
INTRODUCTION

Origins of Basic Energy Sciences

By the close of World War II, it was dramatically evident that fundamental knowledge of atomic and nuclear physics had tipped the balance of world power. The Manhattan Project, which gave rise to the atom bombs of Hiroshima and Nagasaki, vividly demonstrated the importance of basic research and its linkages to some of the most urgent national priorities.

After the War, there was a need to continue the research and development activities of the Manhattan Project and to take the opportunity to turn some of them towards non-military purposes. These were formally organized under the Atomic Energy Commission, chartered by the Atomic Energy Act of 1946.

The Commission's charter directed it, in part, to ensure continuity of ongoing activities and to carry out a diversified program of basic research. Specifically, the charter directed the Commission "to assist in the acquisition of an ever expanding fund of theoretical and practical knowledge" relating to the Commission's mission, including the peaceful use of the atom.

Basic research programs in atomic, nuclear, and radiation physics, and in related disciplines of chemistry and applied mathematics, were foremost among those brought forward from the Manhattan Project. The work was carried out in much the same way as it is today, by universities and National Laboratories, in conjunction with selected commercial and industrial collaborators.

These early basic research programs formed the origins of a body of work guided by the Commission's Division of Research. Later, the name of this Division gained some specificity as the Division of Physical Research, in part to distinguish it from an expanding program of biological and medical research in health, radiation effects, and medical uses of radiation.

In 1971, with early concerns about rising petroleum imports, the charter of the Commission was expanded to include other forms of energy and related technologies. During the period of expansion, additional focus was given to "more efficient methods for meeting the Nation's energy needs."

With a broadening emphasis on other forms of energy, many of the Division's basic research activities were collected under a new program name, Basic Energy Sciences. Although the name has stayed the same for nearly two decades, its program content has continued to evolve, punctuated by several additional historical developments.

In 1973, Arab oil exporting nations effected an embargo of shipments of petroleum to the United States and its allies, precipitating an "energy crisis." The resulting perturbations disrupted free world economies for much of the remainder of the decade.

On December 31, 1974, as part of a larger series of energy related national policy initiatives, the Atomic Energy Commission was abolished. Its functions, including Basic Energy Sciences research, were reorganized under the newly created Energy Research and Development Administration.

The Energy Research and Development Administration was chartered with an expanded research mission. In addition to research on nuclear energy, basic research responsibilities were broadened to include solar, fossil, conservation, and geothermal research.

Finally, 2 years later, the year 1977 saw the establishment of the U.S. Department of Energy. The formation of the Department gathered under one authority most of the energy-related activities which had evolved during the 1970's among a number of Federal agencies.