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FOREWORD

In his never-ending quest to control his physical environment, perhaps man's most epochal achievement has been his tapping of the elemental forces within the atom. Born, so to speak, of military necessity barely a decade ago, this innovation was immediately conceived to possess enormous constructive as well as destructive potential. Accordingly, as martial demands grew less insistent, attention, energies, and resources were increasingly turned to exploration of the atom's peaceful applications. More advanced and effective techniques for exploiting atomic energy have been devised and refined, and myriad new uses have been investigated and confirmed—but of all developments, perhaps the most significant has been the successful harnessing of the atom to the generation of electricity, the universal vade mecum of a better material life.

This, of course, is not to say that the day of cheap and abundant atomic power has already arrived. Far from it. But it is dawning. Critical technical obstacles have been and are being overcome; and though the surface may be said scarcely to have been scratched, sufficient data have been compiled to permit educated—and optimistic—estimates of feasibility under various assumptions for the not-too-distant future.

Almost as challenging in its own way as the technical problems faced has been the task of devising an institutional framework in which this evolving atomic technology may best be fostered, consistent with national security and other competing policy interests. The Atomic Energy Act of 1954 represents at least an interim solution, and it is primarily to an examination of some of its more salient and controversial features that this symposium is directed.

Since termination of military control in 1946, direction of atomic energy matters has largely been vested in the Atomic Energy Commission. Originally launched as an operating agency, the Commission has since acquired, by virtue of the 1954 act, regulatory and promotional duties as well. This confusion of functions has caused complications and has raised some question as to the propriety of the Commission's administrative structure and organization for its new role in atomic power development.

Individuals and special interest groups other than the Atomic Energy Commission have also had a hand in shaping our atomic energy policies—most prominently, Congressional Joint Committee members, military officials, and the President and his advisers. Their philosophies, their interrelationships, and the effectiveness with which they make themselves felt profoundly have influenced and will influence the course of atomic power development.

One of the most difficult and delicate problems in this area, because of its extensive ramifications, has been determination of the manner in and the conditions under which the results of extensive publicly-sponsored nuclear research should be made available to private interests. Unearned increments, in the form of technical know-how, were accruing to the large atomic energy contractors, further enhancing their inherent comparative advantage in this infant industry. Some equalizing mechanism was strongly indicated, and the information control and patent provisions of the 1954 act have been the guises it principally assumed. The extent to which these provisions have successfully accommodated the somewhat antithetical values of national security, broad dissemination of technical information, and stimulation of rapid technological advancement, however, seems to be open to some question.

Not surprisingly, in light of its pervasive significance, atomic power development has acquired strong political overtones, both domestically and internationally. The always-explosive public-power issue has intruded itself via the preference provisions of the 1954 act, which, although somewhat attenuated, have a not inconsiderable import for the future. And the international implications of atomic power development—its interaction with our foreign policy and the manner in which it can and should be employed to further both our national interests abroad as well as the cause of world peace—are perhaps the most crucial aspect of this whole subject.

Finally, there is the problem in our federal system of precisely defining the relationship between the national and state governments and accurately delineating the proper scope of operation of each so as most effectively to create a "climate" conducive to optimal development of this new technology.

This symposium is not—nor, indeed, does it pretend to be—exhaustive, even in these few areas it touches. Nevertheless, it is hoped that it will limn, however skeletally, the outlines of atomic power development to date and in the foreseeable future, conveying some of its technical, administrative, economic, legal, and political flavor, and thus promoting greater understanding and appreciation of the bright promise this imminent revolution portends.

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