

SPACE SYSTEMS SYMPOSIUM (D1)
Hosted Payloads - Concepts, Techniques and Challenges, Missions and Applications (7)

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HOSTED PAYLOAD DEMO FOR ASRG

Abstract

This paper describes a concept to demonstrate the operation of an advanced power supply (known as ASRG) in space for an extended period of time as a hosted payload. The demonstration unit will test the highest-risk technologies associated with the Advanced Stirling Radioisotope Generator (ASRG) design while eliminating the complexities and cost associated with the already-demonstrated General Purpose Heat Source (GPHS) by using electrical power from the host to drive heaters in place of the GPHS. The primary goal of this demonstration is to verify the system performance of these new technologies in the space environment for an extended period of time. A secondary goal is to operate through the launch environment. These goals could be accomplished aboard a host Geosynchronous Earth Orbiting (GEO) satellite or the International Space Station (ISS), as long as electrical power is available to the electric heat source. This paper also discusses the accommodation considerations for interfacing the demonstration unit on a host satellite. The overarching objective is to provide additional confidence in the suitability of the ASRG for use in deep space missions.

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