U.S. DEPARTMENT OF ENERGY | OFFICE OF ENVIRONMENTAL MANAGEMENT

Risk Summary

German Pebble Bed Research Reactor Highly Enriched Uranium (HEU) Fuel Project

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~~Pre Decisional DRAFT~~

Assumptions for Development of Risks

- Risks were developed based on current technology and approach
- Provided a High, Medium or Low ranking for probability
- Provided a Summary Consequence if the risk were realized
- Provided a timing for when the risk could be realized
- This is NOT a formal risk assessment. SRNS is working on a formal risk assessment now as part of the Work for Others (WFO).

~~Pre Decisional DRAFT~~

Shipping Delays

- Identified Risks
  - b(5)
  - Receipt of ships/railcars delayed
  - Labor strikes/protests impact shipments
  - Equipment is not available
  - b(5)
- Potential Consequences
  - Operation Increased costs
  - Public perception issues

b(5)

Medium Probability

Realization for most are after the contract is signed.
* realization would be before contract or addressed in contract

~~Pre Decisional DRAFT~~

Receipt/Storage and Infrastructure Support

- Identified Risks
  - Railroad upgrades
  - Security upgrades for Storage Area
  - Pad costs under estimated
  - Unexpected Contents in Castor Cask *

- Potential Consequences
  - Increased costs
  - Schedule delays
  - Process upset *

b(5)

Low Probability

Realization for most are before the contract is signed.
* realization would be after the contract is signed

~~Pre Decisional DRAFT~~

Carbon Digestion (Frame/equipment and scale up issues)

- Identified Risks
  - Pebble removal
  - Material Accountability
  - Off gas System Requirements
  - Salt Accumulation in the offgas system
  - Separation of Graphite, Uranium, Thorium, Fission Products and Salt

b(5)

- Potential Consequences
  - Increased costs
  - Schedule delays
  - Process upsets

b(5)

High Probability (First of a kind Technology/Process)

b(5)

Pre Decisional DRAFT

HEU Recovery and Down Blending

- Identified Risks
  - Material must be classified as Defense Material to utilize SRS facilities *
  - H-Canyon Operability (physical and budgetary concerns)
  - Security Requirements for kernel accumulation

- Potential Consequences
  - Show stopper (changes original approach) *
  - Increased costs
  - Increased blend materials for Thorium
  - Process upsets

b(5)

Medium Probability

Realization timing is varied from before contract to after.

~~Pre Decisional DRAFT~~

High Level Waste Operations

- Identified Risks
  - No tank capacity to support receipts
  - Thorium in HLW system causes problems due to its Thixotrophic nature
  - HLW System Operability (physical and budgetary concerns)

- Potential Consequences
  - Increased costs
  - Schedule delays
  - Process upsets

b(5)

Medium Probability

Realization timing would be after contract finalization.

~~Pre Decisional DRAFT~~

Material /Waste Disposition

- Identified Risks
  - Waste Incidental Reprocessing (WIR) determination *
  - Number of glass canisters generated
  - Location of appropriate disposal facilities (Waste Acceptance Criteria)
  - Amount of waste generation

- Potential Consequences
  - Show stopper (everything becomes HLW) *
  - Increased costs
  - Schedule delays
  - Process upsets

b(5)

Medium Probability

Realization timing would be varied from before to after contract.

~~Pre Decisional DRAFT~~

Summary

- Project stage is at a 0% design complete
- First of a kind technology
- b(5) [redacted]
- b(5) [redacted]
- b(5) [redacted]
- We need to develop a contract that accounts for managing the risks even after the WFO work is completed.

~~Pre Decisional DRAFT~~