Presentation to the SRS Citizens Advisory Board

Surplus Nuclear Materials and Spent Nuclear Fuel Disposition Strategy

July 29, 2008

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EM Environmental Management
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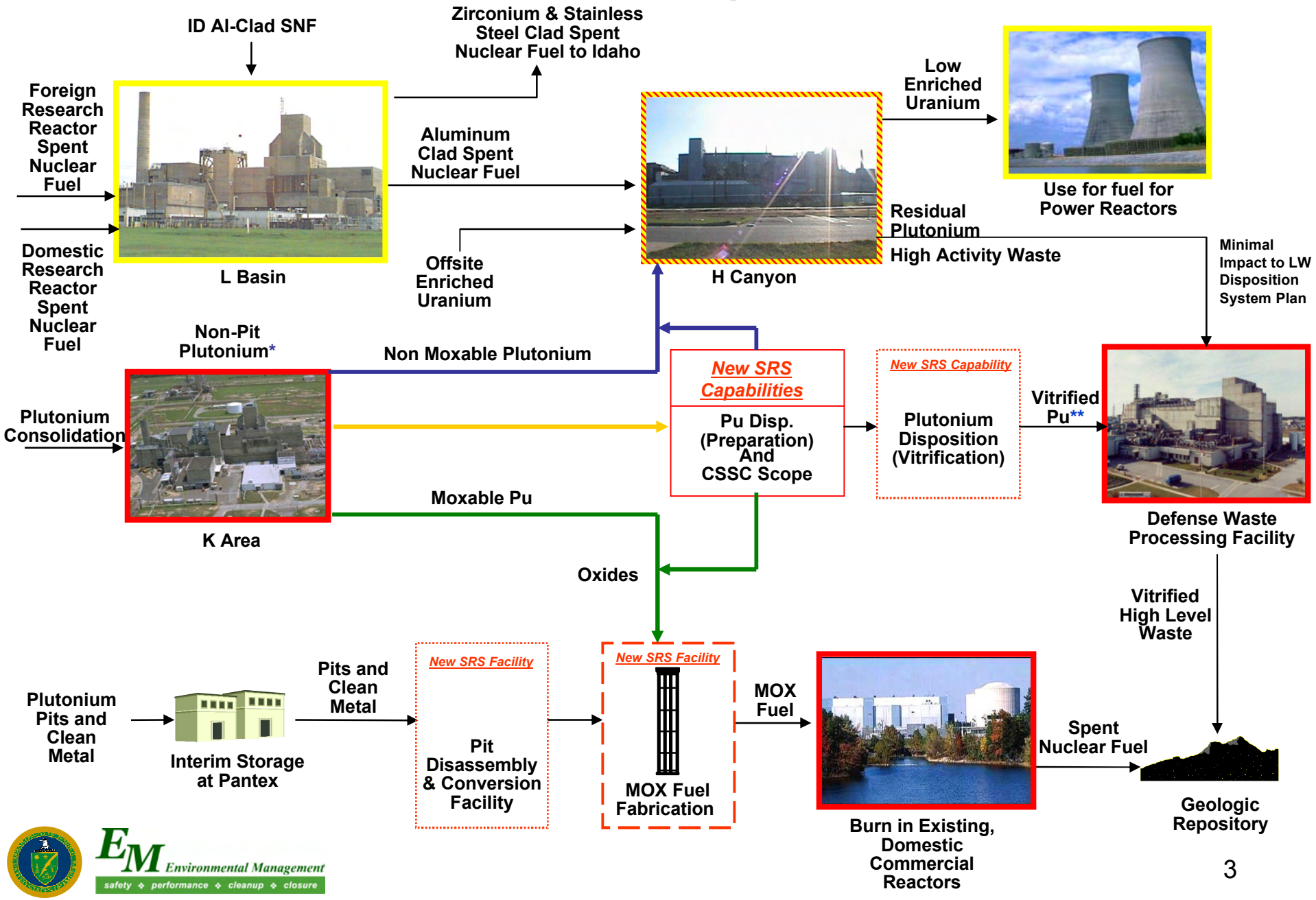
Outline

