

hiding behind such terms as "appropriate," "soft" or "intermediate" technology, there are many wishful thinkers today who would have a world where the developing countries

while the industrial world contents itself with zero growth and consumes the fruit of past achievements. Let me repeat that there should be no mistake: small non-conventional energy sources may provide the best way of meeting the energy needs of small, rural communities, but they cannot turn the wheels of industry of any country nor can they help it to attain eventually a self sustaining economic base, nor can the industrialized world ever maintain its standard of living without expanding its energy consumption.

The main sources of technical assistance in the nuclear-energy field are the Agency's various programmes. As the report before this Assembly shows, they have been growing steadily, although not nearly as fast as many of the developing countries, and I myself, would wish. As I have said, the Agency's budget received unanimous support in September of this year, but there were many developing countries that expressed regret that the growth in our safeguards activity was not matched by an increase in the programmes designed to promote the use of nuclear power, especially in the technical assistance programme. . . .

Oil-producing nations join the nuclear club

An Arab journalist recently stated that the Organization of Petroleum Exporting Countries (OPEC) sees as a solution to the dollar crisis the United States adopting a global program for fusion and fission research and development. He indicated that the majority of the leaders within the oil cartel see that such a resolution to the "energy crisis" led by the United States would trigger new confidence within the international community in the U.S. economy and Washington's commitment to economic growth.

Such a sentiment reflects the growing support for nuclear energy by the oil producing nations as the most viable alternative to petroleum. Despite the much publicized myths of the "greedy sheikhs" who are making millions by subjecting the world to their "overpriced" oil, the oil producing states are in fact increasingly advocating the development of nuclear energy in order to conserve their precious oil reserves to feed future refining and petrochemical industries.

Nuclear energy is being adopted not only as a future power generating source but as the basis for desalination projects and for medical purposes. The size of nuclear programs varies between the OPEC nations, depending upon their respective stages of development, population size and long-term development plans.

But there is one invariant which characterizes all of the nuclear plans within OPEC. In no case have U.S. companies been given contracts. As a result of the Carter Administration's policies on non-proliferation and in particular Energy Secretary Schlesinger's negative position towards nuclear energy, Japan, France, West Germany and the Soviets have received every major contract.

In brief, here is what the nuclear programs of five major OPEC nations, and the outlooks of various OPEC national leaders, look like on the issues of both fission and fusion.

Iran: With one of the most advanced nuclear pro-

grams in the underdeveloped sector, Iran currently has four fission reactors under construction, two from the French firm Framatome, and two from West Germany's Kraftwerke Union. In total, Iran projects that an additional 12 to 16 reactors will be constructed before the turn of the century, eight of which are to be supplied from the U.S. — most likely by the Westinghouse Corporation. However, the recent crisis in Iran has upset these plans, and the purchase of eight additional reactors from France and Germany has been postponed for at least a year.

The Shah of Iran has been one of the most vocal proponents of nuclear energy internationally. Last year his government sponsored a forum attended by 41 nations, to which the Shah sent a message of greeting naming fusion energy as the new energy source for the world in the 21st century.

The Iranian Atomic Energy Organization (IAEO) has also begun research and development into nuclear energy — most importantly laser technology. Earlier this year the semi-official Iranian daily, *Kayhan*, published enthusiastic praise of fusion power and announced that the IAEO has embarked on a program of laser fusion research.

Not only is nuclear energy envisioned as a source of power for Iran, but the Shah himself foresees the day when nuclear plants will power desalination projects along the Caspian Sea as a means of irrigation. During a September visit to Iran, Japanese Prime Minister Takeo Fukuda promised assistance to Iran with its nuclear program. *Kayhan* later reported that the Japanese firm Mitsubishi was planning to send a delegation to Iran to propose the sale of reactors to Iran.

