

On Import of Electricity from Neighbour(s)

by Dr Engr Abdul Matin

One may find convincing arguments in favour of interconnection of the PDB system with those in the neighbourhood including that in Nepal (through India). Such interconnections should be made at as many points as possible along the entire border to increase the system stability and the supply reliability to the maximum extent.

RECENTLY, it was reported that the Power Development Board (PDB) of Bangladesh was planning to import electricity from West Bengal, India, to meet the present power shortage in Bangladesh. The main opposition party in the country has been opposing this move and accusing the government for proposing "to hand-over our sovereignty to our neighbour".

The Government of Bangladesh initially defended this proposal, arguing that it was originally initiated by the previous government and that the present government was simply implementing their proposal. The Prime Minister even made a personal statement supporting the idea of "importing electricity from any country, if necessary", but later it was stated in Parliament that the government had no such plan and that it was planning to make the power system of Bangladesh self-sufficient in generation.

Having patiently listened to what our national leaders said on this matter, I was wondering if they were being correctly advised by the competent technical experts on the subject or were being guided by either parochial or evasive ideas. Fortunately, I did not come across any statement by any of our leaders on the reported, but unconfirmed, news on India's plan for importing electricity from Pakistan or on a plan for interconnection of all the electrical power systems in the SAARC countries, perhaps because it was difficult to assume that all the countries in this region would sell-out their respective

sovereignties to each other! Without being emotional or parochial, let us try to analyse the issue of interconnection of electric power grids purely on technical grounds. First of all, it must be stated clearly that it is always desirable that an individual electrical power system should be self-sufficient in power generation. There are, however, definite technical and economic justifications for interconnection of such electrical power systems with the neighbouring ones. The main objective of this article is to highlight the technical and economic advantages of such electrical interconnections. To do this, we need to understand some basic technical issues relating to electrical power systems.

The demand or load in any electrical system varies daily from minute to minute, weekly from day to day, seasonally from month to month and, of course, from year to year as the demand or load keeps growing. The total generation in the system must, therefore, increase or decrease almost instantaneously as the demand changes. In order to meet this demand, the total generating capacity in any system must always be much larger than the maximum demand since some generating power plants may be out of operation for routine annual maintenance or urgent repair following a breakdown. The difference between the total generating capacity and the maxi-

mum demand is called the reserve generating capacity. The size of the reserve generating capacity in a system depends on the peak demand in the system plus the sizes of its generating plants. The routine annual maintenance of a power plant is very important for smooth and reliable operation of a plant. Without such routine maintenance, a power plant (like an automobile) is more liable to breakdown at any time causing interruptions of the supply system. Of course, it is expensive to keep a large reserve generating capacity over and above the required demand, but it is more expensive not to have this reserve generating capacity as, besides revenue losses, it will result in huge production losses in mills and factories when the system will fail to meet the demand.

At present, the available generating capacity (i.e. the total generating capacity excluding the capacity under repair or maintenance) in Bangladesh is less than the maximum demand and as a result, we experience load-shedding or blackouts almost daily on a routine basis. In fact, in a small power grid like that in Bangladesh, electricity supply may also be interrupted even with sufficient reserve generating capacity in the system. This may happen due to the breakdown of a transmission line or of a power plant if its size is relatively large compared to the total load in the system. Recently, we saw

such a breakdown in Bangladesh due to the forced shutdown of a generating unit at Ashuganj Power Station. Such breakdowns are quite common in Bangladesh but in interconnected systems in developed countries, they hardly occur more than once in three to five years. This brings us to the question: how large should a power plant be in an electrical system? Here, two desirable criteria work against each other. These criteria are economy and system stability. Needless to say, all power systems must operate economically so that the cost of generation of electricity (Taka/kWh) is as low as possible and at the same time the system must be stable and reliable. Electric power plants, in general, have high capital costs and this cost in terms of per unit of generating capacity (i.e. Taka/kWh) decreases significantly as the size of the plant increases. So, from the point of economy, it is desirable to have a plant size as large as possible to take advantage of what is known as economy of scale. Larger plants in relatively smaller grids, as mentioned earlier, have the disadvantage that they tend to make the system unstable. In addition, the system requires a large reserve generating capacity to meet the demand when such large plants are not in operation due to routine maintenance or urgent repairs. A larger reserve generating capacity, of course, involves additional capital investment.

