

Gradually other companies were drawn into RTG development, but the Martin Nuclear Division remained the major developer. Martin felt the tight funding squeeze of the program and the restrictions of "hardware-oriented research" even as the company extended its work to new devices for both DOD and NASA. In a briefing of the AEC Commissioners in late 1962, R.D. Bennet, general manager of Martin, complained that funding was limited, that the development of SNAP devices was restricted to specific missions, and that the program lacked a broad research and development effort that should be directed particularly toward increasing power-to-weight ratios and insuring reliability as power requirements increased.<sup>22</sup> In retrospect, however, in spite of continuing complaints about lack of funding, proponents of the RTGs at the AEC realized that the strength of the program was in mission oriented research and development which focused on the requirements of specific missions.

Experiences in preparing for the launch of the SNAP-9A second generation RTGs during 1962 and 1963 were repeated many times in the following years as the developers of the quiet technology became accustomed to uncertain lead times and strove to be ready at the launch pads whenever the signal on a mission finally was "go." Changes in load requirements for the Navy satellites affected the converter design. Other problems arose in thermal cycling: in the course of long term vacuum testing, air entered into one of the units and oxidized the thermoelectric package. Moreover, the launch vehicle had been modified in October 1962 and a first launch date, originally set for December, was postponed to February and then to mid-May 1963.<sup>23</sup> Other postponements occurred. With launches finally scheduled for September, October, and November 1963, a process was instituted in August for receiving the Commission's and the president's approval for using the plutonium-238 fueled SNAP-9A generators on Navy navigational satellites flown out of the Pacific Missile Range.<sup>24</sup>

In response to last minute disagreements regarding safety, information on safety was developed and provided to reviewers almost up to launch time.<sup>25</sup> Following the Commission's approval a few days before the first launch, the Space Council advised the AEC of the president's approval. An AEC press release on the late September launch announced that the Navy navigational satellite launched from Vandenberg was the "First To Be Wholly Powered By Nuclear Energy."<sup>26</sup> In early December another AEC press release was headlined