Saudi Arabia: Only over the last two years have the Saudis begun to investigate the applicability of nuclear energy to their economic development. In December, 1977 Saudi Arabian Oil Minister Zaki Yamani signed an agreement with the French for

nuclear research assistance and joint exploration of uranium in Saudi Arabia. Just last month, the Saudis signed a similar agreement with West Germany. Both agreements portend the future supply of research reactors to Saudi Arabia.

Unlike Iran, the Saudis do not foresee the use of nuclear fission as a means of generating power, but rather are looking to nuclear energy as a source of massive desalination projects. As well, the Saudis are planning to employ nuclear energy for medical purposes.

Saudi Prince Mohammed ben Faisal, as a representative of his government, this summer broke the silence from Riyadh on the issue of fusion power. Speaking on New York City television, Faisal warned against scare stories from environmentalists against fusion, which he termed the "energy source of the future."

Iraq: Iraq, like its neighbor Saudi Arabia, is just beginning its nuclear program. Framatome will provide the Iraqis with one 600 megawatt power gener-

ating reactor. France will also provide highly enriched uranium to feed the reactor. As well, Framatome will sell Iraq a smaller research reactor, in a deal which has yet to be finalized. It is estimated that the power generating station will be operational by the mid 1980s.

Libya: Like Iraq, Libya has kept its nuclear program quiet. A \$300 million agreement was signed two months ago between Tripoli and Moscow for a large fission plant for power generation. Libya has also aggressively promoted an educational drive to train nuclear physicists both in the U.S. and in Europe.

The United Arab Emirates (UAE): In tandem with the creation of a board of prominent UAE political and business figures to centralize industrial development, the UAE this summer finalized an agreement with France to establish cooperation on nuclear fission. This was the first foreign agreement aimed at establishing a nuclear program within the UAE.

U.S. oilmen seek expanded nuclear energy role

The annual meeting of the American Petroleum Institute in Chicago opened Nov. 13 with a panel discussion which centered on the need for more energy production — particularly nuclear energy production. Although the API is frequently derided as "oilmen talking to oilmen," this year's meeting appears characterized by a desire on the part of the petroleum giants to broaden their political and industrial-economic base. In fact, one of the conference co-chairmen referred in his opening remarks to a "dialogue" that has been occurring among various U.S. forces favoring expanded energy production, and stated that "one of the highlights of the dialogue has been in the NAACP energy program."

Featured on the opening panel were Robert Georgine, head of the AFL-CIO's Building Trades department, Allen Grant of the American Farm Bureau, Thomas Ayres of Illinois' Commonwealth Edison, and scientist Jerome Weisner of the Massachusetts Institute of Technology.

The participants were united in either explicitly or implicitly criticizing the no-growth emphasis in the Carter Administration energy program designed by Energy Secretary James Schlesinger. Declared the AFB's Grant: "In effect we have no national energy policy, despite the fact that the President signed what he calls an 'energy bill.' The reason we don't have an energy bill and the reason Congress could not agree is that the original proposal was nonsense. Many

people," he continued, in an apparent reference to some oil interests, "thought it was necessary to compromise to get any bill out. The Farm Bureau is straightforward — when we're right we're right, and we don't compromise with someone who's wrong.

"We still need an energy policy," Grant continued. "Nuclear power is its substance. Fusion is a promising source down the road, but atomic power, which we have on line now, is the cleanest, safest, most inexhaustible source we have. We need more nuclear plants; we need the breeder reactor, at the core of a national energy policy."

Adopting a conciliatory tone, the AFL-CIO's Georgine declared that "I could speak for two hours or two years on our disagreements — but I came here to speak on our common areas of agreement and to enlarge to new areas where we can agree." Several times repeating that his views do not represent the entire organized labor movement, the building trades leader told the oilmen's gathering: "We share a common goal: the current and future growth of the economy of this nation, the continued growth of the energy industry, including the oil industry. Our real strength is in our unity. Members of the Building Trades Commission are also part of the petroleum industry. The thing that unites us all is the understanding that the only real alternative is nuclear power. . . . Refusal to unite would ensure our defeat by the philosophy of no-growth."