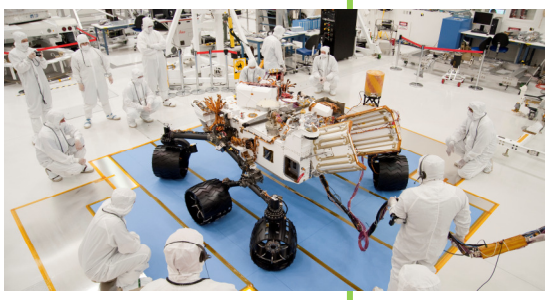
Supplement Analysis and Determination for Pu-238 Production

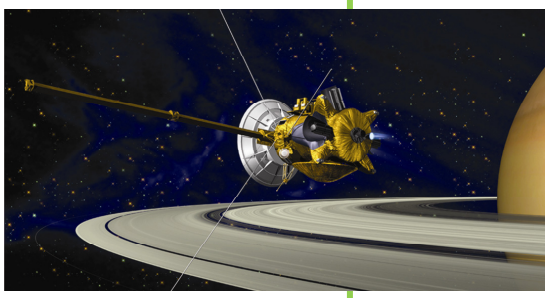
Radioisotope power systems enable space exploration and national security missions.

The Department of Energy (DOE) and its predecessors have provided radioisotope power systems that have safely enabled deep space exploration and national security missions for five decades.

Radioisotope power systems (RPSs) convert the heat from the decay of the plutonium-238 (Pu-238) isotope into electricity. RPSs are capable of producing heat and electricity under the harsh conditions encountered in deep space for decades. They have proven safe, reliable, and maintenance-free in missions to study the moon and all of the planets in the solar system except Mercury.



Recent missions include the Mars Science Laboratory rover, which landed in August 2012 and is the first NASA mission to use the Multi-Mission Radioisotope Thermoelectric Generator (an advanced RPS which uses less Pu-238), and the RPS-powered New Horizons spacecraft that is en route to a planned Pluto encounter in 2015.



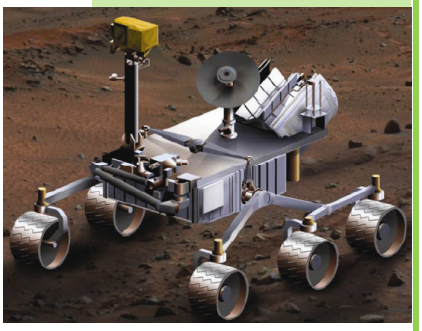
Supplement Analysis and Determination for Pu-238 Production

DOE maintains the nuclear infrastructure to develop, manufacture, test, analyze, and deliver RPSs for space exploration and national security missions. DOE provides two general types of systems – power systems that provide electricity, such as radioisotope thermoelectric generators (RTGs), and small heat sources called radioisotope heater units (RHUs) that keep spacecraft components warm in harsh environments. DOE also maintains responsibility for nuclear safety throughout all aspects of the missions and performs a detailed analysis in support of those missions.

In December 2000, the DOE issued the *Programmatic Environmental Impact Statement for Accomplishing Expanded Civilian Nuclear Energy Research and Development and Isotope Production Missions in the United States, Including the Role of the Fast Flux Test Facility* (Nuclear Infrastruc-

Supplement Analysis and Determination for Pu-238 Production

MSL Rover on Mars



ture or NI PEIS) to evaluate alternatives for potential enhancements to DOE's nuclear infrastructure that would allow it to meet its responsibilities over the next three to four decades. In this document, DOE decided to reestablish domestic production of Pu-238 for RPSs to support the National Aeronautics and Space Administration (NASA) and national security missions.

Although a Record of Decision (ROD) for the NI PEIS was published in January 2001, DOE has not implemented the decision to date. The delay in the implementation of the ROD was due to programmatic considerations in 2005 for possible consolidation of nuclear operations related to production of RPSs (including production of Pu-238) at a single DOE site.

In January 2013, DOE determined that the 2001 ROD offers the optimum approach for production of Pu-238. However, prior to implementing the 2001 decision, DOE conducted a Supplement Analysis (SA) of the NI PEIS in accordance with DOE's National Environmental Policy Act (NEPA) implementing procedures, to determine if there are significant new circumstances or information relevant to environmental concerns which would warrant preparation of a supplement to the NI PEIS or a new EIS, or that the 2001 decision can be implemented without any further NEPA review.

DOE completed the SA in September 2013 and has made the determination that there are no substantial changes to the original proposal for production of Pu-238 analyzed in the NI PEIS or new circumstances or information relevant to environmental concerns that would warrant preparation of a supplement to the NI PEIS or a new EIS, and that the 2001 decision made in the NI PEIS ROD for Pu-238 production can be implemented without further NEPA review. The NI PEIS SA (DOE/EIS-0310-SA-02) has been posted on the DOE NEPA web site: http://energy.gov/nepa/supplement-analyses-sa and announced in the September 16, 2013, Federal Register.

For further information on the Pu-238 Production Program, please contact:

Ms. Rebecca Onuschak
DOE Office of Nuclear Energy (NE-75)
301-903-0023
rebecca.onuschak@nuclear.energy.gov

For information on NEPA analysis for Pu-238 production, please contact:

Dr. Rajendra Sharma
DOE Office of Nuclear Energy (NE-31)
Phone 301-903-2899
rajendra.sharma@nuclear.energy.gov