

the nation's energy needs in 2000 with renewable resources. This goal was backed up by a sharp increase in government spending on solar energy programs.

The Reagan Administration has taken a different tack. It has argued that conservation and the use of renewable resources will be spurred by rising oil

use of energy. According to the energy plan, higher oil prices alone will restrain growth in energy consumption to between 1 and 1.5 percent a year.

One prominent casualty of the change in direction is the Solar Energy Research Institute (SERI), which had become the spearhead of the Carter Administration's

ment of Energy is "systematically setting out to destroy the solar option."

The energy plan's projections for all renewable energy resources, including hydroelectricity and geothermal power, indicate that their contribution will climb from about 6.4 percent of total consumption now to about 9.7 percent by 2000. Asked whether this means that the Reagan Administration has formally abandoned the 20 percent goal, Hunter Chiles merely pointed out that it has taken three decades for nuclear power to meet just over 3 percent of the nation's energy needs, and that it would be unrealistic to expect renewable energy resources to reach 20 percent in less than two decades.

The Reagan Administration's plan thus represents a clear break with the policies that have guided both Republican and Democratic administrations since the early 1970's. It has essentially abandoned the whole idea of setting goals for energy supply and demand.

—COLIN NORMAN

The Administration has clearly abandoned the goal of producing 20 percent of the nation's energy needs with renewables within two decades.

prices and that the federal government should step aside and allow market forces to operate. Consequently, the Administration has proposed a cut of more than two-thirds in federal spending on conservation and renewables and has targeted for extinction a slew of regulation designed to encourage more efficient

efforts to boost the contribution of renewable energy resources. Its budget will be slashed from about \$120 million this year to \$50 million next year, and more than 300 researchers will lose their jobs at SERI before October. Its director, Denis Hayes, was fired in June, whereupon he charged that the Depart-

Reagan Outlines Nonproliferation Policy

New "framework" counts on cooperation, promotes nuclear trade, puts less emphasis on U.S. control of nuclear fuel, technology

In his first full-scale statement on nuclear nonproliferation policy President Reagan on 16 July indicated that his Administration will rely more on broad political and diplomatic initiatives to prevent the spread of nuclear weapons than did the Carter Administration and less on efforts at direct control of nuclear fuel and technology.

As expected, the President signaled a relaxation of U.S. opposition to reprocessing of nuclear fuel and development of breeder reactors by other countries "where it does not constitute a proliferation risk." The statement also specifically encourages commercial nuclear exports from the United States.

In a key expression of Administration attitude on nonproliferation policy Reagan said, "In the final analysis, the success of our efforts depends on our ability to improve regional and global stability and reduce those motivations that can drive countries toward nuclear explosives." A strong advocate of this view has been Arms Control and Disarmament Agency director Eugene V. Ros-

tow, who has insisted that arms control efforts must be accompanied by greater attention to problems of world order. In respect to the proliferation of nuclear weapons Rostow says, "There is no point for exporting countries to expect (nonweapons) countries which see themselves under grave threat to resist the temptation to go nuclear."

Other Administration officials have suggested that the United States will be more willing in the future to provide conventional weapons or offer the protection of the U.S. nuclear umbrella to reduce other nations' feelings of need to develop nuclear weapons capacities.

As an example of the kind of political initiative that might be taken, Rostow said the Administration is examining the possibility of a Middle Eastern nuclear-free zone similar to one in Latin America created by the Treaty of Tlatelolco. Rostow said that such a proposal would not prosper in the present atmosphere in the Middle East, but that the White House wants the idea to be explored.

The presidential statement affirmed

the prevention of the spread of nuclear weapons to additional countries as "a fundamental national security and foreign policy objective." It also went down the line in pledging adherence to the nuclear nonproliferation treaty and to the system of safeguards administered by the International Atomic Energy Authority (IAEA) in Vienna. The adequacy of IAEA inspection of nuclear facilities was called into question after the Israeli bombing attack on the Iraqi reactor site on 7 June. The Reagan statement said the Administration would work to improve the international system.

In a prompt reaction, a Senate resolution in favor of drastically strengthening the international nonproliferation regime was passed 89-0 the day after the President's statement was released. Aimed at tightening restrictions on "dangerous nuclear trade," the resolution calls for a temporary world moratorium on transfers of uranium enrichment and reprocessing equipment and proposes several improvements in IAEA safeguards, including their extension to all nuclear

materials, equipment, and facilities whether or not they have been formally declared to the IAEA. Senator John Glenn (D-Ohio) took the lead in the effort to move the resolution speedily to a vote. The intention in both the Senate and the House, which passed a more generally phrased resolution on the subject, was to put the President on notice of congressional concern about nonproliferation strategy, a likely topic at the Ottawa summit conference.

By and large, the President's statement, offered as a "policy framework," is couched in very general language, but it was evident that if the new Administration shares the overall nonproliferation objectives of the Carter Administration, it intends to use significantly different means in trying to attain them.

Under Carter, U.S. nonproliferation policy focused on the fuel cycle for nuclear power reactors. A major aim was to deter other countries from reprocessing spent nuclear fuel and developing breeder reactors on the grounds that such activities make weapons grade nuclear material, particularly plutonium, more readily available (*Science*, 25 August 1978, p. 692).

