

# Report out on energy policy

Actions proposed for electric utilities in President Carter's National Energy Plan (NEP) must be carefully considered before put into effect, a team of Texas A&M engineers recommend.

The plan includes a segment on electric utilities that contains some good ideas, but others that fly in the face of proven experience, they say. Findings are in a monograph, "Analysis of the National Energy

Plan: The Effects on Electric Utilities," published in a series by the Center for Energy and Mineral Resources at Texas A&M.

Governor Briscoe asked the state's major universities to analyze the NEP as a basis for state response. Earlier Texas A&M studies dealt with the plan's effects on oil and natural gas pricing, Texas agriculture and transportation. Another is planned on financial aspects.

Texas A&M engineers criticized the NEP for failing to treat electric utilities problems from "a coherent, systems point of view."

Many of the energy proposals would have both positive and negative effects on electric utilities and their customers," the group report assessed. "Only if the positive effects outweigh the negative should the proposed action be taken."

"In some cases, the effects are not yet clearly understood and additional study is needed. In such cases, hasty legislative and administrative requirements to implement those proposals seem unwise," the report adds.

"The people who put the plan together have a limited concept of the electric utility business as a system," Dr. Alton D. Patton, one of the six experts on the team, said.

"They don't appreciate the fact that solving one problem can worsen another, just as pushing in on a balloon at one point causes it to bulge in another," he said.

Among other actions, the NEP called for increased power pooling and utility interconnection, utility rate structure reform, use of thermal power plants' rejected heat for cogeneration and heating, and development of advanced energy sources and energy storage technologies. Patton said that aspects of the plan "have been perturbed almost daily. It's not now the same document that we first addressed."

Pooling of power systems has some undeniable advantages. However, increases in transmission costs, control complexity and system susceptibility to cascading failures may work against more and more interconnection of power systems into pools, the 59-page report says.

"Incremental benefits of pooling decrease as the pool size increases, while disadvantages continue to increase," it adds. "Thus there is an optimum pool size, beyond which the disadvantages outweigh the benefits."

"Benefits of interconnection must be evaluated in each case, and cannot be legislated," Patton warned. "The government plan, in effect, says they can."

Rate reforms to assure that utility rates reflect costs and encourage conservation, have some undetermined and undesirable effects. The report suggests that "no class of utility customer should subsidize another, but each should pay a fair rate that reflects the total cost" of service.

Cogeneration and district heating from thermal plants presupposes that rejected heat is of high quality to be usable without further treatment and that a demand for the steam exists.

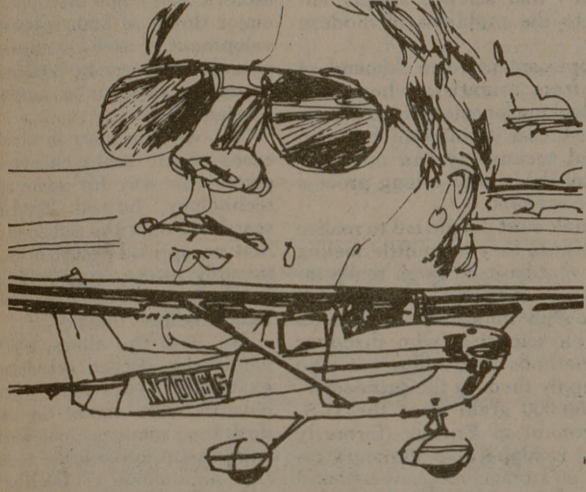
"Even if demand exists, capital expense is still there, and we must also pay something in efficiency of the turbine," Patton said.

The economics of cogeneration are more favorable today, he added. But specific instances may not be economically sound, if, for example, it becomes necessary to crank down a larger, more efficient power plant to keep a small, fuel oil-burning plant operating at full capacity to maintain district heating or cogeneration.

The report cites efforts toward developing alternate energy sources and reflects optimism on possibilities. It points out, however, that capital costs problems exist also with solar, wind and geothermal sources.

The group producing the assessment also includes C.W. Brice, A.K. Ayoub, R.D. Chenoweth, J.S. Denison and B.D. Russell. They are in the Electrical Engineering Department and Electric Power Institute at Texas A&M.

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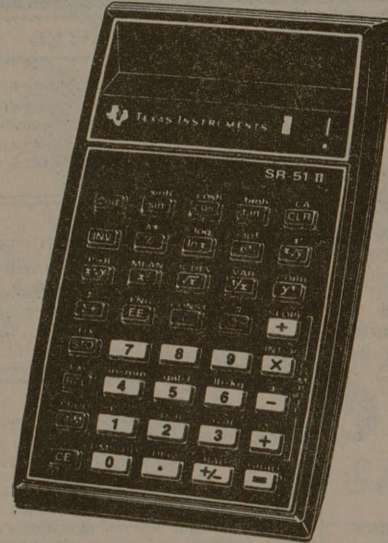
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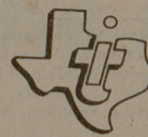
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