



U.S. DEPARTMENT OF
ENERGY

**Environmental
Management**

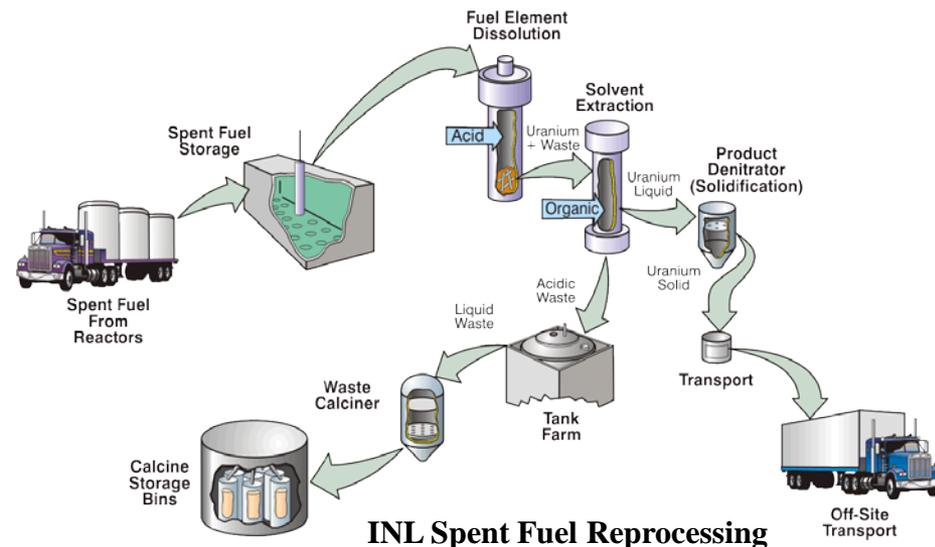
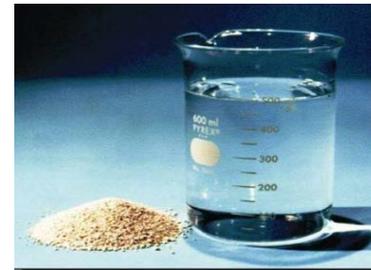
HLW Management at the INL

Mark Shaw

Background - Calcine

Calcine is Solidified radioactive waste from Spent Fuel Reprocessing

- *Converted the liquid high level waste into a granular solid using a thermal process referred to as calcination*
- *Resulted in a 7 to 1 volume reduction*
- *Calcine Properties*
 - *Mixed hazardous/high-level waste*
 - *Dry, friable powder that is dispersible and can be mobilized in both air and water*
 - *Stable noncorrosive form*





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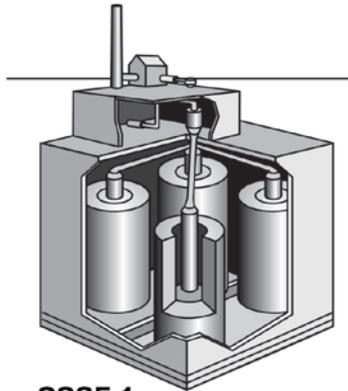
**Environmental
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Calcine Solids Storage Facility

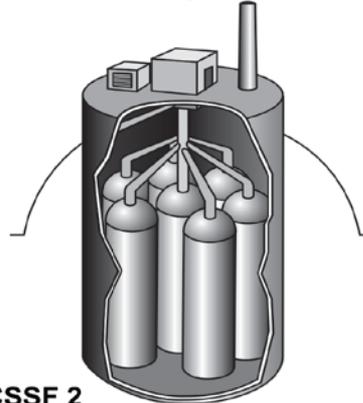




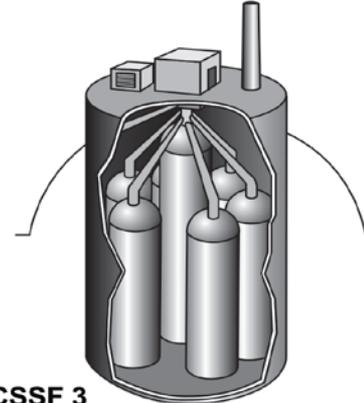
Calcine Solids Storage Facility



CSSF 1
Calcine Volume: 220 m³
Usable Capacity: 227 m³

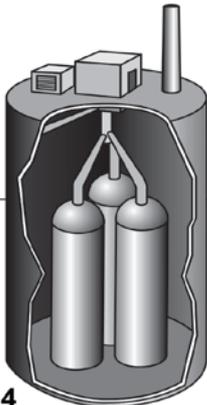


CSSF 2
850 m³
850 m³

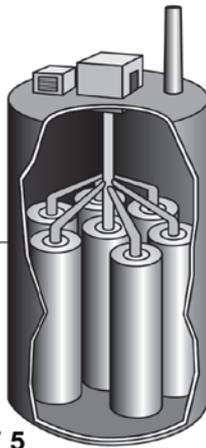


CSSF 3
1,120 m³
1,130 m³

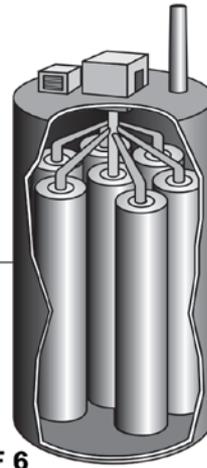
Total: 4,400 m³ of calcine waste
(INEL/EXT-98-00455, Rev.4 [Staiger and Swenson 2011])



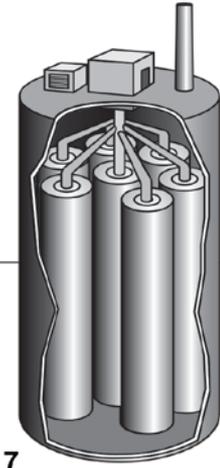
CSSF 4
Calcine Volume: 486 m³
Usable Capacity: 486 m³



CSSF 5
1,010 m³
1,010 m³



CSSF 6
713 m³
1,506 m³



CSSF 7
0 m³
1,784 m³

Calcine Disposition Project Scope

- Design and construct processing facility using existing facility (Integrated Waste Treatment Unit) to the maximum extent practical
- Retrieve and transport 4,400 cubic meters of calcine from current storage in the Calcine Solids Storage Facilities
- Treat calcine to meet revised LDR requirement
- Ship for disposition or storage outside of Idaho by 2035

Calcine Path Forward

- Calcine Disposition Project (CDP) will be separate contract (with Spent Fuel (SF) Repackaging)
- Scope: Develop dual path approach to assess CDP path forward to ensure regulatory compliance. Pre-design and design of the CDP along with develop and submit Best Demonstrated Available Technology (BDAT) petition to EPA for the Hot Isostatic Press (HIP) process.
- Contract Type: Architecture and Engineering (A&E) Cost Plus Award Fee
- Period of Performance: October 1, 2015 – September 30, 2024