For these reasons, the maximum size of a power plant in a system is carefully and optimally selected taking into consideration the opposing criteria of economy and system stability. Normally, this size should not exceed 10 per cent of the peak demand in the system.

Now, when an electric power system is interconnected with those of the neighbouring countries, it practically increases the size of the power system. This allows larger and more economical power plants to be built in the system without sacrificing system stability. In fact, such interconnection increases system stability and at the same time reduces the size of the required reserve generating capacity in each individual system and hence, its capital investment. When the individual power systems so connected are located in different time zones, peak loads in the power systems may occur at different times allowing exchanges of electrical energy during the critical peak load hours. This facilitates operation of electric power plants at higher plant factors (i.e. at higher average capacities) which further improves system economy. It is obvious that the interconnection of neighbouring power grids has many advantages which are shared mutually and equally by all the systems so interconnected. Under normal circumstances, an interconnected system should import electricity only when there is a temporary shortage of generating capacity. If appropriate arrangements are made, it is also possible to supply bulk electricity from one system to another on a relatively long term basis if justified from economic considerations. In view of the overwhelming advantages of electrical interconnections, all major neighbouring power systems in Europe and America are interconnected with each other. Since each system usually has interconnections at several points, it is possible to import electricity at very competitive rates by asking for spot quotations of electricity rates from the neighbouring systems.

Coming back to Bangladesh, one will find convincing arguments in favour of interconnection of the PDB system with those in the neighbourhood including that in Nepal (through India). Such interconnections should be made at as many points as possible along the entire border of Bangladesh to increase the system stability and the supply reliability to the maximum extent. In addition to the technical and economic advantages already mentioned, this interconnection will open the door for import of cheap hydro-electricity from Nepal if its huge hydro potential (possible 80,000 MW or more) is jointly explored with regional cooperation and international

assistance, the possibility of which cannot be ruled out under the favourable political climate now prevailing in the region. This may further help Bangladesh to revive its almost forgotten Rooppur Nuclear Power Project which could not be implemented so far mainly because the PDB grid was not large enough to integrate the minimum economic size (which is about 600 MW) of a nuclear power plant. If one or more 600 MW or larger nuclear power plants are built at Rooppur, Bangladesh may even be in a position to export cheap base-load power to India in the near future. Once the PDB grid is interconnected, foreign companies will be more interested to build larger and more economic power plants, perhaps including nuclear plants, in Bangladesh on build-own-operate (BOO) basis as it will guarantee the sale of bulk electricity to a much larger market in the region. Needless to say, the availability of cheap and reliable electric power in Bangladesh will accelerate industrial development and hence, economic growth by attracting both domestic and foreign investments.

The major technical and economic advantages of interconnection of the PDB power system with the neighbouring ones, as discussed above, are summarized below:

- (i) It will facilitate the construction of much larger and hence, more economical power plants in the system thus significantly reducing the per unit cost of generation of electricity (Taka/kWh).
- (ii) It will reduce the size of the reserve generating capacity in each system thus reducing the amount of the required capital investment.
- (iii) The power plants in the interconnected systems will operate at higher plant factors which will reduce the cost of generation of electricity in each system.
- (iv) It will improve system stability which will drastically reduce the need for frequent load-shedding practically with no more production losses in mills and factories.
- (v) It will facilitate the prospect of import of cheap hydro-electricity from Nepal if explored with regional and international cooperation.
- (vi) It will facilitate the revival of the Rooppur Nuclear Power Project in Bangladesh, opening up the prospect of export of cheap base load electricity to India.
- (vii) Availability of cheap and reliable electric power will stimulate industrial and economic growth in Bangladesh by attracting both domestic and foreign investments.

