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ATOMIC POWER AND WORLD ECONOMY

PRIME MINISTER NEHRU has recently pointed out that underdeveloped countries like China and India cannot attain a high standard of living on the basis of coal and oil alone, and the only solution to this difficulty is provided by atomic energy. Even in highly industrialized Switzerland, the water power that has served so well and so cheaply is nearing the limit of its development and future power will be costly if it is based on imported coal transported over long distances. The only alternative is atomic power.

Thus, there are indications that a new era of power is beginning in almost every country in the world. In this connection, it is gratifying that the United Nations has unanimously adopted a proposal for establishing a new international agency for international co-operation in developing the peaceful uses of atomic energy. When organized it will probably be a Specialized Agency of the United Nations similar to the World Health Organization (WHO), the Food and Agricultural Organization (FAO), and the UNESCO. The United States has kindly agreed to make available to

the proposed U.N. agency 220 lb. of fissionable material, i.e., nuclear fuels, which could suffice for 15 research reactors, while 44 additional pounds would be made available by the United Kingdom. These would form an initial capital of energy-packed atoms for the operation of the future U.N. atomic energy agency.

Much interest centres round the forthcoming conference on August 8, 1955, when scientific delegates from some 80 countries will meet to study the technical and scientific factors involved and to explore the means required to develop atomic power on an international scale. Dr. H. J. Bhabha of India will be the President of the Conference, and Dr. Walter J. Whitman of the United States has been appointed Secretary-General.

A new world-picture is expected to emerge from that meeting. Authoritative surveys will be made of the world's power requirements between the years 1975 and 2000, including the needs and resources of specific regions and countries that are not yet industrialized, of others that are in transition from agricultural to industrial economy, and of countries that

are already industrial. Other sessions will discuss the availability of the raw materials for atomic fuels, the economics of nuclear power, the safety and health factors involved in atomic installations, the production and use of isotopes in industry, medicine and agriculture, and the legal problems involved. There will also be more technical sessions on the design and operation of nuclear reactors of various types, and on the fundamental facts and principles of chemistry, physics and biology upon which future developments must depend (including medical research on protection against radiation damage). A final session will discuss measures for the assistance of individual countries in the use of atomic energy, and the technical education of the experts who will be needed. The result will be a worldwide design for the peaceful uses of atomic energy and atomic materials.

But the promise of atomic power is so great that many countries are not waiting for United Nations action, but have already begun active developments. The Soviet Union has announced that the world's first electric power station to make practical use of atomic energy was put into operation on June 27, 1954. It generates 5,000 kilowatts of power for the use of neighbouring industries and agriculture, and larger stations, with a capacity of 50,000 to 100,000 kilowatts are under construction. In Great Britain, a 50,000 kilowatt atomic power station was begun in May 1953, at Calder Hall in Cumberland, and is expected to be in operation early in 1956. In the United States, where coal, oil and natural gas are both plentiful and cheap, it is not expected that electricity from atomic energy can be economical in competition with present power sources, but a 60,000 kilowatt plant is nevertheless being built near Pittsburgh at a cost of \$30,000,000 in the hope that actual experience in its operation will

result in a speedy reduction of future costs. Reports on these existing plants will undoubtedly be made at the Geneva Conference.

Yet very few nations have had actual experience in the full-scale operation of atomic reactors or of atomic power plants. The most immediate need is for information and training to spread the technology required on a wide scale. In order to construct reactors and carry on useful creative research in this field, not only is it necessary to have technical information on the subject—much of it already available—but one must also have scientists, engineers and technicians trained, at least to some degree, in the use and interpretation of these extremely complicated research tools.

This need has already been recognized in the United States, where a School of Nuclear Science and Engineering was opened at the Argonne National Laboratory near Chicago on March last. Thirty-one advanced students from 19 nations, and nine from the U.S. itself, have been admitted to this establishment. They have now begun a seven month study course in the design, construction and operation of reactors for nuclear research; in the principles of design of nuclear power reactors; in the handling of irradiated materials; and in other peaceful applications of nuclear energy. A series of additional courses will also be organized during the coming 12 to 15 months to bring essential basic knowledge and training to a total of 250 specialists from foreign nations. These additional courses are to be in industrial hygiene, in atomic biology and medicine, and in the techniques of using radioactive tracers. The U.S. proposals thus anticipate the future establishment of a United Nations atomic energy agency, and go beyond the direct generation of atomic power to the scientific and medical activities that must accompany it.

LADY TATA MEMORIAL TRUST SCHOLARSHIPS AND GRANTS FOR 1955-56

THE Trustees of the Lady Tata Memorial Trust announce on the death anniversary of Lady Meherbai Dorabji Tata, 18th June 1955, the awards of Scholarships and Grants for the year 1955-56.

The international awards of varying amounts (totalling £ 6,675) for research in diseases of the blood with special reference to Leucaemias are made to Doctors J. F. Kieler, J. Ringsted, J. Rygaard, N. A. Stenderup, F. Kissmeyer-Nielsen (all of Denmark), J. Nordmann and M. Seligmann (France), Professor H. Teir and Dr. C. G. V. Wasastjerna (Finland), Mr. S.

Joseph and Dr. Alice Stewart (England) and Dr. A. Sreenivasan (Bombay).

Indian scholarships of Rs. 250 per month each for one year for scientific investigations having a bearing on the alleviation of human suffering from disease are awarded to Mr. N. A. Nityananda Rao (Bangalore), M. T. K. Sundaram (Madras), Doctors Prem Nath Satsangi and Satish Chandra (Lucknow), Dr. Mahendra Kumar Trambaklal Mehta (Patna) and Dr. Gangadhar Vyankatesh Bhide and Mr. U. W. Kenkare (Bombay).