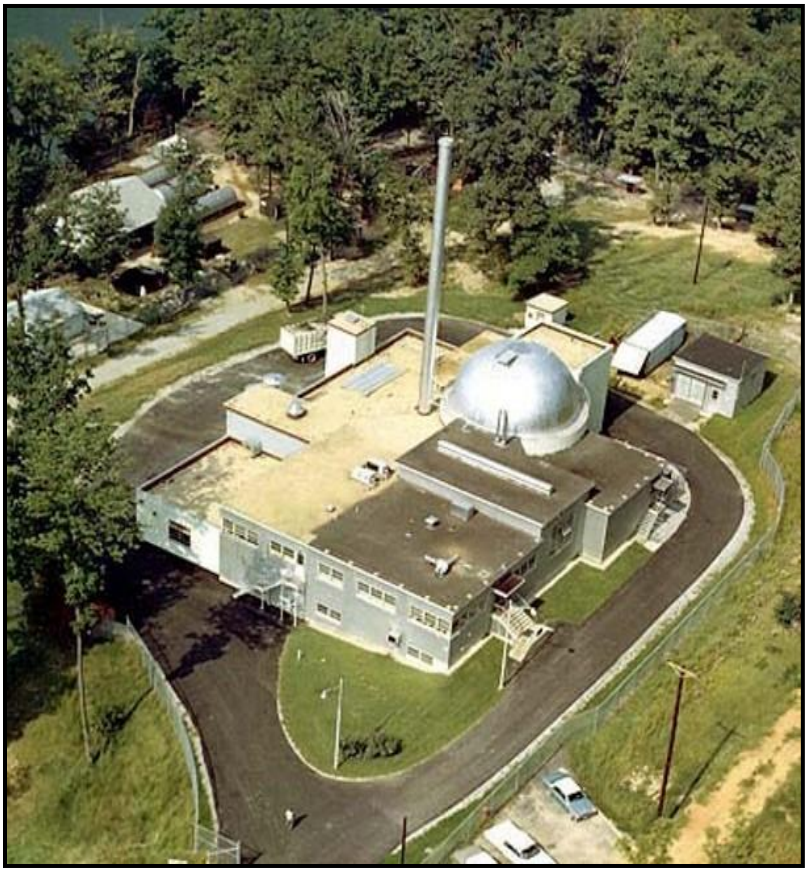
SM-1 Nuclear Power Plant, Ft. Belvoir, VA

U.S. ARMY CORPS OF ENGINEERS **BUILDING STRONG®**

FACT SHEET as of September 10, 2021

BACKGROUND



The SM-1 Nuclear Power Plant is located on the western shore of the Potomac River within the boundaries of Fort Belvoir in Fairfax County, Virginia. It is approximately 17 miles south by southwest of the center of Washington D.C.

The construction of the SM-1 at Fort Belvoir was completed in 1957, and it achieved its first criticality in April 1957. The SM-1 was a single-loop 10 megawatt-thermal (MWt) pressurized water reactor delivering a net 1,750 kilowatts of electrical power. It was the first nuclear power reactor to provide electricity to a commercial power grid in the United States for an extended period. The SM-1 Reactor operated from April 1957 to March 1973. Fort Belvoir was home to the U.S. Army Engineer Reactors Group (USAERG) and the SM-1 was used for training the multi-service crews that would operate the various plants in the program. The reactor was stationary with a medium power range (between 1000 and 10,000 KWe).

Deactivation was performed on the SM-1 Reactor in 1973-1974, in accordance with the SM-1 Decommissioning and Conversion Plan as approved by the Army Reactor Systems Health and Safety Review Committee (ARCHS). This consisted of removal of the nuclear fuel, minor decontamination, shipment of necessary radioactive waste, sealing the pressure vessel, and installing appropriate warning signs and monitoring devices.

After the completion of the facility deactivation and conversion, a third-party radiological survey by the U.S. Army Environmental Hygiene Agency **verified that known areas of radioactive contamination had been decontaminated to acceptable levels or were properly controlled.** The Army Reactor Systems Health and Safety Review Committee (ARCHS) approved SM-1 Post-Decommissioning Environmental Monitoring Plan has been initiated to provide ongoing surveillance of the decommissioned facility.

The decommissioning strategy that was developed in the 1970's recommended that the deactivated reactors be placed into a **safe storage mode** that would allow the shorter-lived radionuclides to decay. It was expected that delaying decommissioning would reduce radioactive waste volumes and worker

exposures. However, preliminary studies indicated that the levels of contamination present within the reactors would not be reduced by decay sufficiently to allow for release of the facilities without significant decontamination being performed.

USACE developed a management plan for conducting an All Hazards Assessment, which contained provisions for four phases of work to be performed. **Phase I** included a Historical Records Review and Disposal Alternatives Investigation. **Phase II** included performing a characterization survey and decommissioning cost estimate. **Phases III and IV** deal with decommissioning planning, design, and execution. The team is currently in Phase IV and working to implement the final decommissioning strategy.

STATUS

The Project Team is made up of USACE and the contractor (A2D, LLC) that was awarded the contract for the Decommissioning and Dismantlement (D&D) of the former SM-1 Deactivated Nuclear Power Plant. The Project Team is finalizing the necessary Decommissioning Work Plans and will be implementing the **Decommissioning Permit which was issued by our regulatory the Army Reactor Office**.

SCHEDULE

30-Day Look Ahead (October 2021): The Project Team will continue to finalize planning documents. Basic site preparations, such as installation of crew trailers and temporary site power, installation of security features, deenergizing existing utilities, geotechnical drilling, and water/sewer hookups to the office trailers, will be initiated. The Project Team will continue to work with the Fort Belvoir Directorate of Public Works and state and local regulatory agencies to obtain required permits.

60-Day Look Ahead (November 2021): Site preparation activities will be sufficiently completed to begin decommissioning tasks. As work progress at the site, the Project team will be reversing **Totten Road** for the duration of the project. There may be times that Totten Road will be used for inboard and outbound project traffic. The Project team has purchased electronic traffic signs to provide immediate updates to the Tenants on road activities. No pedestrian traffic on Totten will be allowed for safety purposes. Electronic traffic signs will be placed at both ends of the road as a reminder. Wilson Road will be closed just past Bldg. 374 and the Fitness Trail near the site will also be closed. Initial D&D activities will take place, which includes asbestos and hazardous material abatement, removing historical artifacts for restoration, and aboveground storage tank removal.

90-Day Look Ahead (December 2021): The Project Team will continue asbestos and hazardous material abatement, finish removing the historical artifacts for restoration, remove AC units, and begin removing exterior electrical equipment and performing fence and gate modifications. The project site will be left in a safe and secure position prior to a stand down for the holidays.

For more information join our Stakeholder list by emailing CENAB-CC@usace.army.mil, contact Brenda Barber, (410) 962-0030, e-mail brenda.m.barber@usace.army.mil. Also see this project's related web page - www.nab.usace.army.mil/SM-1