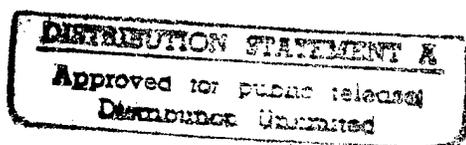


**A SELECTIVE, ANNOTATED BIBLIOGRAPHY ON CURRENT  
SOUTH ASIAN ISSUES**

*June 1987*

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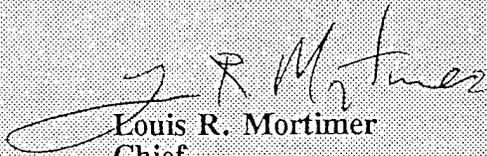
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## PREFACE

This bibliography provides selective annotations of open-source material on two current issues:

--nuclear developments in South Asia, and

--tactics and organization of the Afghan resistance

The bibliography incorporates serials and monographs received in the previous month and is part of a continuing series on the above subjects.

Entries within each topic are arranged alphabetically by author or title. Call numbers for materials available in the Library of Congress are included to facilitate recovery of works cited.

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1. NUCLEAR DEVELOPMENTS IN SOUTH ASIA

## GLOSSARY OF TERMS

- AEMC                    The Atomic Energy Minerals Center at Lahore is responsible for finding and recovering uranium ore, thereby filling a vital need stemming from boycotts of Pakistan by international nuclear fuel suppliers.
- BARC                    Bhabha Atomic Research Centre is located in north Bombay and is India's facility for research in and development of nuclear technology.
- CHASHNUPP            Pakistan's Chashma Nuclear Power Plant, a projected 900-megawatt facility in Mianwali District, Punjab, was sanctioned in 1982 in order to create electrical power through light-water technology.
- Cirus                    A Candu-type Canadian-built plant located at BARC, Cirus was commissioned in 1960. India reprocessed spent fuel from Cirus to make the plutonium for its 1974 "peaceful nuclear explosion;" Cirus has a capacity of 40 megawatts.
- Dhruva                   One of the world's few high-flux reactors, Dhruva, which went critical in August 1985, is solely the product of Indian research and production, and therefore, falls completely outside IAEA safeguards. Dhruva shares facilities with Cirus, its neighbor in the BARC, has a 100-megawatt capacity, and can produce 30 kg of plutonium annually.
- IAEA                    International Atomic Energy Agency (United Nations)
- Kalpakkam              This Tamil Nadu town is the site of the Indira Gandhi Atomic Research Center (formerly MAPP) and gives its name to a 40-megawatt fast-breeder reactor which went critical in August 1985 using plutonium-uranium carbide fuel.

KANUPP Karachi Nuclear Power Plant, a 125-megawatt reactor, was supplied by Canada on a turnkey basis and became operational in 1972.

MAPP-1 Madras Atomic Power Project's first Candu-type 235-megawatt unit was commissioned in January 1984. The center is located at Kalpakkam, Tamil Nadu, and was produced completely by Indian research and technology; consequently, its units and the plutonium they produce fall outside IAEA inspection safeguards. MAPP units are intended to provide electricity for Madras. In October 1985, MAPP was renamed the Indira Gandhi Atomic Research Center, but new names for individual plants have not been made public.

MAPP-2 The second unit at Madras Atomic Power Project is also a Candu-type 235-megawatt plutonium and heavy-water reactor. MAPP-2 went critical in August 1985 and was commissioned in October of the same year.

NPT The Nuclear Nonproliferation Treaty was ratified by the UN General Assembly in 1968. India and Pakistan contend that the NPT discriminates against nonnuclear states, but Pakistan has repeatedly offered to sign if India will do so simultaneously. In the UNGA, Islamabad voted in favor of the NPT.

PAEC Pakistan Atomic Energy Commission

PINSTECH Pakistan Institute of Nuclear Science Technology, the site of a US-supplied 5-megawatt "swimming pool"-type reactor installed in the 1960s

Tarapur The Tarapur nuclear power plant, located near Bombay, was built by the United States. It has a capacity of 600 megawatts and can annually produce 50 to 80 kg of plutonium. Tarapur and its products come under IAEA inspection safeguards.

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"AEC Reconstituted." Hindu (Madras), 9 April 1987, p. 1.