- Plutonium Consolidation
- Plutonium Disposition
- Enriched Uranium and Spent Fuel Disposition
- Summary

Nuclear Materials Disposition Process



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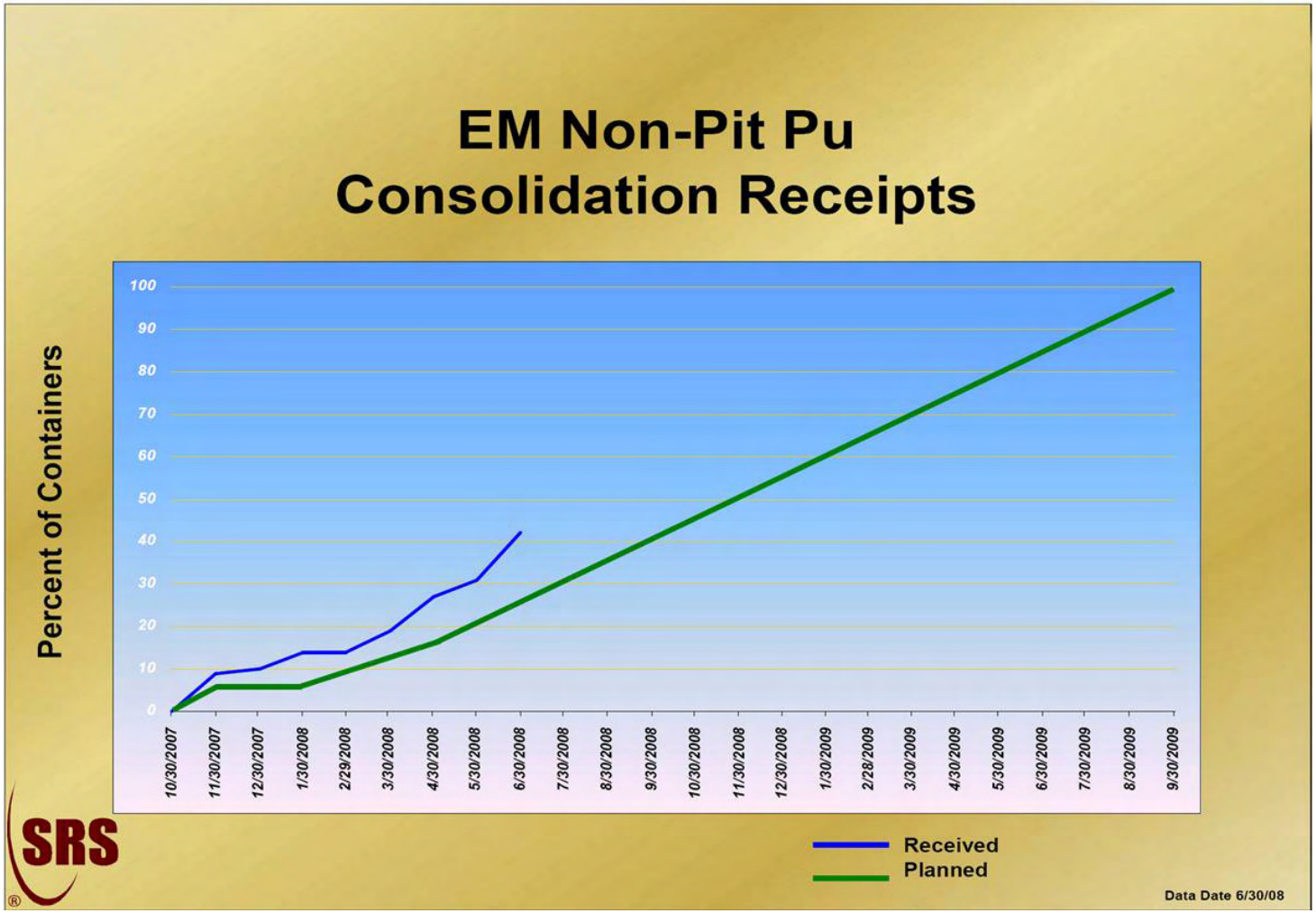
Plutonium Consolidation



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Plutonium Disposition Summary

