Energy

A slow drip at the synfuel spigot

Congress created the U.S. Synthetic Fuels Corp. (SFC) in 1980 to assist the private sector in financing pioneer synthetic fuel plants. These plants are designed to convert coal, oil shale or tar sands into more usable energy forms like gasoline (SN: 7/5/80, p. 5; 2/20/82, p. 123). More than two years later, Edward E. Noble, SFC chairman, signed the first "letter of intent" promising aid to a project. The First Colony project in North Carolina will receive up to $465 million in the form of loan guarantees and price supports. The project sponsor, Peat Methanol Associates, plans to produce 4,600 barrels per day of methanol fuel from peat stripped from coastal swamplands.

Shortly, Noble plans to issue letters of intent for two more projects: the Santa Rosa oil sands project in New Mexico ($41 million) and the Calsyn heavy-oil conversion project in California ($50.5 million). That still leaves the SFC with about $14 billion in uncommitted assets.

The SFC's slow pace reflects the synfuel industry's slow development. Many companies, like Exxon Corp., have withdrawn from risky synfuel projects, affected by the economy's low growth rate, stabilized oil prices, high interest rates and U.S. tax law changes. Two major projects, winners in the initial competition for SFC funds, were canceled after major sponsors withdrew. Ashland Oil Inc. scrapped its multibillion-dollar project to produce synthetic oil from coal at a plant in Breckinridge County, Ky. The Hampshire coal liquefaction project in Wyoming was postponed indefinitely after the withdrawal of Standard Oil of Ohio.

The SFC has looked for ways to increase private investment in synthetic fuel projects. In October at an SFC board meeting, Noble said, "The corporation welcomes investments by any business or government, domestic or foreign, where the investment will contribute to the development of a domestic synfuels industry." Later, Noble traveled to Japan and West Germany to discuss possible foreign involvement in synfuel projects.

Interested in getting a better response from private industry, the SFC recently announced a new approach to soliciting requests for aid. In its "targeted solicitation," an SFC spokesman says, "We're telling anybody who has an oil shale proposal exactly what it'll take to get funding from us." The SFC hopes that companies, with a greater assurance of success, will be less hesitant to go to the expense of putting together suitable proposals. The current solicitation advertises for projects capable of producing by 1990 at least 10,000 barrels per day of oil from shale from the Green River geologic formation in Utah. The SFC is prepared to spend up to $1.6 billion per project, with price guarantees as high as $67 per barrel, double today's price for oil.

EPA's standards for radwaste disposal

Although the Department of Energy is responsible for selecting sites and constructing repositories for high-level nuclear waste, two other federal agencies have important roles in the process. The Environmental Protection Agency establishes the overall environmental standards that any repository must meet, and the Nuclear Regulatory Commission specifies the licensing process and the technical requirements for a repository. Last month, after years of effort, the EPA announced its proposed standards for strictly controlling radiation from high-level radioactive waste for at least 10,000 years.

The requirements specify that radiation from a future storage site should not pose a greater public-health risk than radiation naturally emitted from uranium ore under the earth's surface. They call for "well-designed, multiple-barrier disposal systems which would not rely upon perpetual maintenance and which would be located so that it would be unlikely that they would be disturbed by natural forces or human activities." The EPA will hold public hearings on these proposed standards in May.

Science & Society

Academic pressure, Soviet style

Soviet officials withheld the awarding of postgraduate degrees in science from 216 students during the first six months of 1982 as part of a drive to upgrade productivity and technology transfer within the Russian research community. Under the standards of prior years, these students would have been awarded degrees, according to Soviet officials. An account of the action, which appeared in the Dec. 15 CHRONICLE OF HIGHER EDUCATION, was confirmed last week by officials at the Soviet embassy in Washington.

According to Victor P. Gonchar, an embassy official specializing in science-and-technology issues, the 216 affected students represent only a few percent — "perhaps less" — of those who had applied to the Soviet Higher Certification Commission (SHCC) for degrees as "candidates in science" (roughly the Western equivalent of master's degrees) and "doctors of science" (prestigious awards to outstanding contributors in science and technology). Furthermore, Gonchar explains, the degree applicants were not "rejected completely," but were instead instructed to revise, augment or investigate potential applications of their dissertation work so that it would reflect or benefit national industrial and agricultural needs. In cases where it was felt students had performed their work using antiquated research tools — for instance, performed complicated mathematical calculations without use of a computer — the students were asked to go back and apply state-of-the-art techniques. Gonchar said in a year's time the affected researchers should be able to make revised applications for the same degrees.

The new drive to revamp the efficiency of Soviet research labors was spearheaded by Anatoly P. Alexandrov, president of the Soviet Academy of Sciences, during a 1981 speech. Alexandrov said the Soviet research process has to be improved, and the time shortened between invention of new techniques and their introduction in industry. "So this is not some kind of totally new policy," but merely the intensification of one begun well over a year ago, according to Sergey G. Skachko, a Soviet Embassy official involved with cultural and educational affairs.

The thrust to make Soviet research more practical, as outlined recently by SHCC Chairman Kirylov Ugrumov in Pravda, will probably have no direct impact on degree applicants involved in fundamental, or basic, research, Gonchar says; that directive is aimed primarily at engineering students. However, Skachko and Gonchar noted that Ugrumov's recent recommendation that graduate students demonstrate mastery of computer science as an advanced-degree requirement might well be put into effect for all science and engineering applicants.

These actions, designed to pressure students into more pragmatic pursuits, Skachko says, represent and reflect the fundamental difference between the Soviet and Western sociopolitical systems. American engineers, lured by the potential personal gain of commercializing their developments, have a natural incentive to transfer new ideas out of the lab and into industry. Their salaried socialist colleagues, Skachko notes, have had a far less potent inducement for worrying about whether their inventions see widespread adoption.

Reagan appoints MX-deployment panel

President Reagan has appointed Brent Scowcroft, a former national-security adviser to President Gerald Ford, to head an advisory panel charged with investigating by Feb. 18 how best to modernize the nation's strategic defense. The move was prompted by a refusal of the lame-duck Congress to fund full-scale development of the MX-missile. Although the 11-man commission, which includes former defense secretary Harold Brown, has been given a broad charter, it's generally accepted that the panel's primary mission will be to seek out an MX-basing concept that Reagan can defend before Congress.