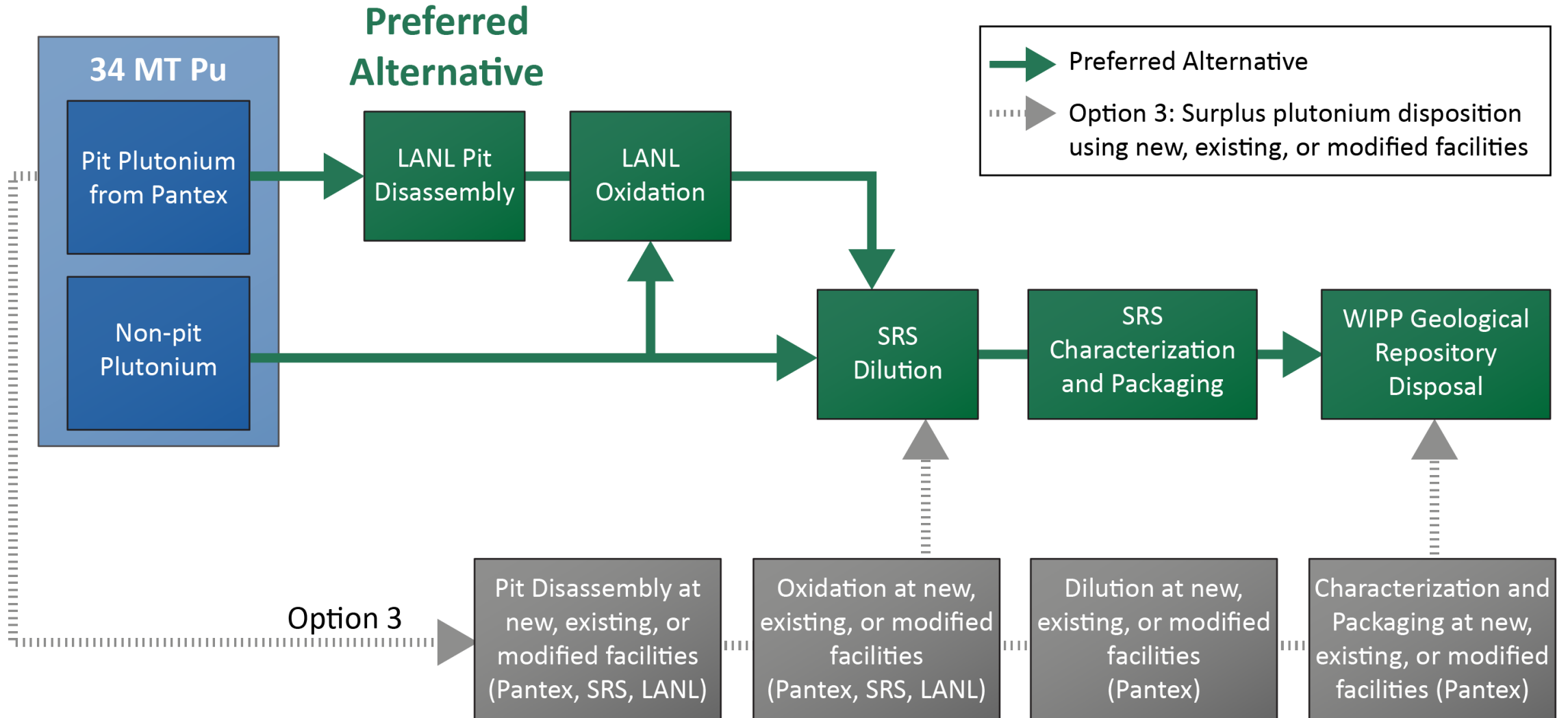
Preferred Alternative and Options



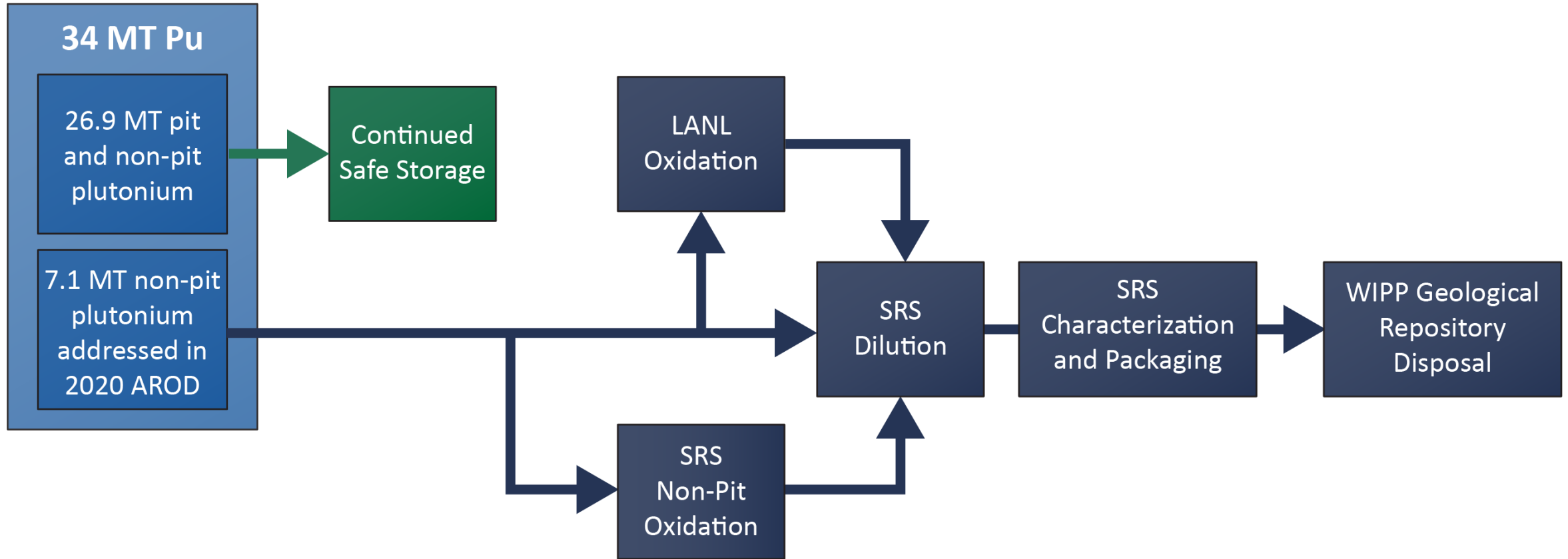
Preferred Alternative and Options



Preferred Alternative and Options



No Action Alternative



Potential Environmental Topics for Consideration in the SPDP EIS



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



DOE/NNSA is seeking comment on the following aspects of the SPDP EIS:

- The appropriate scope of the SPDP EIS.
- Other reasonable alternatives that DOE should consider.
- Environmental topics that DOE should evaluate in the EIS.

Surplus Plutonium Disposition Program EIS Public Scoping Meeting

How to Provide Comments

**Court
Reporter**

Today, submit oral comments on the scope of the Surplus Plutonium Disposition Program EIS

By Phone

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By Mail

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By Email

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Comments
are due by
**February 1,
2021**

Thank you
for your
input.

Public Comment Period



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- 3-minute time limit for each speaker.



If you are also providing a written comment or if others have already covered your points, then please provide a brief summary of your comment.

Thank you for attending
tonight's meeting