High-Performance Generator - Mod 3 -- The High-Performance Generator - Mod 3 (HPG-3) program's contractor is Teledyne Energy Systems, Timonium, Maryland. This program provides for one electrically-heated generator and four RTG's to be delivered by the end of 1977. This system, designed for a terrestrial application, uses the Multi-Hundred Watt Isotopic Heat Source. The design envisions 10 thermoelectric modules, each with 28 thermocouples, for a total of 280 couples in a series parallel arrangement, to produce 150 watts after four years with a 13-volt load, nominal, and a 150-pound maximum weight. The design is to parallel closely that of the previous HPG engineering unit, except that the outer case will be aluminum rather than mag-thorium which was previously used. General Electric is responsible for the Isotopic Heat Source which Monsanto Research Corporation will assemble and ship as GFE to Teledyne.

VII. Outlook

As of mid 1976 two RTG programs were active:

1. Multi-Hundred Watt Mariner-Jupiter/Saturn (MHW)
2. High-Performance Generator Mod 3 (HPG-3)

MHW Status

The hardware processing workload peaked, and RTG assembly, processing, and testing efforts were dominant at mid-year. Flight RTG's are scheduled to be accepted from GE in April, July, August, September, October, and December 1976 (total of seven RTG's). Sandia's field workload will taper off starting in the fall of 1976.

HPG-3 Status

Manufacturing operations are commencing. One fulltime SQAR, starting in May 1976, is expected to handle the field workload. One electrically-heated generator is scheduled for delivery in September 1976, with flight RTG's scheduled for delivery in October 1976 and March, August, and December 1977 (total of four RTG's).

DNRA expects to seek Sandia QA support for several new programs. After MJS and HPG-3 field activities phase out, it appears that QASL's major emphasis for several years will be on quality engineering because the new programs are several years away from the production phase. Expected activities on these new programs include participation in preliminary and final design reviews, reviews and audits of contractor QA and Reliability plans, and eventually the field SQAR monitoring and acceptance functions. It is expected that in the future QASL will concentrate more on quality engineering and assurance functions and less on quality control activities.