



CANADA

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## CANADA-INDIA ATOMIC REACTOR

Frank Harris, Trade Commissioner, Bombay, gives a progress report in the July 19 issue of Foreign Trade on one of the chief projects in which Canada and India are co-operating under the Colombo Plan, the Canada-India Atomic Reactor. This reactor, known commonly as C.I.R., is being built at the Government of India's atomic energy establishment at Trombay, a few miles north of teeming Bombay on the shores of the Arabian Sea.

The design of the 'pile' or the reactor proper is based on Atomic Energy of Canada Ltd.'s NRX Reactor at Chalk River. The rest of the project, however - including the buildings, enclosures, cooling system, air conditioning and auxiliaries - has been developed to suit the special requirements of the site and to permit the entire plant to be erected and maintained by the type of skilled labour available in India.

The reactor will provide facilities for fundamental research in physical, chemical, biological and metallurgical problems related to atomic energy. It will produce radioactive isotopes for use in medical therapy, agriculture and industry, and for tracer studies in chemical, biological and medical research. Above all, the reactor is suited to making engineering studies and doing research on reactor materials which can only be tested under conditions of high neutron intensity. Its research and development facilities will make possible advanced engineering experiments

concerned with the design of future power reactors.

### HOUSING THE REACTOR

The Chalk River reactor is packaged inside a conventional building. C.I.R. will be housed in an hermetically sealed steel shell or rotunda, cylindrical in shape and with a hemispherical dome 135 feet high and 125 feet in diameter. Construction of the shell was completed recently when the last plate was welded into position. All the steel used in it, approximately 1,400 tons, was imported from Canada. It took 20 months to build.

The rotunda stands on a reinforced concrete substructure consisting of a basement and a sub-basement. Around the base of the rotunda there is a ring-shaped single-story building that will contain all the auxiliaries and services not actually required in the rotunda building for reactor operation. Excavation for the rotunda started in January 1956 and for the ringlike building in November 1956. During the major phase of excavation of the rotunda and the pouring of the concrete for the sub-basement foundation slab, more than 1,200 men and women were working round the clock, 400 per shift. Most of this work was done by hand. To date some 15,000 cubic yards of rock and earth have been excavated and approximately 10,000 cubic yards of concrete poured. Some 980 tons of locally supplied reinforcing steel were used to reinforce the concrete.