

# DEACTIVATED NUCLEAR POWER PLANT PROGRAM SM-1A, FT GREELY, AK

WM2018

Session 097b US Army Corps of Engineers - Deactivated NPP Program D&D Contracting Opportunities

Brenda Barber, P.E.

Hans Honerlah, CHMM

Baltimore District, CENAB-ENE

March 2018

*"The views, opinions and findings contained in this report are those of the authors(s) and should not be construed as an official Department of the Army position, policy or decision, unless so designated by other official documentation."*



US Army Corps  
of Engineers®



# TOPICS

- History
- Decommissioning Planning



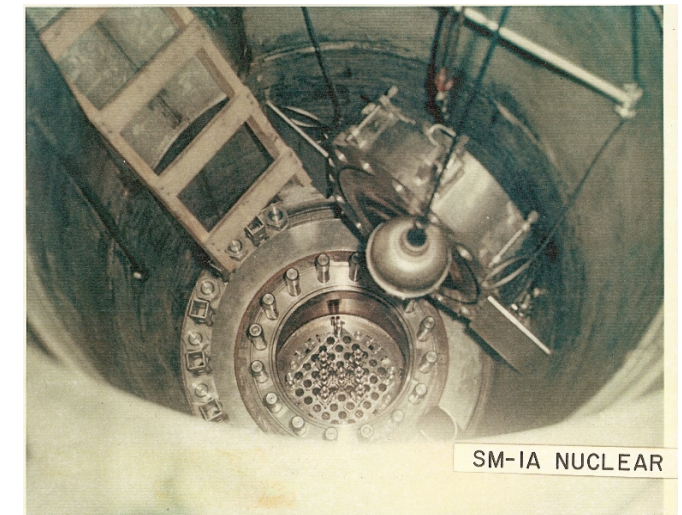
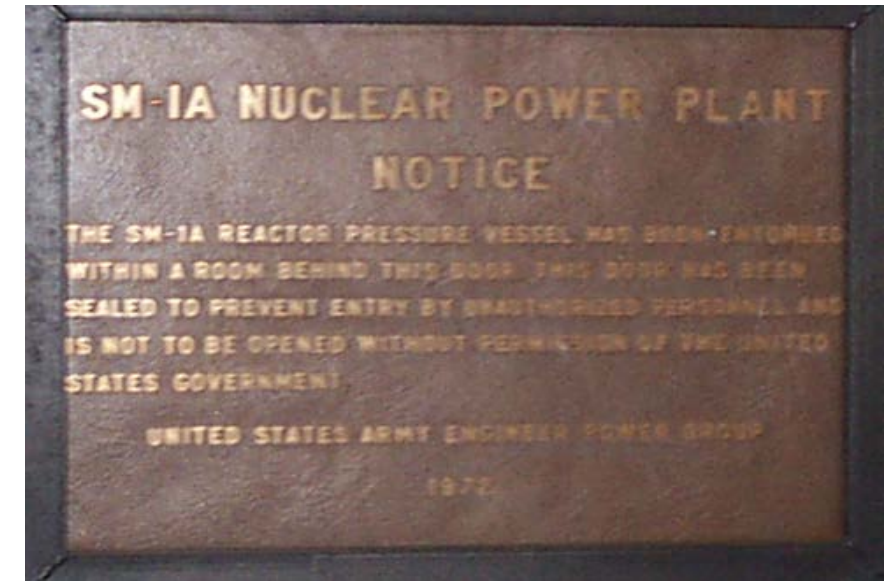
US Army Corps  
of Engineers®



U.S.ARMY

## SM-1A TIMELINE: DETAILS

- SM1A Construction start 1958
- SM-1 Reactor Startup: March 1962
  - Core II installed, April 1964
  - Core III installed, Jan 1966
  - Core IV, installed Aug 1970
- Pressure Vessel annealed, Aug 1967
- Last operation: March 1972
- Minimal Decommissioning and entombment: 1973
- USACHPPM Survey: June 1997
- BRAC Pipeline and Dilution Well Removal: 1997 - 2000
- Core Component Activation Analysis: 2008
- Contractor Historical Site Assessment: 2008
- Contractor Gamma Walkover Report: 2011
- Contractor Characterization Survey Report: 2014



