

The background of the entire image is a deep space scene. It features a dark, velvety blue-black sky filled with numerous small, distant stars. On the right side, there are vibrant, glowing nebulae in shades of orange, red, and purple, with some brighter star clusters. The overall effect is one of vastness and celestial wonder.

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NASA's Fission Surface Power Project

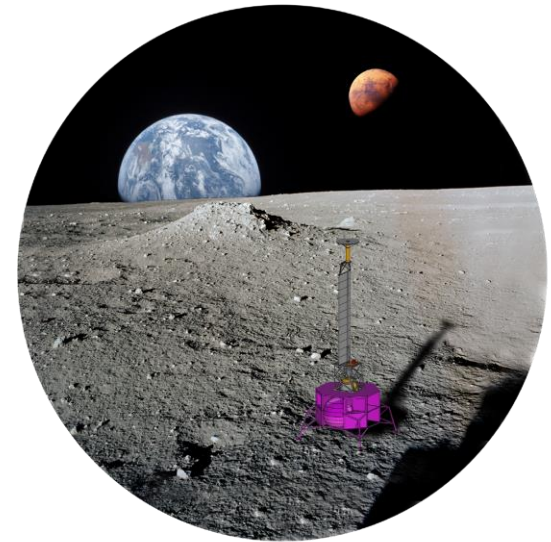
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Nuclear Power for the Moon and Mars

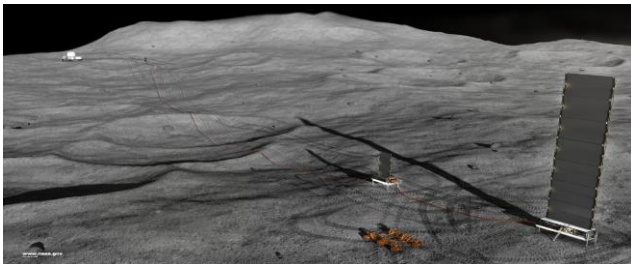
Nuclear power systems enable robust exploration of the Moon and Mars

- Reliable energy production is essential to exploration missions
- Fission power systems can provide abundant and continuous surface power in all environmental conditions on the Moon and Mars
 - Lunar night is 14.5 Earth days long
 - Mars has recurring planet-wide dust storms that can last for weeks
- A fission system designed for a demonstration on the Moon will be directly applicable to human Mars exploration



Fission Surface Power (FSP) Project Overview

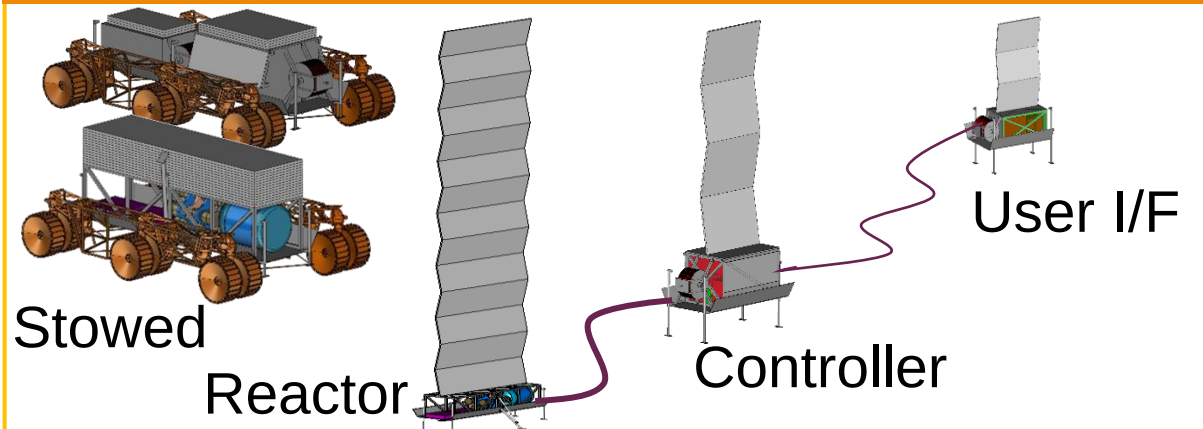
- Develop a space qualified fission surface power flight unit before 2030
- Collaborate with the Department of Energy, Idaho National Lab (INL), Los Alamos National Lab (LANL)
 - INL manages the industry contracts. LANL provides reactor expertise
 - Develop a government concept
 - Conduct power conversion maturation
 - Conduct nuclear technology maturation



Key Design Characteristics

- 40 kWe output at 120 Vdc
- 6000 kg mass limit, fits on a lander
- 5 rem/year above background at 1km
- Operate on the lander, or be transported

Government Reference Concept

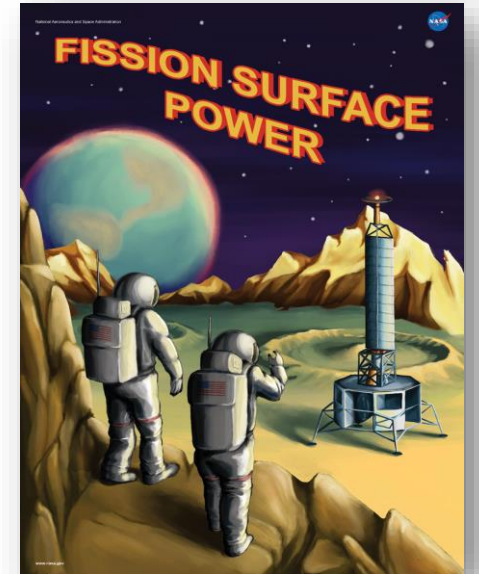


Note: Industry will determine the design

Fission Surface Power (FSP) Project Overview

Industry will design and develop the system in two phases

- Phase 1:
 - Contractor teams working 1-year contracts for initial designs
 1. IX; Intuitive Machines and X-Energy – partnering with Maxar and Boeing
 2. Lockheed Martin – partnering with BWXT and Creare
 3. Westinghouse – partnering with Aerojet Rocketdyne
 - Deliverables include design documents, requirements, schedule and cost estimates for Phase 2
- Phase 2:
 - Will be a separate, open and competitive procurement
 - Deliverables include a qualification unit and flight unit



NASA and DOE are collaborating on a fission surface power system development



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