105-K East Reactor Interim Safe Storage Enclosure

105-K East Reactor May 2008

105K-East Reactor September 2011

Tom Teynor
February 15, 2012
105-K East Reactor Safe Storage Enclosure

Safe Storage Enclosure

Standard Approach
Safe Storage Enclosure Steel Skeleton
105KE Reactor Safe Storage Enclosure

- Advantages
  - Safest method to construct 105KE Reactor Interim Safe Storage (ISS)
    - Minimizes worker safety issues dealing with height, industrial hazards, and waste management issues
    - Stand alone encapsulation approach minimizes radiological work & exposure
    - No tie-in to existing structure-least impact regarding reactor nuclear safety
    - No removal or modification of roof or siding, minimal asbestos removal
  - Will not require extensive reactor facility interior wall and ceiling bracing to support a new roof structure that would be necessary using the standard ISS approach
105KE Reactor Safe Storage Enclosure

- **Additional Information**
  - This approach considers past consultations with Tribal nations regarding the optics of Hanford structures
    - SSE exterior color will be based on consensus opinion of the Tribal Nations
  - Reactor SSE and standard ISS approaches provide the same level of protection to the public and environment
    - Reactor interior clean-out of hazardous materials the same for both ISS approaches
    - SSE has a 75 year design life and will meet seismic and wind/environmental requirements
    - SSE roof will be angled to direct rain water runoff away from adjacent waste sites
    - Remote monitoring of the 105KE facility interior will be performed
    - Routine reactor inspections to be performed every 5 years
105KE Reactor Safe Storage Enclosure

- Additional Information (Cont.)
  - SSE meets the goals and intent of the Engineering Evaluation/Cost Analysis (EE/CA) and Action Memorandum (AM)
    - Applicable or Relevant and Appropriate Requirements (ARARs) identified in the AM and Remedial action Work Plan are met with one exception
  - SSE design will require a minor change to the AM and corresponding RAWP
    - Current AM requires the reactor ISS structure to be attached to the reactor shield walls
  - Lifecycle Costs are the same over the ISS 75 year design life with either approach
  - The SSE interim safe storage engineering designer, Meier and Associates, has previous reactor and facility ISS experience (105H and 105N/109N)
  - Lessons learned from recent N Reactor ISS, 100K Water Treatment Plant, and 200 West Pump and Treat construction projects are being applied to this project by RL and the contractor
  - The SSE approach is estimated to be $3.6 million less and nine months shorter to construct than the standard ISS method