India's eight-member Atomic Energy Commission has been reorganized under its new Chairman, Dr. M.R. Srinivasan. The other new members are: Professor M.G.K. Menon, Scientific Adviser to the Prime Minister; Mr. B.G. Deshmukh, Cabinet Secretary; Mr. S. Venkitaramanan, Finance Secretary; Dr. P.K. Iyengar, Director, Bhabha Atomic Research Centre; Mr. J.R.D. Tata, Chairman, Tata Sons Ltd.; Mr. G.K. Arora, Special Secretary, Prime Minister's Office; and Professor C.N.R. Rao, Director, Indian Institute of Science.

"Atomic Energy Commission." Bangladesh Observer (Dhaka), 11 January 1987, pp. 8-9. In JPRS-TND-87-006, 20 March 1987, pp. 30-38.

This article provides a summary of the organization and activities of the Bangladesh Atomic Energy Commission (BAEC). BAEC was founded in February 1973 and is governed by a five-member advisory committee consisting of a chairman and four representatives of the physical, biological and engineering sciences. In conjunction with the recently commissioned Savar research reactor, BAEC has established the Atomic Energy Research Establishment (AERE), which operates institutes in Food and Radiation Biology, Nuclear Science and Technology, Electronics and Materials Science, Computer Science, and Nuclear Medicine.

BAEC's research and development efforts have focused on isotope applications in industry and hydrology, and include programs in food preservation, medical sterilization, heavy and nuclear minerals development, and materials research.

The Savar reactor, a 3-MW Pulsing type Triga Mark-II research reactor, was financed entirely by the Government of Bangladesh, with indigenous design and implementation representing approximately 40% of the project. The facility is expected to employ approximately 500 scientists and technicians.

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"DAE Decision To Shift Thorium Plant Flayed." Indian Express  
(Bombay), 7 April 1987, p. 2.

Maharashtra legislators express strong opposition to the DAE plan to move the Turbhe thorium plant from Bombay to the Indian Rare Earth Complex currently being constructed in Orissa. The DAE Site Selection Committee claimed that the proposed shift was for strategic and security reasons, but members of the Maharashtra House of Elders suggested that political considerations were involved.

Freeman, Harold. "The Next Nuclear Power?" Foreign Service Journal (Washington), vol. 63, no. 11, December 1986, pp. 32-35.

Freeman, a professor emeritus of statistics at the Massachusetts Institute of Technology, traces the history of the Pakistani nuclear program and argues that it has been designed from the start with the purpose of creating a nuclear-weapons capability. The author offers the following evidence:

- 1) The large-scale Chashma reprocessing plant has the capacity to produce 135 kilograms of plutonium annually, sufficient for 20 Hiroshima-type bombs (22 kilotons). Despite government claims, this facility serves no legitimate role in the nation's energy program since Pakistan has no commercial-size breeder reactors that are able to use plutonium fuel.
- 2) The Pakistani Government is currently negotiating to build a 900-MW nuclear power plant in Chashma. The proposed plant would be unsafeguarded and would be able to provide the spent uranium fuel necessary to operate the nearby reprocessing plant at full capacity.
- 3) The Kahuta nuclear facility has the capacity to produce highly enriched uranium, yet Pakistan's only nuclear power plant uses heavy water and natural uranium. By the 21st century, Kahuta will have an enrichment capacity sufficient for between three and six nuclear devices per year.

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4) The government is currently undertaking research in laser isotope separation, a simpler and cheaper path to uranium enrichment.

"Karachi Plant Production Figures." Karachi Domestic Service, 2 March 1987. In JPRS-TND-87-008, 8 April 1987, p. 38.

The Karachi Nuclear Power Plant operated at record levels in 1986, producing over 527.4 million units of electricity and running at 82.5 percent of capacity. The plant has completed 10 years of operation with a fully Pakistani technical staff.

"N-Power Stations' Performance Hailed." Times of India (Bombay), 7 April 1987, p. 5.

The Indian Department of Atomic Energy reports that the output of the nation's nuclear power plants was 97% of the target in 1986-87. One unit of the Tarapur Atomic Power Station achieved a high capacity factor of 79%, while RAPS-2 operated at 73% capacity.

"New AEC Head Could Change Direction Of Indian Nuclear Program." Nucleonics Week (New York), vol. 28, no. 7, 12 February 1987, pp. 1-2.