- Initial preferred alternative for Pu Disposition Project was vitrification of up to ~12.8 MT of surplus non-pit plutonium

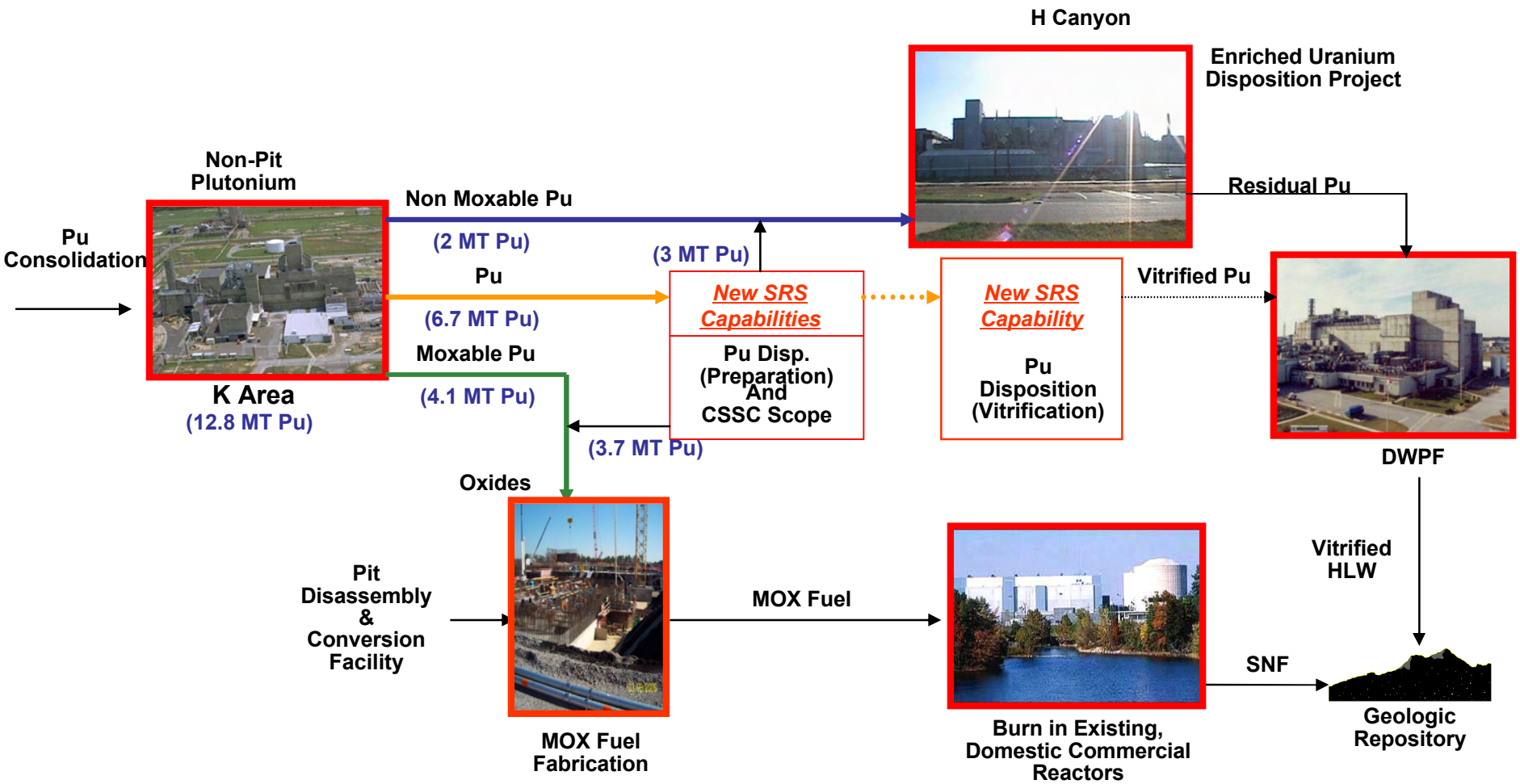
- Pu Business Case developed utilizing up to three facilities for Pu disposition, which was basis for DOE's disposition plan to Congress*:
  - Mixed Oxide Fuel Fabrication Facility (MFFF) under construction
  - Existing H-Canyon facilities (Pu disposition began in FY 2007)
  - Proposed plutonium vitrification capability

