News Savannah River Nuclear Solutions

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Principal Media Contact: DT Townsend
Savannah River Nuclear Solutions, LLC
803.952.7566
dt-lawrence.townsend@srs.gov

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Innovation Key to Closure of Coal Yard at SRS

AIKEN, S.C., Nov. 23, 2020 – The final dump truck delivering limestone gravel came and went, setting the stage for the closure of a 12-acre legacy coal yard at the Savannah River Site (SRS) recently.

Until 2012, the storage yard held huge piles of coal used to feed an enormous powerhouse built in the late 1950s that provided steam and electricity for SRS missions. The facility was shut down and replaced with an innovative, environmentally sustainable technology that burns forest debris, agricultural waste, and scrap lumber to generate steam and power. The powerhouse is set to be demolished in the future.

Savannah River Nuclear Solutions (SRNS) restored the land impacted by the powerhouse.

"Any large pile of coal that sits for nearly six decades will interact with rainwater and the atmosphere," said Kelsey Holcomb, Project Manager with the SRNS Environmental Compliance and Area Completion Projects organization. "Coal contains iron sulfide, also known as pyrite or fool's gold, and when it mixes with rainwater, it creates sulfuric acid. The acidity could potentially leach into the soil and draw out toxic metals such as beryllium and chromium if left untreated."

Savannah River Nuclear Solutions Project Manager Kelsey Holcomb discusses the cleanup of the D-Area Coal Storage Yard with DOE-Savannah River Federal Project Director Karen Adams at the project site.

Cleanup of the coal storage yard prevents those metals from migrating into the groundwater and surface waters onsite, creating a less acidic environment, according to Holcomb.

"We take ownership in catching potential issues as early as possible to alleviate concerns to human health or an ecological threat condition," Holcomb said. "Completing this action to remedy the acidic condition of the soil in the coal storage yard is an important step towards the long-term protection of the environment at SRS."

Before the coal-tainted soil had been removed from the yard, it had the approximate pH of a cola-based soft drink, at 3.0 to 3.2. After crews thoroughly mixed 1,000 tons of fine-grade limestone throughout the 12 acres, down to a depth of four feet, the pH returned to around 5.5, a normal level for the region.

Throughout the six-month project, SRNS construction personnel worked on only one acre at a time to control erosion and ensure no sediment entered nearby creeks and streams as a result of soil excavation. To accomplish this task, they operated an excavator, dump trucks, a road scraper and a large industrial mixer to treat each section of the coal yard.

The sprawling coal storage yard slowly changed colors from red to gray, as the fine-grade limestone was mixed with the soil and capped with gravel.

The innovative cleanup approach expedited the project timeline and significantly reduced costs associated with traditional cleanup methods for projects of this size and scale.

"This project is typical of the creative, cost-effective, and responsible cleanup activities we continually strive for at Savannah River," DOE-Savannah River Federal Project Director Brian Hennessey said. "Working closely with our EM contractor and regulators in a core team environment of collaboration has been key to the series of successful cleanup projects at SRS over the decades."

Savannah River Nuclear Solutions, a Fluor-led company with Newport News Nuclear and Honeywell, is responsible for the management and operations of the Department of Energy's Savannah River Site, including the Savannah River National Laboratory, located near Aiken, South Carolina.

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