

with Saturn.³⁰

Not only had radioisotopic power survived extreme radiation, but according to Hall, “in the escape trajectories of those Pioneers from the solar system, the RTGs really paid off. They’re still operating, although they are degrading. After 13 years, the power on Pioneer 10 is down to about 120 watts. I think it will run out of power in 1994.” According to Hall, later Pioneers—to Venus—did not use RTGs because they went close to the sun. He explained: “If you’re going to stay near the Earth or even go around the sun, solar is cheaper, and less trouble.”³¹

Nuclear Fears and Energy Dilemmas

At the close of 1974, the nation faced new unknowns both in space and in the future of nuclear power. An era ended as the AEC completed its final days. A history of the Atomic Energy Commission summarized the changed situation:

In the preceding decade the Atomic Energy Commission had lost much of its privileged status with Congress and the American public. The exclusive monopoly and the mantle of secrecy had been largely removed, and no longer did atomic energy seemingly provide the perfect formula for both military defense and civilian energy needs.³²

The space program also faced many uncertainties. Plans for manned planetary exploration had been shelved. An unmanned space program was still alive, but there were revisions and delays in more ambitious plans for Grand Tours of the solar system. Viking '75 to Mars was firm and on schedule; NASA administrators speculated about a Viking '79 mission and the possibility of a Pioneer Jupiter orbiter mission in 1980. Such a program would require RTG power—and perhaps reactor power for the deep space needs of the 1990s and after.³³

A basic concern was the extent to which future missions would have to rely on the use of the space shuttle which NASA had been pushing since the beginning of the decade as a major cost-effective element in its post-Apollo programming. Use of a manned shuttle as a launch platform would bring new problems to designing for safety in the use of RTGs. Dick of Teledyne pointed out, “Early on, when nuclear was much in vogue, publicity was good. But when the anti-nuclear thing got started, we assumed a low profile on uses of