

CENTRAL INTELLIGENCE AGENCY  
WASHINGTON, D.C. 205055a

SC No. 11794/65

18 OCT 1965

MEMORANDUM FOR: Mr. Charles E. Johnson  
Staff Member  
National Security Council  
Room 368  
Executive Office Bldg.  
Washington, D. C.

SUBJECT: The Indian Nuclear Weapons Capability

1. This is in response to your verbal request for information on the current status of India's nuclear energy program. I would like to call to your attention that a Special National Intelligence Estimate -- SNIE 31.1-65: India's Nuclear Weapons Policy -- is under preparation and is expected to be published shortly. The following paragraphs summarize the status of each major facility in the program.

Decision Whether or Not to Develop Nuclear Weapons

2. India probably already has on hand enough plutonium for a nuclear device. We have no information on India's capabilities in non-nuclear component technology, but they are now apparently increasing their military research and development efforts. We have no firm indication that the Indian Government has decided to develop nuclear weapons, but it is estimated that India could test its first nuclear device about a year or so after such a decision is made. They could probably produce a weapon deliverable by the Canberra light bomber about two years after a first test. With an early decision to proceed with a weapons program, they could produce about a dozen weapons in the 20 KT range by 1970. India signed

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the 1963 partial test ban treaty, but has areas where underground testing could be conducted.

#### Canadian-Indian Research Reactor

3. The principal facility of the Indian nuclear energy program is the Atomic Energy Establishment at Trombay, near Bombay, which is the site of three research reactors, a uranium metal plant, fuel fabrication facilities, plutonium separation plant, and the usual research, administration, and support facilities. Of the three research reactors, only the 40 megawatt Canada-India Reactor (CIR) can produce a significant amount of plutonium -- about 12 kilograms per year.

The agreement between Canada and India for the construction of the CIR stated that the reactor would be used for peaceful purposes. However, only the uranium supplied by Canada for half of the first fuel load had stringent safeguard controls to ensure peaceful use. The Canadian uranium was replaced with Indian fuel at an early date, and there are no safeguards on either the uranium or heavy water now used in this reactor.

#### Chemical Reprocessing Plant

4. A plutonium separation plant at Trombay began initial test runs in March 1964, and by October 1964 the first run using irradiated fuel from the CIR had been completed. The Indians have announced that the plant has a "nominal" capacity to process 30 tons of irradiated fuel per year, but we believe it could process several times this amount. In any event, the capacity is considerably greater than is needed to process the fuel from the CIR. The plant to make plutonium metal is scheduled for completion in 1966; in the meantime this task probably has been performed by a pilot facility.

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5. Although the CIR has been operated in a manner which favors the output of plutonium suitable for weapons, this plutonium is also useful for other purposes. The Indians maintain that their entire nuclear program is directed toward peaceful uses, and the plutonium is to be used for reactor fuel and for research on fast breeder reactors. An extensive program for plutonium chemistry and metallurgical research is being established ostensibly in support of these uses. Nevertheless, the facilities and the manner of operating them make it possible for India to move promptly into a weapons program.

Uranium, Thorium, and Heavy Water Production

6. India has more than adequate fuel supplies for the production of plutonium. India has processed its monazite deposits to extract uranium and thorium for a number of years and has purchased uranium concentrate from several countries without stringent safeguards. In addition, the domestic production of uranium is being increased. Mining has begun in the state of Bihar and a concentration plant to process 1,000 tons of ore per day, with the production of about 200 to 300 tons of uranium annually, is expected to be in operation in 1966. India has a heavy water plant at Nangal which can produce about 15 tons per year and has been in operation since August 1962. Consideration is being given to the construction of a heavy water plant having an annual production of 200 tons of heavy water, but the site has not yet been selected and completion of the plant is not expected in less than four or five years.



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Nuclear Power Development

7. India presently plans to have three nuclear power stations in operation within the next decade. The first nuclear power station, at Tarapur about 60 miles north of Bombay, is now under construction and is expected to be in operation by 1968 with an installed electric power capacity of 380 MW(electric). The Tarapur station will consist of two U.S.-supplied boiling water reactors using slightly enriched uranium provided by the United States. The first unit of the second nuclear power station is being constructed at Rana Pratap Sagar, Rajasthan, with Canadian assistance. The first unit is to be a 200 MW(electric) natural-uranium-fueled, heavy-water-moderated reactor which is expected to be in operation in the period 1969-70. Both the Tarapur nuclear power station and the first reactor of the Rajasthan nuclear power station are subject to the safeguard controls required by the United States and Canada respectively.

8. Originally, the Indians planned to construct -- without foreign assistance -- the second 200 MW(electric) reactor at the Rajasthan site and the third nuclear power station at Kalpakkam, Madras. The Kalpakkam station would be identical to the two-reactor Rajasthan station and was scheduled to go into operation about 1972. Sweden has assisted India in conducting a feasibility study for the Kalpakkam station, but negotiations are being carried out with Canada for assistance in the construction of the second Rajasthan reactor and the two Kalpakkam reactors. If these reactors are constructed with Canadian assistance, it is expected they will have safeguard controls. Should



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they be built without foreign assistance requiring safeguard controls, it would take about four or five years to construct the reactors, and, therefore, they could not contribute to the production of plutonium for a weapons program before 1970.



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Director of Scientific Intelligence

