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Department of Energy–University Relationships

It is important that we utilize and increase research capabilities in energy-related disciplines at universities. Support should be provided to maintain vigorous long-range research programs and thus enable faculty and graduate students to contribute more effectively to the solution of national energy problems. Sustained research support to universities would also ensure a continuing flow of energy research scientists and energy managers as graduate students complete their studies in energy fields.

Universities must also be involved in energy research if they are to function effectively in energy information transfer. This can be accomplished through formal classroom instruction, adult education and continuing education programs, and organized extension programs such as the Department of Agriculture–university Cooperative Extension Service. Current federal programs to promote energy conservation and the use of solar energy are good examples of programs that will require continuing local and regional educational efforts to gain public acceptance and to ensure wise consumer response.

Much has been said about building an effective working relationship between the Department of Energy (DOE) and universities, but relatively little has been accomplished other than through programs carried over from the Atomic Energy Commission. Sustaining research agreements have been developed between DOE and a very limited number of universities and some attention has been given to more effective handling of unsolicited research proposals. Most research support, however, is still being allocated to federal laboratories and industry while university efforts are largely purchased rather than supported. A task force has been appointed by DOE to study procurement practices, but much more positive action is needed.

Some question whether we can hope to see significant changes in DOE-university relationships before legislation is developed that specifies university involvement in national energy efforts and the national energy organizational structure is stabilized. The national energy effort has suffered severely because of the continued reorganizations—from the Federal Energy Agency to the Energy Research and Development Administration to the DOE—which have involved changes in leadership, reassignments of individuals, and changes in program emphasis.

The DOE should recognize the serious manpower problems that are developing at the graduate level in energy fields and initiate corrective action now rather than wait for a crisis. Of particular importance is engineering manpower at the doctoral level. Forty-four percent of all Ph.D.'s employed in energy-related fields in 1977 were engineers. Yet between 1972 and 1977, the number of those receiving Ph.D.'s in engineering per year fell 24 percent, from 3476 to 2641. The numbers of U.S. citizens who obtained Ph.D.'s in engineering decreased even more sharply, from 2329 to 1507, a reduction of 35 percent. It should be noted that 42.8 percent of the engineering Ph.D.'s awarded in 1977 in the United States went to noncitizens. Despite increases in the numbers of undergraduate engineering students, not enough students are currently enrolled in graduate engineering programs to produce the Ph.D.'s needed to fill engineering faculty positions and provide leadership in energy-related research. Shortages will become even more critical as major synfuel production efforts are launched and solar research and development activities are increased.

It is in the best interest of our country that the DOE take positive steps now to ensure significant levels of university participation in national energy programs through research, education, and public service activities. It is also critically important that the DOE provide strong leadership to ensure the future availability of manpower essential to our long-range energy efforts.—ROY A. YOUNG. *Chancellor, University of Nebraska-Lincoln, Lincoln 68588*