

U.S. Will Rely on Controls On Military Nuclear Uses

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WASHINGTON, June 14.—Officials said today that in extending nuclear assistance to Egypt the United States would rely on international controls as well as special American safeguards to insure that none of the nuclear materials are diverted into the production of atomic bombs.

Despite the immediate anxiety expressed in some Congressional quarters, officials of the State Department and the Atomic Energy Commission expressed confidence that cooperation with Egypt in the peaceful development of atomic power would not lead to Egyptian possession of nuclear weapons.

Their confidence rested largely upon the effectiveness of an elaborate system of safeguards and inspections, developed first by the United States and more recently by the International Atomic Energy Agency, to prevent the diversion of fissionable materials into the manufacture of weapons.

The communique issued in Cairo today by President Nixon and President Anwar el-Sadat of Egypt made clear that the provision by the United States of nuclear reactors and the uranium to fuel them was contingent upon the working out of a safeguards agreement between the two nations.

The Min Burden

The expectation was that the main burden of carrying out the safeguards would fall upon the International Atomic Energy Agency, the semiautonomous United Nations agency that has assumed in recent years the primary responsibility of monitoring the peaceful development of atomic energy. But State Department officials said the United States would also insist on special bilateral controls designed to give added assurance against diversion of any fissionable materials into military uses.

For example, according to information supplied to the Joint Congressional Committee on Atomic Energy, the United States will have a veto power over how Egypt processes, stores and refabricated the plutonium produced in the reactors. Egypt has given commitments to establish special protective measures against theft or sabotage of fissionable materials.

On the basis of an Atomic Energy Commission briefing, Representative Melvin Price of Illinois, a senior Democrat on the Congressional committee, also reported that Egypt had given a commitment that none of the fissionable materials would be used for peaceful nuclear explosions. Egypt has thus foresworn following the route of India, which earlier this year used Plutonium obtained through Canadian assistance to explode what it said was a peaceful device.

In extending aid to Egypt, the United States is following a pattern of international cooperation in atomic development dating back to the Atoms for Peace program proclaimed by President Eisenhower in 1961.

The United States now has cooperative atomic agreements with some 35 countries, including Israel. In some cases, the assistance is limited to research, but with 25 countries the United States has cooperative agreements on the development of atomic power, such as it is now proposing to extend to Egypt and Israel.

Under an Atoms for Peace agreement, the United States in 1961 provided Israel with a small five-megawatt research reactor. Controls over the use of the reactor were exercised first by the United States, and then the responsibility was transferred to the International Atomic Energy Agency.

Similarly, the Soviet Union, which has had a far less exten-

sive program of international cooperation than the United States, provided Egypt with a small two-megawatt research reactor in 1960. So far as is known, neither Soviet nor international controls were exercised over the reactor, but United States officials said the reactor has operated so infrequently that it could not have produced significant amount of plutonium for possible use in a bomb.

The general appraisal of American officials is that Israel is far ahead of Egypt both in nuclear technology and in the supply of fissionable materials that could be used to fabricate weapons. Under conditions of strict secrecy, Israel in the late nineteen-fifties obtained from France a reactor of a type particularly suited for producing plutonium. This reactor is not subject to any known international safeguards and is believed capable of producing enough plutonium for a few atomic weapons a year.

Now, almost in parallel, Israel and Egypt want to take the relatively big technological step of building large reactors capable of producing substantial amounts of electricity. In taking that step, they are turning to the United States for the reactor plants and the enriched uranium to fuel them.

State Department officials said the initial plan was to provide Egypt with a relatively large reactor capable of generating 600 megawatts of electricity. A similar offer is expected to be extended to Israel when President Nixon visits that country Sunday and Monday.

As the Nixon-Sadat communique pointed out, nuclear energy is "A double-edged sword—offering opportunities for peaceful applications, but raising the risk of nuclear destruction."

Technology Widely Known

The basic technology involved in designing and operating an atomic power plant is much the same as that required for fabricating an atomic bomb. The once secret technology of atomic bombs, however, is now widely known, so any nation with trained scientists and engineers should be able to fabricate at least a rudimentary weapon.

The key is in obtaining the fissionable material—either highly enriched uranium or plutonium—for making bombs. It is at this point that international controls enter the picture to prevent peaceful uses from being diverted to military purposes.

Atomic reactors generally use uranium fuel with relatively low enrichment of uranium-235, the fissionable isotope used in bombs. The uranium fuel to be supplied Egypt, for example, will have less than 10 per cent of uranium-235. Weapon require uranium enriched to 90 per cent and more with uranium-235.

The possibility of diversion arises as the fuel is burned. Some of the uranium is transformed in the nuclear chain reaction into plutonium.

Safeguard systems, therefore, concentrate on controlling the plutonium, both in the reactor and in the chemical separation plants required to isolate the plutonium from the uranium fuel.

The safeguards take the form of physical controls, on-site inspection and accounting procedures. In some cases, seals are placed on a reactor to provide assurance that it has not been opened and the plutonium removed. Through periodic inspections and accounting procedures, it is possible to determine how long a reactor has operated and how much plutonium it has produced. Then, when a reactor is refueled, it is possible to check on the amount of plutonium and whether any was diverted.