In a clear departure from Carter policy, Reagan said, "The Administration will not inhibit or set back civil reprocessing and breeder reactor development abroad in nations with advanced nuclear power programs where it does not constitute a proliferation risk." Behind the change in policy is the Administration view that many "friends and allies" interested in nuclear power have in recent years "lost confidence in the ability of our nation to recognize their needs."

"We must reestablish this nation as a predictable and reliable partner for peaceful nuclear cooperation under adequate safeguards. This is essential to our nonproliferation goals. If we are not such a partner, other countries will tend to go their own ways and our influence will diminish. This would reduce our effectiveness in gaining the support we need to deal with proliferation problems."

To attain this objective, Reagan said he is

- Instructing the Executive Branch agencies to undertake immediate efforts to ensure expeditious action on export requests under agreements for peaceful nuclear cooperation where the necessary statutory requirements are met.

- Requesting that the Nuclear Regulatory Commission act expeditiously on these matters.

The provisions to encourage U.S. nuclear exports drew the harshest criticism directed at the policy pronouncement.

Representative Edward J. Markey (D-Mass.), chairman of the House Interior subcommittee, which has jurisdiction over the Nuclear Regulatory Commission issued a statement calling the Reagan nonproliferation policy "dangerous and contradictory. It signals a return to the nuclear boosterism of the 'Atoms for Peace' era when America vigorously promoted and financed the spread of nuclear technology to dozens of countries throughout the world." Markey charged that "it is the aggressive nuclear commerce policy that got us into this precarious global situation in the first place."

Federation of American Scientists director Jeremy J. Stone, noting that the Reagan statement is for the most part unspecific, said he views it as a "rhetorical cover for the desire to sell reactors abroad. It reads like a congressional resolution. The string of 'whereases' deal with nuclear nonproliferation, but the only substantial thing, the resolving clause, is about selling reactors."

The Administration statement appeared designed to overcome an impression that Reagan did not assign great importance to nonproliferation policy that was created by his comments during the campaign and by a rather murky answer on the subject at his 16 June press conference.

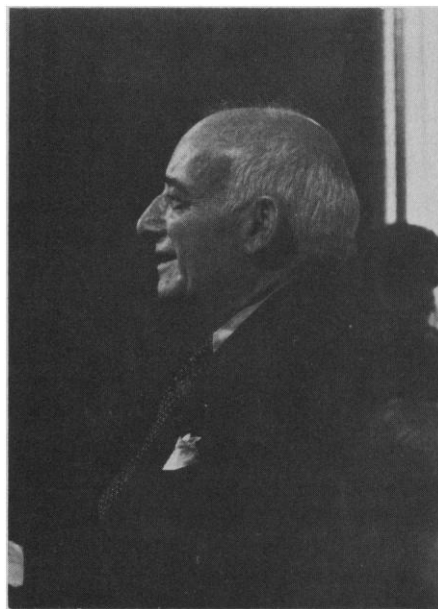
A main theme of other Administration spokesmen has been that previous policies have been too narrowly based and that, henceforth, much more emphasis will be placed on international cooperation, particularly with other nuclear supplier nations in pursuing nonproliferation goals.

Rostow says that the Administration "recognizes that nonproliferation as a problem cannot be solved by nonproliferation measures as we've conceived them in the past. We should not be under the illusion that the American government, with a wave of the hand, can prevent other governments from going nuclear." Immediate efforts will be made to improve IAEA and tighten up bilateral arrangements. Rostow says it would be unfortunate if "after the shock of what happened in Iraq," the reaction was to "pass a resolution and consider the problem solved." He says the incident made "the dangers of proliferation more visible."

Among the many questions left unanswered by the Reagan statement is whether the United States will issue "generic" permits to allow nations like Japan and Switzerland to transfer spent fuel of U.S. origin for processing rather than adhere to the present case-by-case

procedures that have angered such countries.

Another matter left to speculation is on future U.S. attitudes toward the so-called plutonium recycle, that is, the use of plutonium from reprocessed fuel to be used in light water reactors. Also uncertain is whether the Administration will seek changes in the federal Nuclear Nonproliferation Act of 1978 to transfer responsibility for export control from the NRC to the Executive. Such a move has been anticipated since a Reagan transition team report called for centralization



ACDA director Rostow

Less unilateralism.

of export authority in the Executive and the principal author of the report, James Malone, became assistant secretary of state for oceans and international environmental and scientific affairs. Exercise of authority over nuclear exports by a regulatory agency rather than the Executive has vexed friendly countries with nuclear programs and the U.S. nuclear industry. Malone said in remarks at an arms control symposium at the Lawrence Livermore weapons laboratory in late May that such a shift in authority would soon be proposed legislatively, but the most recent word is that the matter is still under consideration.

Also unclear is how the Administration will deal with countries such as India and Pakistan under existing U.S. laws that, for example, require this country to deny aid to nations that develop nuclear weapons. Answers to such questions will begin to be available as the Administration announces its version of domestic nuclear policy and deals with specific international nuclear issues.

—JOHN WALSH