

# The Baby and the Nuclear Bathwater

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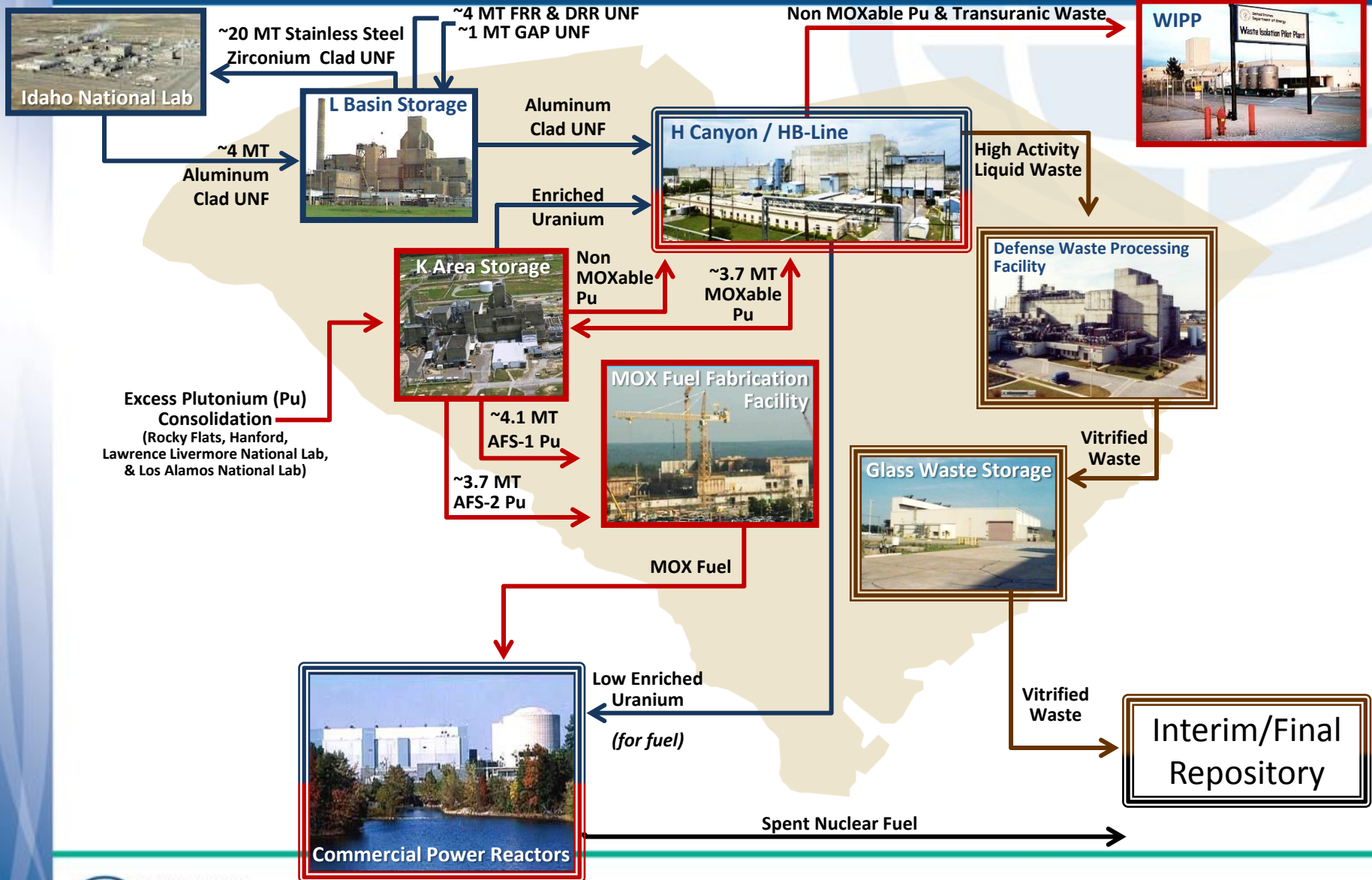


# The Difference is Clear!



**Be careful not to discard something of value with something that is of no value.**

# SRS Has Nation's Only Complete Nuclear Materials Management Complex



# We are Actively Preparing and Moving Waste Offsite

- **High Level Waste**
  - ~3,500 canisters produced to date at DWPF
- **Transuranic Waste**
  - 12,529 cubic meters shipped to WIPP; ~1,200 cubic meters of legacy waste to go
- **Impure plutonium**
  - One shipment made to WIPP; up to 500 kg is unusable, and will be shipped
  - Up to 6MT under consideration for shipment to WIPP

# Nuclear Material Value Can Be Recovered

- ~23 Metric Tons of HEU already converted to 301 MT LEU (2003-2011)
- Enough to power South Carolina for ten years



