

From New Delhi by Paul Zykofsky

India's electricity bind

Industry as well as agriculture has been hit by power shortages. The crisis could boost the nuclear program.

Facing an acute power shortage that has shut down almost 25 percent of industry in certain states, India's Energy Minister P. Shivshankar announced on Dec. 19 that the central government will soon set up a National Energy Commission to gear up India's energy production to meet the nation's increasing power demand by 1990.

A few days before the announcement, the Secretary of the Department of Power, T. R. Satish Chandran had signed a protocol with the Soviet Deputy Power Minister N. A. Lopatin in New Delhi to "further develop" their "mutual cooperation in the field of power."

The agreement covers construction of power projects, creation of a unified power grid in India, and formation of a centralized service for repair and maintenance of power equipment of Soviet design. Further areas of Soviet cooperation in hydropower development and long-distance transmission of power were also identified.

The present power crisis was caused by this year's weak monsoon. Along with coal-based thermal plants, India's power supply still depends heavily on hydro-electric generation, so the country was doubly affected by the erratic monsoon: Due to inadequate rainfall, demand for electrical power for pumping underground water to meet agricultural demand rose sharply. And hydro-electric power plants were able to generate only 85 percent of their rated capacity at any given time.

Although power shortages can now be felt all across India, the states which are most affected by the latest cutbacks are Tamil Nadu, Karnataka, Kerala, and Haryana. On Dec. 10, the Tamil Nadu government announced a 60 percent power cut. For the first time this year, domestic consumers, commercial establishments, and essential services using high-voltage electricity were subjected to such power cuts. Power curbs, of varying degrees will continue in Tamil Nadu until June.

A similar emergency prevails in Karnataka, a state with a large, modern industrial base, where the State Electricity Board has estimated a 10 percent shortage in generating capacity following the imposition of a 33 percent cut in power distribution to high-voltage industrial users since last October. In the neighboring state, Kerala, which boasts surplus power-generation capacity, massive power cuts have caused countless layoffs and disruption of industrial production in refineries, chemical plants, and textile mills.

Over the last decade, India's inadequate energy situation has been the chief hindrance to sustainable economic growth. This concern was reflected in the final document of the Sixth Five-Year Plan. With two years of the plan period still left, it is likely that the proposed increase in power generating capacity during the period will remain largely unattained. Central Electricity Authority Chairman S. N. Roy told a group of power engineers Dec. 10 that against a target of

19,000 MW generating capacity during the Sixth Plan, only 16,000 MW will be reached. Moreover, actual industrial and agricultural demand significantly outstrips even the unattainable target.

Thus the latest power crisis may provide the much-needed impetus to India's nuclear-based power generation program. Director of Power Projects in the Department of Atomic Energy (DAE) S. L. Katti, writing in *Nuclear India*, said that "with the availability of significant quantities of uranium resources, India today is in a position to take up a larger thermal reactor program than what was initially envisaged." With an established capability to build 235 MW heavy water reactors through indigenous resources, India is now planning to bring on line 500 MW reactor units by the end of this decade. DAE's Chief Executive for Heavy Water Projects T. Srinivasan announced in December that the Indian program envisages the annual production of 13,000 tons of heavy water by the end of this century.

Although India's nuclear-power program calls for a meager 10,000 MW installed capacity by the year 2000, it is diversified and self-sufficient.

In a recent speech in Calcutta Bhabha Atomic Research Center Director and DAE Chief Homi Sethna said that India was poised to undertake a large-scale nuclear-power program since it could meet the fuel requirements not only of the thermal reactors, but also the fast reactors and the thorium-based reactors envisioned for the future. "We are in a position to undertake fuel fabrication and fuel reprocessing as extensions of our past experience," Sethna said, adding that the fuel cycle for the uranium, plutonium, and thorium-uranium 235 system could be closed in all their aspects by indigenous technology.