shuttle, so we began to look closely at reutilization of Skylab." Lundquist agreed: "It was the summer of 1977 before any vigorous review of Skylab's situation took place."

This left the agency in no small fix, because at the time Skylab was engineered and built, NASA failed to assure that after a passage of 5 to 10 years, the satellite would be able to correct its orbital decline or pitch by itself. According to several NASA officials, the agency left the satellite in 1974 with a definite intention to return to it in the shuttle, but without any specific idea about what Skylab would be used for after the shuttle got there. As a result, NASA made no attempt in the design process to assure that in 10 years' time, Skylab would still be operable. William Schneider, a deputy associate administrator at NASA who

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Doctors' Fees—Free from the Law of Supply and Demand

When the professionals in any field can set their fees virtually without regard to the law of supply and demand, they have a nice thing going, at least for themselves and their bank accounts. According to *A Study of Physicians' Fees* made public on 22 March by the Council on Wage and Price Stability (CWPS), this is very much the kind of situation physicians now enjoy and have been enjoying for some years.

The author of the study, Zachary Y. Dyckman, a CWPS staffer, even puts forward the plausible hypothesis that in some circumstances fees have actually gone up in some areas in part *because* the number of physicians per capita has increased. With fewer patients to go around, many physicians are believed to set a "target" income and raise their fees sufficiently to attain it.

The CWPS report says that, last year alone, physicians' fees rose 9.3 percent, or 50 percent more than other consumer prices. "The 1977 increase followed a pattern that spans nearly three decades," it says. "In fact, ever since 1950, physicians' fees have consistently outpaced overall inflation except during the 1971–1974 period of wage and price controls." Indeed, the study indicates that over the entire 1950–1976 period, physicians' fees have increased 75 percent faster per year than prices for other goods and services.

Consumer outlays for physicians' services have increased from $2.7 billion in 1950 to about $35 billion in fiscal 1978, with 60 percent of the increase attributable to higher fees and the rest to population growth and an increase in the type and frequency of services. In 1939, physicians' earnings were less than twice as high as those of a broad category of other technical and professional people, but in 1975 their earnings were four times as high.

In 1976, the median income of self-employed physicians was $63,000. Hospital-based pathologists and radiologists whose incomes are based on a percentage of their departments' revenues in 1975 earned $138,000 and $122,000, respectively, and are said to represent the highest paid medical specialties.

According to the CWPS study, the principal cause of the rapid rise in physicians' fees has changed "dramatically" since the mid-1960's. During the 1950's and early 1960's, the rise in fees "could be traced in large part to anti-competitive practices of organized medicine," as for instance through efforts to restrict the growth of medical schools and the supply of doctors (there were fewer physicians per capita in 1960 than in 1950).

"At the same time, state and local medical societies put additional upward pressure on doctor bills by discouraging both price competition among physicians and the establishment of prepaid medical group practice, the forerunner of the health maintenance organization," the study observes.

Since 1965, it says, anticompetitive practices "have ceased to be an important source of physicians fee inflation," although those "past practices" partly account for the high fees today. (As a matter of fact, regulatory authorities are still uncovering and rooting out significant vestiges of anticompetitive behavior. On 20 March, the Federal Trade Commission announced that it had just entered into a "consent agreement" prohibiting the California Medical Association from influencing fees through preparing and circulating among its 25,000 members studies as to the "relative value" of various treatments and surgical procedures and suggesting how, by applying appropriate "conversion factors," fee schedules can be arrived at. The FTC approved a similar consent order last fall with the Minnesota State Medical Association.)

From the mid-1960's to the present, the inflation in physicians' fees is ascribed chiefly to the growth in private and public health insurance coverage and changes in methods of insurance payment. With about 60 percent of the cost of all physicians' services covered by insurance, and with the physicians being allowed essentially to determine the price of those services, physicians' fees have been largely "exempted . . . from the usually restraining effects of market forces that exist for most other consumer products and services."

The CWPS study describes and analyzes the problem of fee inflation without offering any nostrums for correcting it. The Public Citizens' Health Research Group has suggested, as a long-term approach, abandoning the fee-for-service system and going to the kind of fixed-fee service provided under health maintenance plans. Although the AMA has not, at this writing, issued a detailed critique of the CWPS study, it has said that some of the study's major findings and conclusions are not supported by the body of the report and that it will speak to these alleged deficiencies later.

Another Ford Energy Study: A Hard Look at Coal

Twice already, the Ford Foundation has created something of a stir by issuing reports on energy policy, and it is now announcing a third energy study—this one comparing coal with other energy options available to the United States over the next two decades.

The study will be conducted under a $600,000 grant to be administered by Resources for the Future (RFF), a nonprofit research organization in Washington, D.C. Hans H. Landsberg, codirector of RFF's Center of Energy Research, will direct the study.

