



SUNPOWER ACCOMPLISHMENTS ON THE NASA ASC-E3 PROGRAM

November 29, 2016

ATHENS, OH – What began as a technology development initiated in 2003 under a NASA Research Announcement contract has culminated in a total of 26 Advanced Stirling Convertors (ASC) being delivered to NASA, including eight built to the ASC-E3 design as the last step to deliverable space-flight models for NASA Radioisotope Power Systems (RPS). While the Flight project was cancelled due to NASA budget constraints in 2013, the ASC-E3 project continued to completion in December 2015 and successfully demonstrated Sunpower's production capabilities and engine performance.

All eight ASC-E3 convertors exceeded product specification requirements for performance with an average of 39.7% thermal-to-electric efficiency. As of October 2016, six convertors had passed 2,000 hours of error-free operation as part of NASA Glenn Research Center's independent performance verification testing. ASC-E3 #4 has completed launch and acceptance level vibration testing and accumulated over 17,500 hours of operation. ASC-E3 #6 has also completed approximately 7,500 hours of error-free operation, launch and acceptance level vibration testing, and an additional 2,000 hours of error-free operation. These two convertors have achieved TRL 6 status in accordance with guidance from an independent Technology Readiness Assessment Board. EMI, thermal vacuum, and various durability tests have also been completed on various ASC builds throughout the years.

Overall, ASC convertors have accumulated more than 420,000 hours (48 years) of testing at NASA GRC. The ASC-E3 design implemented full flight requirements and passed a Flight Manufacturing Readiness Review, positioning Sunpower to produce Flight-capable convertors of the latest ASC design or implement the technology and lessons learned from ASC into a new design.

Sunpower is a unit within AMETEK Advanced Measurement Technologies (AMT), which is a division of AMETEK, Inc., a leading global manufacturer of electronic instruments and electromechanical devices with annual sales of \$4.0 billion. More information is available at www.sunpowerinc.com.



ASC-E3 Convertors