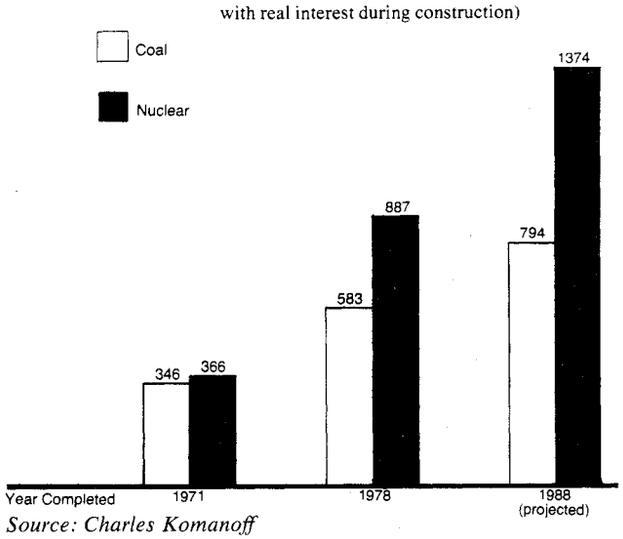
Study Says Coal Cheaper than Nuclear

The 1970's were disastrous for the nuclear power industry in the United States. Capital costs soared, orders for new power plants plummeted, and public enthusiasm for the technology waned. Industry executives are hoping, however, that the election of the pro-nuclear Reagan Administration will improve their fortunes. But if a study published last week is any guide, the 1980's could be even worse.

The study, conducted by Charles Komanoff, an independent energy consultant who has long been an irritant to the nuclear industry, predicts that the costs of building nuclear power plants will continue to escalate rapidly in the next few years. As a result, by the late 1980's, electricity from new nuclear plants will be at least 25 percent more expensive than electricity from new coal plants, Komanoff claims.*

Power Plant Capital Costs
(in 1979 steam-plant $/kW, with real interest during construction)



Source: Charles Komanoff

Although nuclear plants are cheaper to operate than coal plants, capital costs are crucial to the economic survival of the nuclear power industry. Electric utilities are encountering difficulties in raising money for new construction projects and they are already tending to favor coal because of its lower capital costs. If Komanoff's findings are correct, orders for new nuclear plants are unlikely to pick up.

Not surprisingly, the nuclear industry is unhappy about Komanoff's conclusions. The Atomic Industrial Forum (AIF), an industry trade group, calls the study "highly dubious" and says that it is "ironic that anybody would want to advocate concentrating on coal in the midst of yet another protracted strike" in the coalfields. Nevertheless, AIF has set up a committee to look into Komanoff's findings.

The industry is wary of Komanoff because it has been stung by him before. Five years ago, Komanoff touched off a heated debate when he predicted that large nuclear plants would operate at an average of only about 55 percent of their rated capacity. The industry was then anticipating an operating factor of 70 to 80 percent. Komanoff has been proved correct: the factor has ranged from 50 to 62 percent in the past 5 years.

The new study claims that, even after allowing for inflation, the capital costs of nuclear plants rose by 142 percent between 1971 and 1978, while the cost of building coal plants rose by 66 percent in the same period. As a result, Komanoff reckons that an average nuclear plant now costs at least 50 percent more to build than an equivalent coal plant equipped with the latest pollution control technology.

Nuclear industry executives accept the fact that there is a capital cost differential between nuclear and coal-fired plants—although they believe it is lower than Komanoff's figure—but they argue that nuclear-generated electricity is still a bargain because coal plants are more expensive to operate. Moreover, the conventional wisdom is that nuclear power will continue to hold its own as environmental concerns drive up the cost of building and operating coal plants.

Komanoff disagrees. He argues that the capital costs of both nuclear and coal plants will rise sharply in the 1980's, but that the difference between the two will widen. He predicts that, even if coal plants employ "gold-plated" pollution controls, by 1988 nuclear plants will be 75 percent more costly to build than equivalent coal-fired power stations.

Komanoff maintains that the gap in capital costs is growing so wide that nuclear power has already lost its overall economic edge. By the late 1980's, he claims, the cost of building and operating nuclear plants will so greatly exceed that for coal plants that many reactors now in the early stages of construction could economically be scrapped and replaced with coal units.

The chief reason for the increased capital cost that Komanoff foresees is government regulation to overcome safety problems. Design changes that have already been imposed in response to recently identified problems will push up the costs of nuclear plants now under construction, and many unresolved safety issues—including those associated with the Three Mile Island accident—will add an extra burden in the next few years.

In essence, Komanoff argues that the capital costs of both coal and nuclear power are rising sharply because of efforts to prevent total accident and environmental risks from rising in proportion to the growth of either sector. Since nuclear power has been expanding faster than coal-fired electricity generation, its capital costs have also been expanding at a faster rate.

In an introduction to the study, Irvin Bupp, a nuclear energy analyst from Harvard Business School, states that "this book brings us several strides closer to the actual reality of nuclear and coal economics," and he says he is impressed by how far Komanoff "has been able to move beyond the lavishly funded efforts of large institutions like the National Academy of Sciences in data collection and analysis."—COLIN NORMAN

*The study, entitled *Power Plant Cost Escalation*, is available from Komanoff Energy Associates, 333 West End Avenue, New York 10023, for $295 per copy. A summary is available for $50.

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