Members of the 20-member study group will include an unusually diverse mix of personalities for a foundation-sponsored undertaking. Among the scientists and other scholars in the group are Kenneth J. Arrow, a Harvard economist and Nobel laureate; Francis M. Bator, a professor at Harvard's Kennedy School of Government; George W. Rathjens, a professor of government at the Massa-

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was the program director for Skylab in 1973, said, "When Skylab was designed, we told the contractors to be certain only that the parts would be operable for 9 months, the length of the period for the manned missions. We didn't design it any better because we couldn't identify a task for it that was sufficient to convince the Administration or Congress to spend extra money and keep it active over a long period of time." Scientists at NASA's Marshall center wanted to continue communicating with Skylab "but we just didn't have the money," Schneider said. Instead, the satellite was shut off, and a small parcel of film, food, cloth, paper, and electrical wire was left on board to determine the effects of long-term weightlessness, the only continuing Skylab "experiment." At the time, there apparently was a feeling that NASA

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chusetts Institute of Technology; and Theodore B. Taylor of Princeton, a former nuclear weapons designer who more recently has been trying to work out practical visions for a solar world.

From industry there are individuals such as physicist Richard L. Garwin of IBM and S. William Gouse, chief scientist of the Mitre Corporation and former head of the old Office of Coal Research at the Department of the Interior. Other members of the group include an international civil servant, Edward R. Fried, an official of the World Bank, and two formerly high-level officials in the U.S. government, namely John C. Sawhill, one time administrator of the Federal Energy Administration, and Robert W. Fri, formerly deputy administrator and acting head of the Energy Research and Development Administration. None of the mainline environmental advocacy organizations are represented on the study group, but Grant Thompson, deputy director of the Washington-based Environmental Law Institute, is a member.

Among the questions to be considered in the study are:

- To what extent will greater coal consumption increase the risk of harm to human health and the environment?
- What are the technological, environmental, and institutional constraints affecting plans for increased coal production and coal conversion?
- What are the costs and benefits of increased energy conservation, particularly with respect to its effect on economic growth and welfare?
- To what extent can other energy options, including the nuclear and solar options, be expected to meet the nation's energy needs by the end of the century?

The first Ford Foundation energy study was the controversial one directed by S. David Freeman and issued in 1974. It was ahead of its time in its heavy emphasis on the need for conservation. The second Ford Foundation energy report was *Nuclear Power Issues and Choices*, published last spring. This report was notable chiefly for its recommendation for a deferral of nuclear fuel reprocessing and of development of the breeder reactor.

An Alaska Lands Bill to Please Environmentalists

The environmental legislation that holds top priority this year with the Carter Administration, and with the national environmental groups themselves, is the Alaska lands bill. So far, prospects for passage of a strong measure that would give protected status to vast new areas are still looking up, as was demonstrated on 21 March when the House Committee on Interior and Insular Affairs reported legislation which the environmentalists' Alaska Coalition regards as a "good bill."

Enactment of legislation in 1978 to complete the "four systems"—that is, the systems of national parks, wildlife refuges, national forests, and wild and scenic rivers—would represent a final major step toward dividing up Alaska. The Statehood Act of 1959, which allowed the new state to select 103 million acres (or about a third of Alaska), and the Alaska Native Claims Act of 1971, which allowed the natives to select 44 million acres, represented earlier steps toward deciding what is to become of the United States' last great undeveloped frontier region.

There is little doubt that a bill will be passed, because final selection and patenting of most of the state's and some of the natives' land cannot proceed until Congress acts to complete the four systems. The real question has been how Congress will deal with potential resource conflicts, as in defining the boundaries and the degree of protection for new park and refuge areas that may contain significant mineral deposits or oil and gas reserves (*Science*, 4 November 1977).

The Interior Committee bill, reported out on a 32 to 13 vote, would place another 95 million acres in the four systems. Counting the some 48 million acres already so classified, there would be a total of about 143 million acres in these systems altogether. Of this total, about 73 million acres would be designated as wilderness, from which all development would be excluded except where valid mining claims or oil and gas development rights have been established already. A proposal by Representative Lloyd Meeds (D–Wash.) to cut the wilderness acreage by 40 million acres had the support of mining industry and oil and gas lobbyists and failed by only four votes.

The environmental lobbyists did not prevail on all of the issues put to a vote. For instance, a major disappointment for them was the denial of wilderness classification for the spectacular Misty Fjords area—where the U.S. Borax Corporation has made a major molybdenum discovery—in the Tongass National Forest in southeast Alaska. With respect to the Arctic National Wildlife Range on the North Slope, which some petroleum geologists regard as favorable to the discovery of another "Prudhoe Bay," the environmentalists experienced some losses as well as gains. The range would be closed to commercial oil and gas exploration and development, but a significant part of it would be opened to a government-run program of exploration.

Sponsors of the bill, such as Representative Morris Udall (D–Ariz.), the Interior committee's chairman, say that access to about 70 percent of all of the land in Alaska that has mineral potential would not be affected by the legislation.

The Alaska lands bill now goes to the House Merchant Marine and Fisheries Committee, which has jurisdiction over wildlife refuges. If, as expected, the bill is sent to the floor with the strong support of this committee as well as the Interior committee, its chances for House passage in pretty much its present form are likely to be excellent. Its fate in the Senate, where it will go to the Committee on Energy and Natural Resources, headed by Senator Henry M. Jackson (D–Wash.), is an open question. Jackson represents a complex blend of conservationist and development tendencies, and nobody knows how he will finally come out on the Alaska lands issue. But the environmental lobbyists have shown that they can generate significant grass roots support on this issue, and this should count in the Senate as it has in the House.

Luther J. Carter