



FACTS

ABOUT THE SAVANNAH RIVER SITE

HB Line

HB Line is located on top of H Canyon and is the only chemical processing facility of its kind in the DOE complex. The facility was built in the early 1980s to support the production of plutonium-238 (Pu-238), a power source for the nation's deep space exploration program, and to recover legacy materials stored in H-Canyon.

HB Line has three process lines. Phase I is the Scrap Recovery processing line. Phase II is the production line for plutonium and neptunium oxides. Phase III was originally the Plutonium-238 Oxide Production Line, but is now used to prepare legacy plutonium and uranium materials stored in 3013 containers for disposition.

Phase I, also called the Scrap Recovery Line, became operational in the late 1980s and is used to dissolve and dispose of legacy plutonium scrap. It is also used to dissolve legacy uranium for blending into low enriched uranium to be shipped to the Tennessee Valley Authority for fabrication into commercial power reactor fuel. The Phase I process converts solid nuclear materials into nitrate solutions and transfers those solutions to H Canyon for disposition.

Phase II, which is the Neptunium-237/Plutonium-239 Oxide Line, can produce oxide (powder) material from neptunium-237 or plutonium-239 nitrate solutions. Phase II started operations for the first time in November 2001. The plutonium material was shipped to FB Line for packaging in 3013 containers for long-term storage, and then to K Area for storage. The neptunium material is shipped to the Idaho National Laboratory for further processing and conversion to reactor targets for future Pu-238 production.

Pu-238 has a unique combination of high heat output and long life, allowing designers to keep weight at a minimum and still have a power supply that is effective for many years. Where solar power is not practical, NASA uses Pu-238 as a heat source in Radioisotopic Thermoelectric Generators. These convert heat to electrical power to operate various deep space vehicles, such as the Galileo, Ulysses, Cassini, and more recently the New Horizons mission to Pluto. Small heat generators have also been used to keep the axle lubricant of the Martian Rovers from freezing.

Phase III is being converted into a processing facility to open storage containers when necessary, and oxidize metals to allow for dissolution in the Phase I process area. Phase III will support current and future missions to disposition legacy plutonium and uranium metals and oxides.

January 2008

WASHINGTON SAVANNAH RIVER COMPANY

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