Fact Sheets

SRS

HB Line

The HB Line is located on top of H Canyon, one of two chemical processing facilities at the Savannah River Site (SRS). 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.

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 (RTGs), which convert heat to electrical power to operate various deep space vehicles, such as the current Galileo, Ulysses, and Cassini missions.

HB Line has three process lines. The Scrap Recovery Line is used to recycle legacy plutonium scrap (sometimes mixed with other radioactive materials) for purification and concentration to a solid form. This line is also called Phase I. The Neptunium-237/Plutonium-239 Oxide Line (Phase II) can produce solid oxide material from neptunium-237 or plutonium-239 nitrate solutions. The Plutonium-238 Oxide Line (Phase III) can produce Pu-238 oxide from nitrate solutions. There is not a current mission for Phase III.

Phases I & III operated to supply Pu-238 for the Cassini mission.

Phase I is currently operating to convert oxides of uranium and plutonium to a nitrate solution. The nitrate solutions are transferred to H Canyon for disposition.

Phase II started operations for the first time in November 2001. It converts plutonium-239 and neptunium-237 to an oxide powder form. The plutonium material is shipped to FB Line for storage and eventual disposition. The neptunium material will be shipped offsite for further processing and conversion to reactor targets.

Decisions announced between December 1995 and October 1997 concluded that HB Line should be used to stabilize solutions stored in H Canyon. Plutonium-238 and plutonium-242 stabilization campaigns have been completed.

DOE has committed that plutonium-239 and highly enriched uranium from stabilization actions will not be used for nuclear weapons purposes.