

The SNAP-27 program was a part of the nation's most prestigious and challenging space program: the Apollo lunar landings. Pitrolo described the landing process: "We had to solve every problem you could imagine. You have to understand the pressure the Apollo program was under to get moving. With the original Apollo launch schedule, we only had a two-year lead time; and we would never have been ready with RTGs of the best quality." The Cape Kennedy fire in early 1967 delayed the total Apollo program approximately one year, which enabled the SNAP-27 program to catch up and supply high quality hardware to power an ALSEP.

One of the first and biggest difficulties was getting predictability from the materials being used. The SNAP-27 team was committed to using the 3M Company's lead telluride thermocouples, and they had to learn about lead telluride processes themselves. Other tasks included learning how to join and coat the beryllium that was used as case material. There were numerous safety problems also. One of the biggest challenges was putting the RTG on the Lunar Module Craft, which carried two astronauts from the command module to the lunar surface. Weight was a primary concern. Moreover, the Lunar Module was not a re-entry vehicle; it would remain on the lunar surface. Yet it was the vehicle on which, according to mission planners, the RTG had to be transported. This meant that a re-entry container had to be constructed just to carry the RTG capsule. The RTG people were restricted to 7 to 12 pounds of weight for this cask.⁴⁰

"Harry Finger saved our program," said Pitrolo. "When we first presented our ideas to him under the \$4.6 million contract, he said: 'You're success oriented, but you don't have the technology base you need.'" Finger then defended the program with Congress to obtain more money. His success there enabled the General Electric people to expand their capabilities so that they could do the necessary tests themselves, learn about the materials, and become involved in safety. Pitrolo reported, "Later Finger told us: 'Now I feel confident if you run into trouble you'll be able to fix things.'" ⁴¹

The SNAP-27 program exemplified the type of broadened base of technical support Finger said was necessary as the RTG program became involved in more complex space-mission systems. According to Pitrolo, there were several budgets on the SNAP-27, including the fueling funds (Mound Laboratory), funds for the Sandia technical support (along with separate safety funds