

POWER SUPPLIES FOR SPACE SYSTEMS
QUALITY ASSURANCE BY SANDIA LABORATORIES

I. Introduction

The Sandia Quality Assurance organization has been involved in many programs in addition to those in Sandia's principal area of responsibility--engineering of nuclear weapons. One of the oldest such reimbursable efforts has been the QA responsibility for Radioisotopic Thermoelectric Generators (RTG's) for space systems, and more recently for terrestrial applications. June 1976 marked the completion of 10 years of Sandia QA responsibility in the RTG area. This anniversary, coupled with the completion of one RTG program and the launching of the Lincoln Laboratory Experimental Communications Satellites (LES 8/9) on March 14, 1976, have prompted the publication of this summary report concerning Sandia's QA role in RTG programs.

II. History

Overall responsibility for SNAP programs (Systems for Nuclear Auxiliary Power devices, more rightfully called RTG's since most often they are the sole source of satellite power) lies with the U. S. Energy Research and Development Administration (ERDA) Division of Nuclear Research and Applications (DNRA), formerly the Space Nuclear Systems Division (SNS). In mid-1966 SNS requested Sandia to assume technical direction of RTG programs, and transferred the QA responsibility from the Atomic Energy Commission's New York Operations Office to the AEC's Albuquerque Operations Office (AEC/ALO). This move consolidated RTG operations and implemented more of a weapons-type QA program for SNAP.

Quality Assurance Sandia Laboratories (QASL) became involved in the quality program for RTG systems in June 1966 when AEC/ALO formally requested assistance in areas of planning and development, scheduling, data collection, and analyses. Effective December 1, 1967, the AEC requested that QASL assume full responsibility for RTG QA programs with Sandia as Technical Director. On December 1, 1970, the Sandia role of Technical Director was terminated and transferred to the Division of Space Nuclear Systems (SNS) AEC Headquarters, except for safety analyses support, which was completed in 1971. At the same time, SNS requested that Sandia Laboratories continue to be responsible for RTG QA. It was mutually agreed that in July 1971, SNS and Sandia would review the desirability of continued QASL participation; both parties subsequently agreed to continue the arrangement.