

# Cheap energy viewed as dead item

"No matter what new discoveries of crude oil may be made offshore or in the Arctic, no matter what new energy system technology may present us in the next 50 years, it is not likely that ever again will energy be available as cheaply as it has been in the past hundred years."

These were the facts of the energy crisis as laid out by Dr. Earl Cook, dean of the College of Geosciences. "Technological man has expanded his numbers enormously and raised his material standard of

living strikingly, on the basis of an energy supply whose sources are finite and are being depleted more rapidly each day," he began.

"We are facing and experiencing a decline in the natural energy we have been enjoying during several generations of explosive economic and population growth," Cook explained. "It seems unlikely that this natural subsidy ever again will increase, more likely that it will continue to decrease. The costs of such decline are a decrease in the energy

surplus available for reinvestment, public welfare, private enjoyment and mechanized agriculture and possible decreases in the economic strength and political security of our nation and losses of individual freedom. The cost most obvious to the average person is inflation.

"For the next 50 years energy will cost more, and there will be greater competition for it," Cook predicted. "Conservation will become first a goal and then a habit with its former big spenders. Political control of

energy resources will be the major factor in international relations.

"Almost 20 per cent of the total U. S. energy consumption goes to feed automobiles," he noted. "If at one fell swoop, all U. S. automobiles became half as heavy and four times as efficient — and this is technically possible — they'd take about three per cent of the national energy supply. An Arab oil embargo couldn't hurt us, our urban air would be cleaner, there wouldn't be such a rush to tap Alaskan oil, and oil com-

pany ads wouldn't feature conservation."

Cook added that the U. S. energy system wastes about 65 per cent of the gross energy input to the system. "Some of this waste is unavoidable," he said, "for thermodynamic reasons. Much however, can be avoided.

"Like each of us, who begins to die the day we are born, a non-renewable resource such as petroleum began to be exhausted when we started to consume it."

## New arc drilling sparked by Aggie

COLLEGE STATION—A revolution in drilling techniques, developed by a Texas Aggie, is being refined at Texas A&M University.

Dr. Melvin Friedman announced that the Center for Tectonophysics is starting a two-year project to study "spark drilling" headed by Dr. John Handin and himself.

"An Aggie, M. M. Newsom of Sandia Laboratories, New Mexico, perfected a way of drilling rock with

an electric arc that is called spark drilling," Friedman explained. "The industry has been constantly looking for new ways of drilling rock faster, deeper and cheaper.

"The search is on not only for the petroleum industry but also for geothermal projects to develop natural heat and energy sources," he continued.

"In this new method, a spark is ignited at the bottom of a drill hole in a fluid medium," Friedman pointed out. "This creates a pressure wave which, in turn, fractures the rock in the bottom of the hole. Chips produced by the fracturing are brought to the surface by the fluids circulating in the hole.

"Maximum drilling rates will be produced by coupling the energy to the rock to develop chips in the most efficient way," he noted.

"Now where A&M comes in is two fold," Friedman observed. "We need to find out the mechanical properties of the rock at high temperature, high pressure and fast strain rate. Next, we have to know how this tool actually fractures the rock to make chips. We'll do this by studying the bottom of the drill hole microscopically.

"If our research is successful, the work at Texas A&M may enable the spark drillers to adjust the spark rate and intensity for a given rock type at a given depth in the earth's crust to produce the most efficient drilling," he said.

## Tollison to head economics

Dr. Robert D. Tollison on Sept. 1 will become professor and head of the Economics Department.

Tollison will succeed Dr. John W. Allen, who announced his resignation last spring to return to fulltime teaching and research.

The new department head is a member of the TAMU economics faculty.

"Dr. Tollison is an outstanding young economist whom we are pleased to have accept the position of department head," stated Dr. Maxwell, dean of the College of Liberal Arts.

Tollison joined the TAMU faculty last year as an associate professor. He was a senior staff economist on the Council of Economic Advisers, during 1972-73.

Dr. Tollison currently serves as consultant, to the Office of the Secretary, U. S. Treasury, and Office of Technology Assessment of the U. S. Congress.

He instructed economics and public finance in Cornell University's Graduate School of Business and Public Administration before coming to TAMU.

His specialties include public finance and industrial organization. A Phi Beta Kappa, he graduated magna cum laude from Wofford College, Spartanburg, S. C., in 1964. Tollison's master's and Ph.D. degrees are from Alabama and Virginia, where the latter was awarded in 1969.

## Bowling league set for faculty

Texas A&M University faculty-staff are shaping a bowling league for the 1974-75 school year.

Pins start tumbling on Sept. 9. The faculty-staff league will bowl two 15-week halves during the season, on Monday evenings at the Triangle Bowl. No matches are scheduled on holidays.

An organizational meeting is planned for Sept. 2. Individuals and prospective teams interested in joining the league should attend the 5:15 p.m. meeting in Room 102, Data Processing Center. Team captains are asked to attend, or send a representative. The league is organized in teams of four bowlers.

Information is available from Hank Lyle (845-4211) or Dave Moehring (845-2523).

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