

105-K East Reactor Interim Safe Storage Enclosure

105-K East Reactor May 2008



105K-East Reactor September 2011



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February 15, 2012



EM Environmental Management

safety ❖ performance ❖ cleanup ❖ closure

105-K East Reactor Safe Storage Enclosure

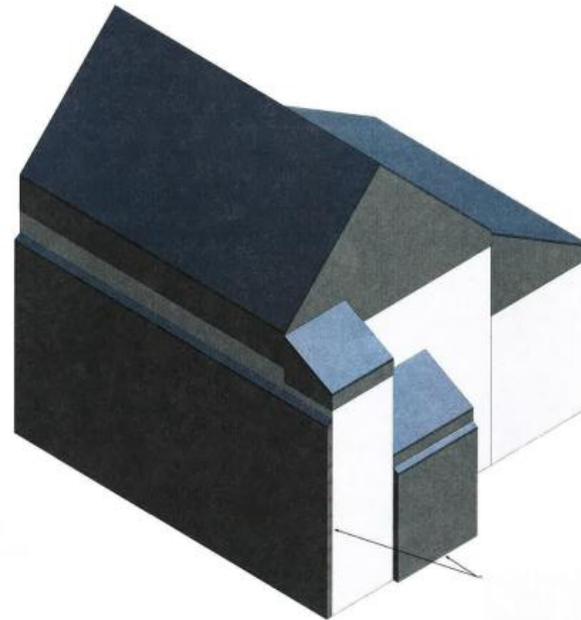
Safe Storage Enclosure



105KE SAFE STORAGE ENCLOSURE

Meier

Standard Approach



EM Environmental Management

safety ❖ performance ❖ cleanup ❖ closure

Safe Storage Enclosure Steel Skeleton



105KE SAFE STORAGE ENCLOSURE

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EM *Environmental Management*

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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**



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- **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**

