PHYSICS

U.S., USSR Cooperate

Skilled scientists of the United States and Russia will soon be experimenting side-by-side on projects related to the peaceful uses of atomic energy—By Watson Davis

➤ SOVIET and American scientists will soon be working side-by-side in projects related to the peaceful uses of atomic energy as the result of the visit of a U.S. Atomic Energy Commission ten-man delegation to Russia just concluded.

Within a year, two or three experts from each country skilled in research on harnessing the hydrogen bomb fusion reaction to peaceful power will be doing experiments together either in the U.S. or the USSR. Similar exchanges will take place in nuclear power reactor techniques and in high energy particles. Details will be arranged when a party of Soviet atomic specialists make a return visit to this country, probably in the fall.

Dr. Glenn T. Seaborg, U.S. Atomic Energy Commission chairman who headed the U.S. party, found that Russian hosts, led by Chairman A. Petrosyants of the State Committee on the Utilization of Atomic Energy, were willing to show atomic installations relating to the peaceful uses of atomic energy. The Americans saw many plants never before shown to Westerners.

For a period of about five years beginning in 1966, it was learned, Russia will have the highest energy particle accelerator in the world. It will be a 70 billion-electron-volt machine, one mile in circumference, located at Serpukhov about 65 miles south of Moscow. It is a stepped-up version of the giant accelerator at Berkeley, Calif. The U.S. has plans for more powerful accelerators.

Russia has an institute at Yefremov that plans and builds all its accelerators whereas the American method is to design where the machine will operate. There are more different kinds of accelerators in America than in Russia, although the oldest operating cyclotron is in Russia where it was built in 1935 not long after its invention in the United States by the late E. O. Lawrence.

The Russian research on controlled fusion, the hope of a new kind of atomic power "burning" light elements, is no farther advanced than in America, so far as the Americans could judge.

Less emphasis is being placed in Russia upon atomic reactors for power production largely because Siberia has large amounts of low-cost energy from coal and waterpower. Russia has no big reactors producing power whereas three big ones are on line in this country.

• Science News Letter, 83:373 June 15, 1963

Soviet Photo

AMERICANS AT KURCHATOV—Members of the U.S. Atomic Energy Commission delegation visiting Kurchatov Atomic Energy Institute, Moscow, view a controlled thermonuclear fusion apparatus. Left to right: rear, Dr. Glenn T. Seaborg, AEC chairman; Albert Ghiorso, Lawrence Radiation Laboratory; Cecil St. C. King, AEC staff; Dr. Gerald F. Tape, AEC Commissioner designate; Dr. Arnold R. Fritsch, AEC staff. Front, Dr. Manson Benedict, chairman, AEC general advisory committee; Dr. Alexander Zucker, Oak Ridge National Laboratory (directly behind Benedict); Academician Lev Andreyevich Artsimovich, directing controlled thermonuclear fusion research; Chairman A. Petrosyants, Soviet State Committee on Utilization of Atomic Energy.

RADIOLOGY

High 1963 Fallout No Cause for Concern

➤ PEOPLE who worried last year over the probable increase in leukemia and bone cancer from fallout due to nuclear testing by the U.S. and the USSR can take a free breath, at least till the next tests.

The May 1963 report of the Federal Radiation Council shows that the number of cases, because overestimated last year, is well below the "accepted" level.

The report tends to be consoling on most points but does not say exactly why. The term "danger" is never used, so ordinary people have no way of knowing when they or their children are safe, especially since the Council has not yet set up any guidelines on fallout.

Although "absolute fallout levels" in 1963 will probably be substantially increased over 1962 if rainfall is normal, the report states that "in relative terms" they will still be far short of figures that would cause concern or justify countermeasures.

The health risks from radioactivity in foods, for example, are too small to justify altering the normal distribution and use of food, particularly milk and dairy products. In other words, the strontium-90 does not need to be removed.

The substantial increase in absolute amount of fallout is due primarily to Soviet nuclear tests, the report states. Since the Soviet Union ended the three-year moratorium by resuming nuclear tests in 1961, Soviet testing has produced 85 megatons of fission yield, and U.S. testing 16 megatons.

• Science News Letter, 83:373 June 15, 1963

GENERAL SCIENCE

Russian Scientist Says Man Too Energetic

➤ IF MAN'S ENERGY needs keep increasing at the present rate, in 2,500 years all the energy from the sun reaching earth will supply only a millionth of his requirements, Russian scientist I. Shklovskiy reported in Pravda.

At present, he estimated, the sun sends to earth 100,000 times the amount of energy man requires, but man's needs are climbing at the rate of one-third of a percent yearly.

Even if man is able to harness nuclear fusion, he said, there will not be enough deuterium or even regular hydrogen around to serve as fuel for man's staggering wants and extraterrestrial energy resources of the solar system may have to be exploited.

• Science News Letter, 83:373 June 15, 1963