- Revised preferred alternative for Pu Disposition Project proposed:
  - eliminate the vitrification capability
  - prepare Pu for disposition using the MOX and H-Canyon facilities
  - integrate 3013 Container Surveillance and Storage Capability (CSSC) Project

- Revised preferred alternative utilizes existing facilities (or under construction) with demonstrated technologies and is cost effective

*September 2007 Report to Congress noted that, "DOE's plan also includes evaluation of an alternative approach that would either reduce or eliminate the need for the proposed vitrification process.."

Plutonium Disposition Strategy



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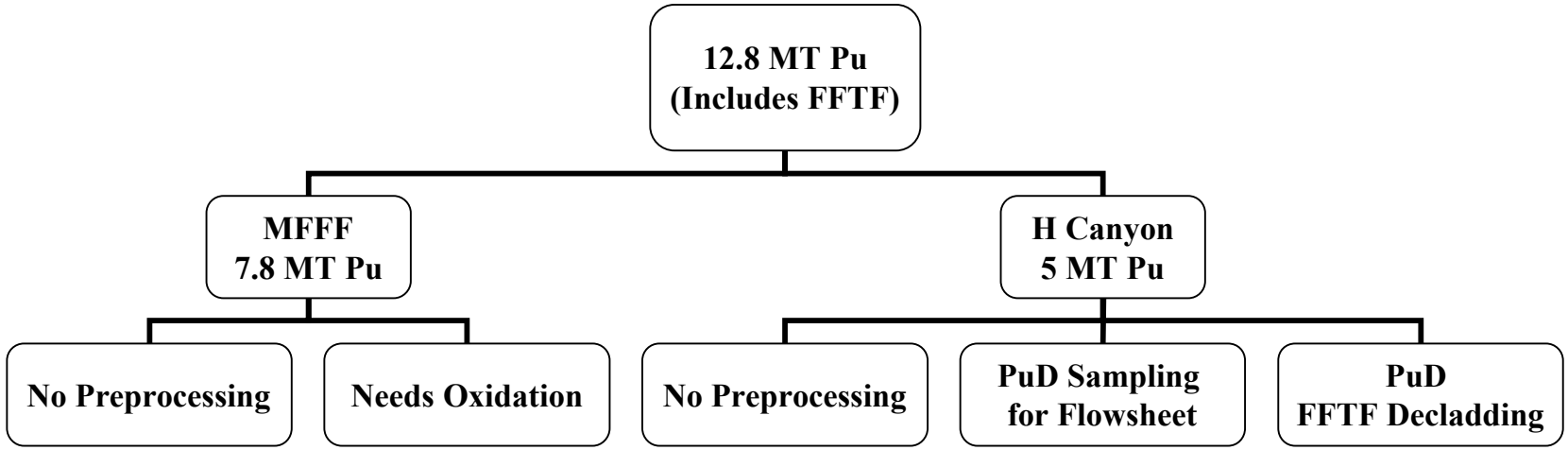
Plutonium Disposition Program Scope