The selection of M. R. Srinivasan as the new chairman of the Indian Atomic Energy Commission suggests that the Indian Government plans to exploit foreign nuclear technology in its efforts to solve the nation's energy problems. Srinivasan's main competitor for the position, Dr. P.K. Iyengar, has been a strong proponent of a fully indigenous nuclear program. Srinivasan is reportedly one of the few Atomic Energy officials who advocates accepting a recent Soviet offer of a nuclear power plant.

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"Reported 2D Atomic Plant In Islamabad." Delhi Domestic Service, 16 March 1987. In JPRS-TND-87-008, 8 April 1987, p. 38.

According to reports from unspecified sources, Pakistan has two atomic plants which are able to produce weapons-grade uranium. Aside from the Kahuta enrichment plant, the government is reported to have built a second facility in Islamabad. In addition, Pakistani nuclear scientist Abdul Qader Khan allegedly told his former teacher, Belgian scientist Dr. Brabers, that Pakistan has sufficient uranium for a bomb, and could construct one in a month if necessary.

"Roopur Nuclear Power Plant Said Under Consideration." Bangladesh Observer (Dhaka), 9 February 1987, pp. 1, 10. In JPRS-NEA-87-038, 30 March 1987, p. 112.

Bangladesh Energy Minister Anwar Hossain announces that the Government is currently negotiating with potential donor countries and agencies for the construction of a 300-MW nuclear power plant in Roopur. The plant would cost an estimated US \$500-700 million and would provide electricity at a lower per-unit cost than alternative methods.

Srinivasan, N. "AEC Official Writes On Heavy Water Production." Hindu (Survey of Indian Industry) (Madras), 1986, pp. 91, 93. In JPRS-TND-87-008, 8 April 1987, pp. 25-28.

The author, chief executive of the Heavy Water Project under India's Department of Atomic Energy, provides a brief history of India's heavy water program. In addition, he refutes recent charges that the nation's nuclear program relies on secret imports of unsafeguarded heavy water. Srinivasan's narrative highlights the following developments:

1) India was among the first nations to employ the monothermal ammonia-hydrogen exchange process on a full

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industrial scale. This technology is particularly appropriate for use in India since it relies on a synthesis gas feed material that is readily available from the nation's ammonia fertilizer plants. Both the Baroda and Tuticorin heavy water plants use this method.

2) The Thal plant in Maharashtra is the first based entirely on indigenous design and engineering. It is also India's first heavy water facility that is directly linked with an ammonia plant. The Thal plant went into trial operation in October 1986 and operates at a high pressure of 250 kg/cm<sup>2</sup> and a low temperature of -27 degrees Celsius. It consists of two streams of heavy water, each with an annual capacity of 55 tons.

3) The Government has approved the construction of a facility identical to the Thal plant to be operated in conjunction with the Kribhco fertilizer plant at Hazira, Gujarat.

4) The hydrogen sulphide-water exchange process has been used with great success in the Kota plant and is being replicated in the Manuguru plant which is currently under construction in Andhra Pradesh.

5) A pilot plant in Baroda has extracted deuterium through the water-ammonia exchange process, a technology that will be adopted for future plants.

2. TACTICS AND ORGANIZATION OF THE AFGHAN RESISTANCE

## GLOSSARY OF TERMS

- Commander A resistance fighter who is recognized as a military leader in local or regional areas of conflict; some commanders are respected outside their own regions, but there is not yet a coordinated, nationwide, insurgent command in Afghanistan. The title commander is the only honorific or rank recognized by the resistance movement.
- Dushmani (singular: dushman) Soviet pejorative term for Afghan insurgents; it means "bandit" and originated during the 1930s Central Asia resistance.
- DRA The Democratic Republic of Afghanistan was established as the result of a coup led by Mohammad Nur Taraki and Hafizullah Amin in April 1978. Deteriorating internal security led to military intervention by the Soviet Union in December 1979 and Amin was killed by the invading troops. The Soviet invasion transformed armed resistance toward the modernistic but arbitrary reforms of Taraki and Amin into a war of national liberation.
- KHAD DRA intelligence service whose operations are entirely directed by its many Soviet KGB advisors. The acronym stands for Khedmat-Etala'at-e-Daulati (State Information Service). KHAD received ministerial rank in January 1986.
- Mujahideen (singular: mujahid) This Islamic term means "holy warrior," but it is most often used as a name for Afghanistan's resistance fighters, who consider their campaign a jihād (holy war) to drive unbelievers from their country.
- Spetznaz Soviet special warfare troops under the GRU (Military Intelligence Directorate) of the Soviet Ministry of Defense. These highly mobile units are deployed throughout Afghanistan for operations which require more skill or loyalty than is commonly displayed by Soviet or DRA troops.