H Canyon blenddown



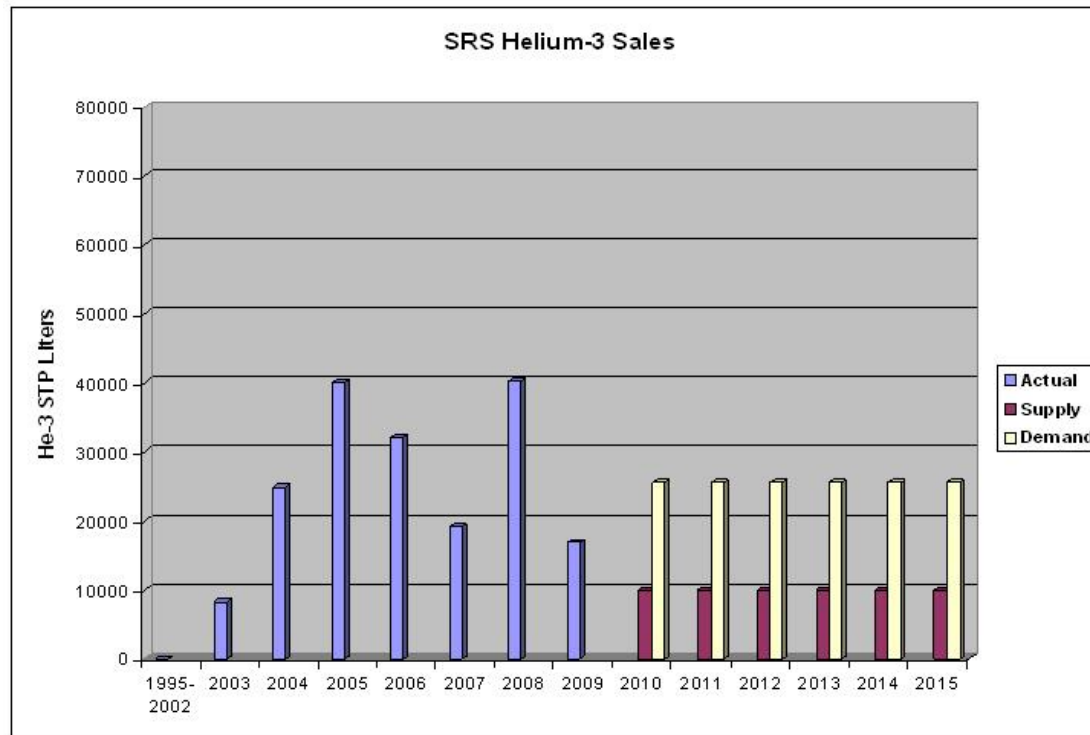
- Browns Ferry
- Watts Bar
- Sequoyah

# Other Material Identified as Valuable

- **Over 34 MT of surplus plutonium to be converted to Mixed Oxide Fuel**
  - U.S. Treaty Agreement
  
- **Helium-3: strategically valuable and in short supply**
  - Principal source is recovery from recycled SRS material
  - Critical component in safeguards monitors
  - Price has increased 20-fold; has sold privately for as much as \$5,000 per liter



# Helium-3 Demand Outpaces Supply



- **USC Moore School Analysis indicates business case for sales at \$1500 per liter**
- **Market demand is at least 15,000 – 25,000 liters per year**

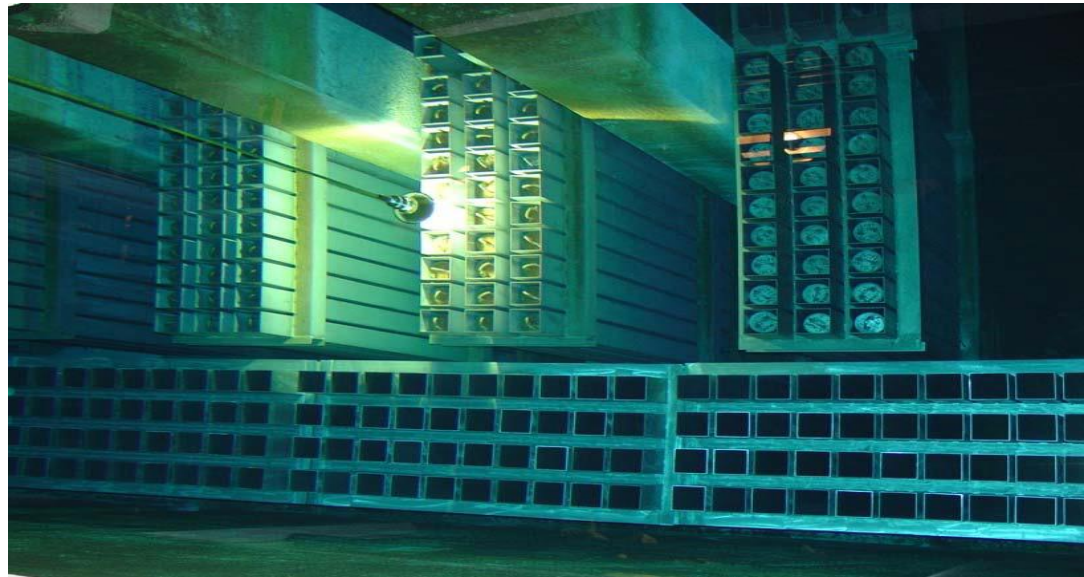
# Other Potential Assets Can Be Recovered

- **Americium-241**
  - Among the most widely used isotopes; the most readily available domestic supply has been exhausted
  - MOX program offers unique recovery opportunity for more than 100 kilograms; more in fuel grade plutonium
  - Current price is \$1.5 million per kilogram; U.S. is dependent on Russia for supply
- **Irreplaceable heavy isotopes**
  - Multiple applications in the Standards, R&D and Nonproliferation communities
    - Curium-246
    - Curium-248
    - Plutonium-242
    - Plutonium-244
    - Americium-243



# Value of Stored Spent Fuel is Also Recoverable

- ~15,000 fuel assemblies in L Area today
- Recovered Uranium can yield \$8B worth of energy
  - Treating used fuel as waste still incurs significant costs (packaging, transport, disposal, safeguards, etc.)



# The National Dialogue Needs to Shift

- **The U.S. needs an appropriate strategy, and operational capability, to manage nuclear materials to the fullest benefit of economic, environmental and national security needs.**
- **The fate of valuable – in some cases, irreplaceable – materials lies in the balance.**
- **SRS is the only complete nuclear management complex able to capture economic and national security value for the U.S.**