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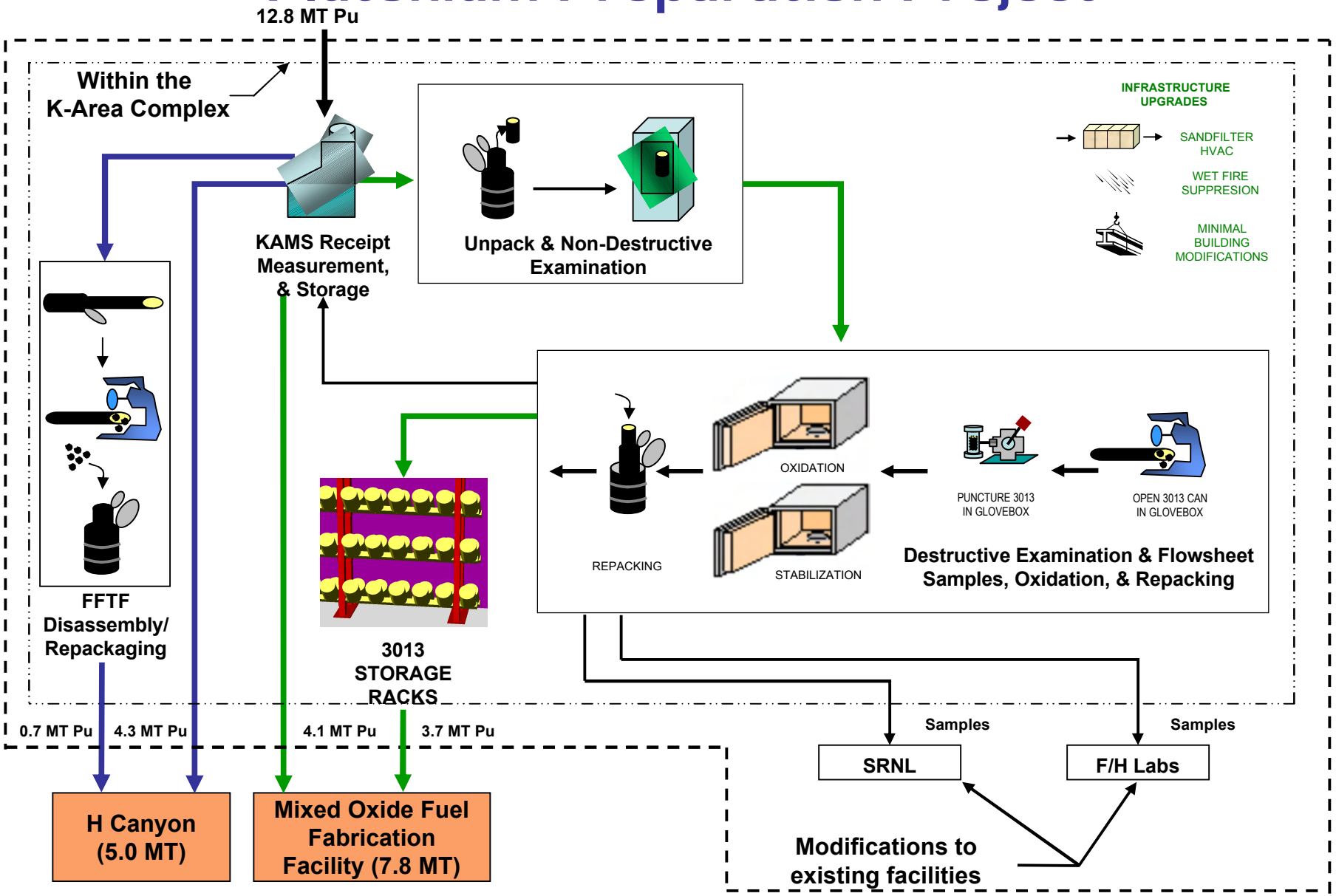
Plutonium Preparation Project



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Enriched Uranium Disposition Project

