As the 1950s opened, the wedding of the quiet technology to early space efforts was spurred by cold war confrontations that dictated developments in both atomic and space science.

The United States' monopoly of nuclear weapons ended in 1949 when the Soviet Union exploded a nuclear device of its own. The decision by President Truman to proceed with the development of a hydrogen bomb (H-bomb) followed within five months. Great power tensions reached a new high in June 1950 with the beginning of the Korean War. New military demands and the development of the H-bomb led to a tremendous expansion of AEC production facilities in the fall of 1950. New plants for producing plutonium were a major part of this expansion. Nuclear weapon testing increased also, and America's first experimental thermonuclear device was detonated at Eniwetok in the fall of 1952. In the years 1950 to 1953 the AEC created a vast complex dedicated almost totally to military purposes.[15]

During the cold war years, when the weapons race among the super powers intensified, the adversaries also pursued ever more sophisticated methods for learning about each other's technological advances. Surveillance satellites became major elements in the early space race, and radioisotopes had the potential for providing power for these military satellites. An early study by the North American Aviation Corporation had considered radioisotopes for space power.[16] Then a RAND Corporation report in 1949 discussed options for space power in "Project Feedback," strategic satellite reconnaissance the corporation was studying, and concluded that a radioactive cell-mercury vapor system was feasible for supplying 500 watts of electric power for up to one year.[17] These assessments and the growing recognition of power requirements in Project Feedback led the AEC in 1951 to commission studies of a 1-kilowatt electrical space power plant using reactors or radioisotopes. Several companies who performed these studies recommended the use of isotopes for space power. In 1952, the RAND Corporation issued a Project Feedback summary report with an extensive discussion on radioisotopic power for space.[18] The interest in isotopic power for space satellites increased.

A significant achievement for the quiet technology occurred in early 1954 at Mound Laboratory in Miamisburg, Ohio. It was at this laboratory, which in future years prepared the fuel packages for succeeding generations of isotopic devices, that scientists pioneered the design of a thermocouple to convert