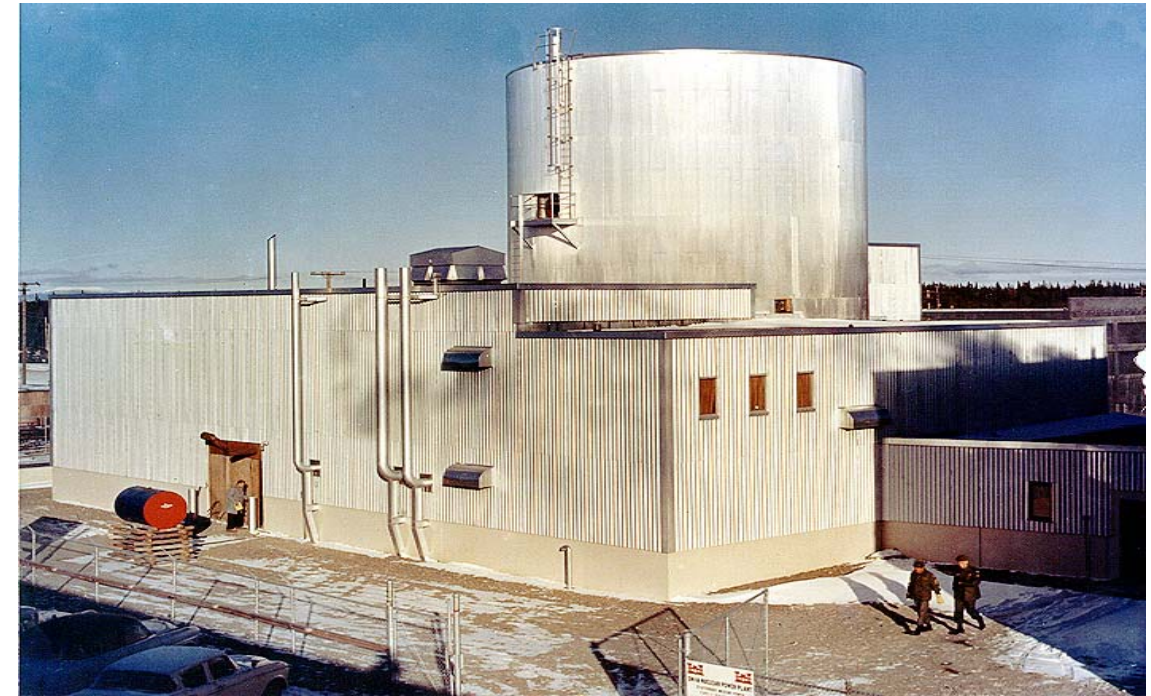
US Army Corps  
of Engineers®



U.S. ARMY

# PRE/POST-SHUTDOWN DECOMMISSIONING ACTIVITIES

- Decontamination of Primary and Secondary Systems
- Encasement of Vapor Container, Spent Fuel Pit, Hot waste tanks, pipe pit, dilution station, condenser deck, fuel storage vault, and Building J5 floor
- Placed a time capsule
- Shipped fuel elements and control rods
- Transferred calibration sources
- Disposed of radioactive wastes
- Removal of wastewater pipeline and dilution station



US Army Corps  
of Engineers®



# PRIOR CHARACTERIZATION EFFORTS TO SUPPORT DECOMMISSIONING PLANNING

- BRAC Activities 1997-2000
- Gamma Walkover Surveys 2011
- All Hazards Assessment 2011
- All Hazards Assessment Characterization Report 2014



US Army Corps  
of Engineers®



# DECOMMISSIONING PLANNING EFFORTS

- Decommissioning Planning is underway – anticipate completion by 2021
  - Contract was awarded in Dec 2017
  - Scope includes:
    - Review of historical documents associated with the All Hazards Analysis
    - Prepare planning documents that will support the Army Reactor Office issuing the USACE a decommissioning permit for the SM-1A reactor
    - Comply with other relevant Federal and State requirements that will support the long term decommissioning planning
    - Ensure adherence of project activities to NRC, Army, and Federal standards and guidance , as well as, other Federal standards and guidance where relevant, and
    - Coordinate with appropriate federal, state, and public parties to support issuance of decommissioning permit and other NEPA requirements.



US Army Corps  
of Engineers®



# MAJOR DECOMMISSIONING PLANNING DOCUMENTS

- Final Disposal Plan, Schedule and Cost Estimate
- Waste Management Plan
- Environmental Assessment
- Section 106 Effects Assessment and agreement document
- Decommissioning Plan



US Army Corps  
of Engineers®



# DECOMMISSIONING CHALLENGES

- Remote location
- Harsh climate
- Potential for a limited decommissioning schedule (May – Sep) due to climate
- Limited housing support for temporary staff in local community
- Deactivated Nuclear Power Plant co-located with Installations current central heating power plant
  - Central heating power plant operations privatized with Army Contract
- Major components were encased with grout and concrete within the Vapor Containment which will likely need to be mined to allow for removal of components
  - Reactor Pressure Vessel, Pressurizer, Steam Generator



US Army Corps  
of Engineers®





# Questions?



US Army Corps  
of Engineers®



U.S. ARMY