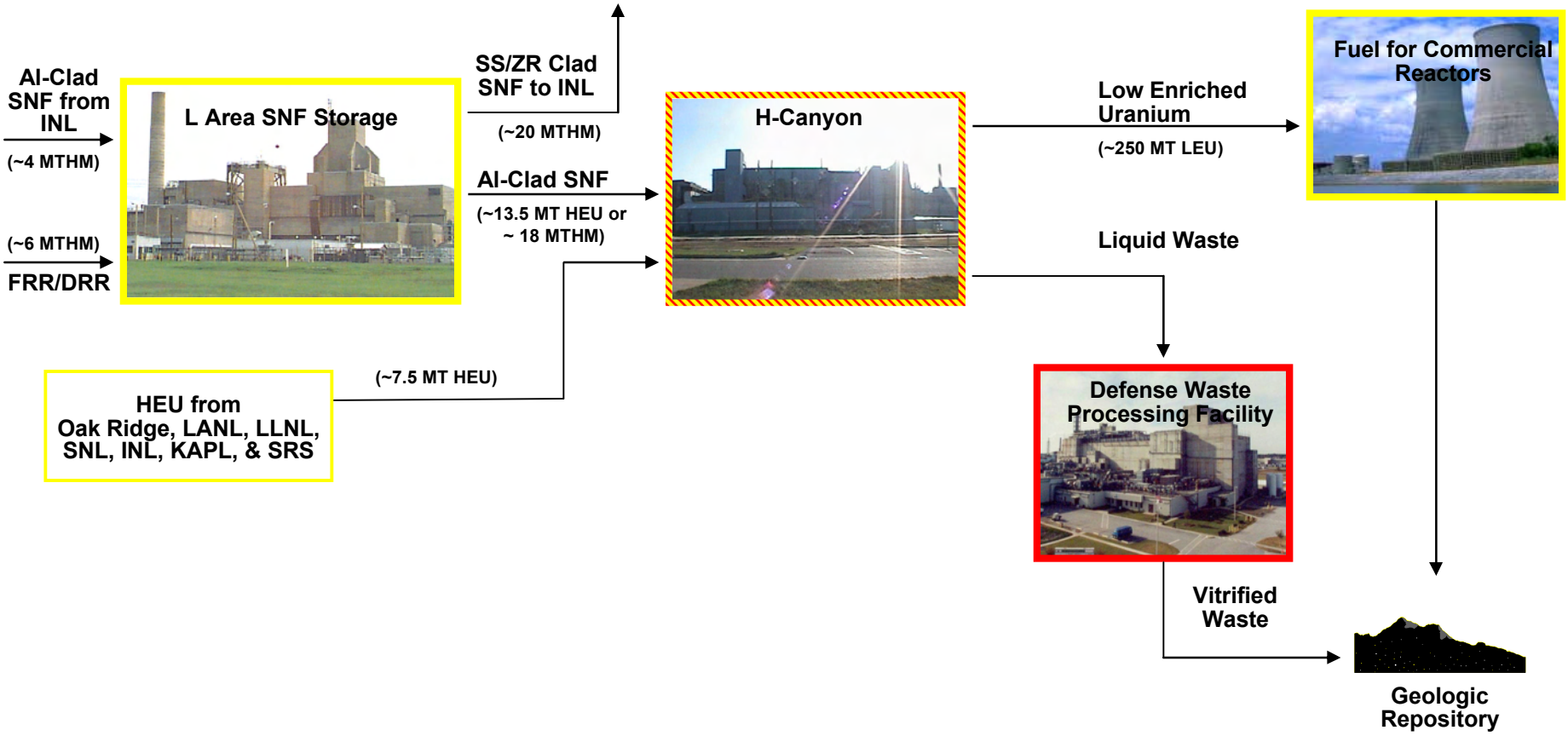
- Enriched Uranium (EU) Disposition Project
  - October 2006, approved mission need (CD-0) and alternative selection and cost range (CD-1)
  - January 2008, approved the performance baseline and authorization to implement (CD-2/3)

- Disposition ~21 MT of surplus HEU by processing in H-Canyon facilities as part of the EU Disposition Project
  - ~ 7.5 MT of HEU (processing ~25% complete and will be completed by FY 2010)
  - ~ 13.5 MT of HEU in the form of aluminum-clad spent nuclear fuel (processing to start in FY 2010 and estimated to be completed in FY 2019)

- HEU will be blended down to low enriched uranium (LEU) and sold to an end user (such as TVA) for use in fabricating fuel for commercial nuclear reactors

