The Baby and the Nuclear Bathwater

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Governor’s Nuclear Advisory Committee
Be careful not to discard something of value with something that is of no value.
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.