

News from the Savannah River Site

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FOR IMMEDIATE RELEASE

Space Probe Used for Historic Pluto Flyby Fueled by Savannah River Site's H Canyon

AIKEN, S.C. July 23, 2015 – Savannah River Site's (SRS) HB Line and H Canyon facilities processed and produced plutonium (Pu)-238 oxide used to power the National Aeronautics and Space Administration's (NASA) New Horizons space probe, which just completed a historic flyby, providing NASA with the first-ever close-up views of Pluto.

SRS restarted the Pu-238 Oxide Line to produce the oxide for NASA's Cassini space mission in 1991. Cassini was built to explore the Saturn system. Because this un-manned mission would take many years and needed to travel a long way, NASA needed a long-lasting, compact and incredibly reliable power source. To solve that problem, plutonium inside three Radioisotope Thermoelectric Generators (RTGs) was used. RTGs take the heat from the radioactive decay of Pu-238 and convert it into electricity. The RTG used for New Horizons currently produces about 200 Watts of electrical power.

Over 27 space missions have used RTG power sources, including 10 in Earth orbits, five moon missions, three Mars missions and nine planetary missions.

The same type RTG used in Cassini was used to power New Horizons. RTGs are rugged and reliable, with no moving parts to wear out or break, making an RTG the perfect power source for the spacecraft, which took a 9.5 year, 3-billion-mile journey, to fly by Pluto.



The New Horizons space probe while in construction. The black, finned extension on the left side of the picture is the RTG.

Both Cassini and New Horizons have completed their primary missions, but they are still functional. Cassini will continue to survey Saturn's rings and New Horizons will continue to probe into deep space for many years to come.

Pu-238 Radioisotope Heater Units (RHUs) also use plutonium from SRS. RHUs do not produce electricity; they are only used as a heat source. Mars Rovers Spirit and Opportunity are solar powered, but use RHUs to keep axle grease from freezing.

Savannah River Nuclear Solutions is a Fluor-led company whose members are Fluor Federal Services, Newport News Nuclear and Honeywell, 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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