Note: NNSA has responsibility for DOE's overall surplus HEU disposition program

Highly Enriched Uranium Disposition Strategy



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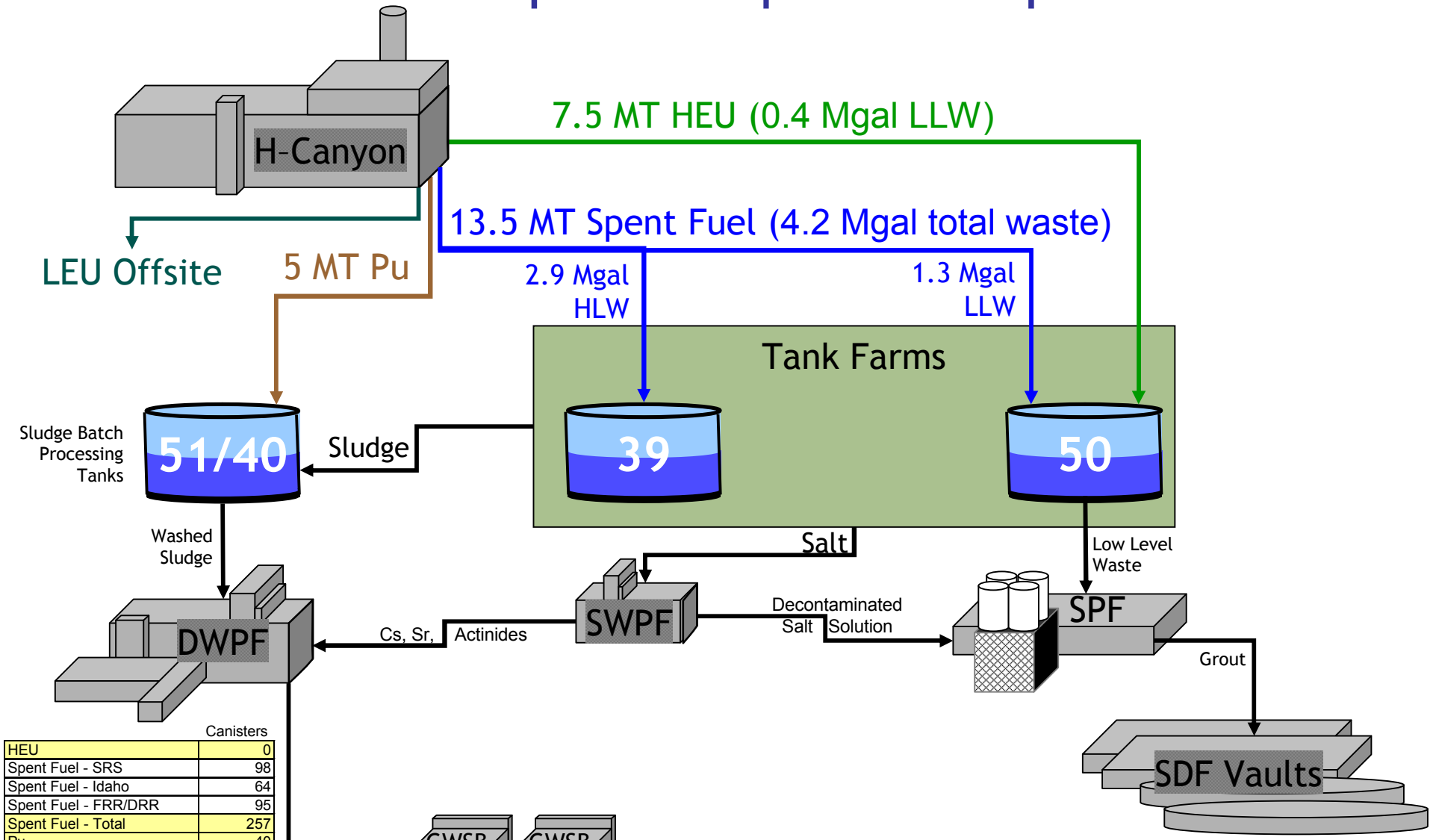
Incremental Impacts to Liquid Waste Operations



Canisters	
HEU	0
Spent Fuel - SRS	98
Spent Fuel - Idaho	64
Spent Fuel - FRR/DRR	95
Spent Fuel - Total	257
Pu	40
Total	297

Additional Vaults	
HEU	0.1
Spent Fuel - SRS	0.5
Spent Fuel - Idaho	0.4
Spent Fuel - FRR/DRR	0.5
Spent Fuel - Total	1.4
Pu	0.0
Total	1.6

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Nuclear Materials Summary

- Disposition of Nuclear Materials can be accomplished with minimal impact on SRS liquid waste system
  - 6 Month Extension
  - ~ 40 additional canisters

- Minimizes program risk by utilizing existing facilities or ones currently under construction to disposition nuclear materials
  - H Canyon
  - MOX