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"Afghanistan: Escalating Border Conflicts." Soviet Analyst  
(London), Vol. 16, No. 10, 20 May 1987, pp. 1-3.

This editorial argues that increased Soviet media coverage of the Afghan war in recent months suggests that the Soviet public is being prepared for an escalation in the fighting. Extensive attention to alleged border violations--accusations of Pakistani jets shooting down Afghan civilian aircraft and reports of mujahideen attacks north of the Amu Darya river--indicate Gorbachev's unwillingness to abandon the Kabul regime. The Soviet media implies that a premature troop withdrawal from Afghanistan would not only be regarded as a defeat but would constitute a threat to the internal security of the Soviet Union.

Hamlyn, Michael. "Land Reform Fails: Kabul Reverses Policies Which Caused Civil War." London Times (London), 27 May 1987, p. 12.

The DRA regime is aware that its radical land reform policy had, in the past, alienated the vast majority of peasants. In an effort to gain wider support, Dr. Saleh Zeary, present Secretary of the ruling party and former Minister of Agriculture and Land Reform, has announced legislation which will raise the level of private land ownership from 15 to 50 acres. Inheritance according to Islamic law will also be reintroduced.

"Karmal Tried to Flee to Pak., Jailed." Hindu (Madras), 2 May 1987, p. 6.

This article recounts a report published in the Bonn newspaper, Die Welt which states that former DRA leader Babrak Karmal tried to flee to Pakistan with the help of the mujahideen but was captured and jailed by DRA security forces. DRA Foreign Ministry officials have denied the report, suggesting instead, that Karmal has been sent to the Soviet Union for medical care.

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Lee, Gary. "Top Afghan Asks Contact With King." Washington Post, 15 June 1987, p. A22.

In a move to implement his "national reconciliation" policy, DRA leader Najibullah, is exploring the possibility of enticing the former king, Zahir Shah, to participate in a multi-party government. Najibullah has declared, however, that all political parties in a new government would have to favor stronger ties with the Soviet Union. Zahir, who resides in Italy, has expressed his willingness to participate in such an arrangement providing both sides in the conflict agree. In an interview with the Italian Communist Party newspaper, Soviet leader Gorbachev indicated his support for Zahir Shah's inclusion in the DRA's proposal of a coalition government.

Peju, Marcel. "Sortir du Guepier Sans Perdre la Face." Jeune Afrique (Paris), Vol. 1378, p. 39.

The author suggests that while Soviet leader Gorbachev is working energetically to achieve an accord with the United States over the Euromissiles, he is indecisive over Moscow's other pressing foreign policy issue--the Afghan war. The missile issue might be resolved quickly but the Afghan one will not. Militarily and diplomatically, the Afghan war is stalemated. The author also dismisses the UN-sponsored negotiations as an artifice. The Soviets, he says, are well aware that a troop withdrawal any time in the near future would mean the destruction of the Kabul regime. Continuance of the talks, however, at least buys the Soviets time and spares Gorbachev the hard choice of a decision over whether to pull out of the Afghan "trap."

"Tiwari to Lead Team to Kabul for Talks." Hindu (Madras), 2 May 1987, p. 6.

Indian External Affairs Minister, N.D. Tiwari, is scheduled to talk with DRA Foreign Minister, Abdul Wakil, at the 8th session of the Indo-Afghan Joint Commission to

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be held in Kabul between 3 and 5 May. India provides assistance in public health, industrial development, education, and technology to Afghanistan. Tiwari is expected to announce the opening of a 100-bed annex to Kabul's Indira Gandhi Memorial Hospital.

Walker, Martin. "KGB Chief Visits Afghan Border After Rebel Attacks." Guardian (Manchester), 1 May 1987, p. 10.

KGB head Viktor Chebrikov completed a 5-day inspection of Soviet military and border guard units in late April. The visit was prompted by at least 2 cross-border raids launched by the mujahideen in the past several months. In military terms, the raids made a minimal impact, but Moscow is worried that the resistance may have embarked upon a new strategy of terrorism and may now have the sophistication in organization and weaponry to strike deep inside Soviet territory. As a result of the Chebrikov trip, security checks on trains and roads near the border have been stepped up.