These are the basic technical and economic issues which the policy makers in the country must take into consideration while planning the future expansion of the PDB system. Emotion, parochialism or evasiveness should have no role to play on such technical issues.

The author is a former Chief Engineer of Bangladesh Atomic Energy Commission.

Bangladeshi Obstetrician — Surgical Volunteer in Haiti

by A Correspondent



Omar Alam (left) helps his father, Doctor Abu Alam, during a recent trip to Haiti.

WHEN Dr Abu Alam of Summit goes on vacation, you won't find him at a posh resort or the tourist traps. In the spring and fall, he works as a medical volunteer in Milot Haiti, a town without electricity or running water.

For eight years he has performed free surgery for Haitian women. Although conditions at the gynaecology clinic are primitive, the work is rewarding.

"In ten days, with the help of a translator, I see 300 to 400 patients the clinic plus I perform 20 to 25 surgeries. It is an insurmountable work load," Dr Alam said. "But women wait a year for surgery. One have to walk 100 miles on unpaved mountain roads to get to the hospital. Often there is no running water for the medical team to work properly. The generator is used as a reced. Sometimes we use ashlights in the operating room."

Dr Alam has been in private practice in Summit in New Jersey, US for 15 years. Dr. Alam, a Bangladeshi doctor, was settled and has been practising in New Jersey. He has his first medical schooling at Dhaka Medical College. "I go to Haiti because I can make a difference," he said. "But there is so much work. I feel like I've done nothing."

So he asks for help. Dr Alam's Summit team includes his 18-year-old son, Omar, and Kathy Groch, a private practice nurse. "Kathy and I have been working together for eight years at Haiti's Cruden Foundation, a public charity run by doctors in St Louis, Missouri. Sometimes, I have to anaesthetise the patient and perform surgery, then cook dinner for 18 at the end of the day. It is a very busy time," said Dr Alam, who is always looking for new recruits.

"Last year was my first trip. We flew into Cap-Haitien, and there were cows on the runway," said Omar Alam. "The country is so poor. In Milot, one pipe of water is on in the afternoon for only two hours. Now I can really appreciate electricity and

hot water." Omar spent part of his day assisting his father in the operating room. He also helped at the elementary school teaching English or at the nutrition centre leading malnourished children.

"It's a great experience, and I love meeting the people. The worst thing is that there are no jobs so people just hang out. Some locals have small fix-it shops or stores to sell Cokes. They want to work, but there is nothing to do," he said.

For Omar, it's not all work and no play on the island. "A basketball team of doctors set a basketball hoop that was set up on Main Street. In the evening, it was cool. That's when we'd play basketball. The whole town would come out to watch us. One time the police trucks turned on their headlights so we could play when it was dark: it was USA vs Haiti. We won half the games," said Omar, who is a senior at Pingry.

Educating children is a priority to Dr Alam and his wife, Rozana, also a doctor. They have four children in private school but also sponsor Haitian kids. "The per capita income there is less than \$200 a year. Tuition is \$15. So the purchasing power is strong. Still, some people live on only one banana a day," said Abu Alam. "Such extreme poverty exists only 400 miles from America. Billions of US dollars are poured into the country. Where is the money going? The only town we go to has not changed in eight years," said Dr Alam, who knows what it's like to be from a poor country. "The Alams visit family in Bangladesh every year."

"There are so many people who are unfortunate, who have nothing. If I can improve one person's life in this world here, I die, I will be so happy," said Dr Alam. To become a medical volunteer, or to donate health care supplies to the Cruden Foundation, one can call Dr Alam at (908) 273-5907.

Courtesy: Independent Press

Tom and Jerry



James Bond



Metropolitan



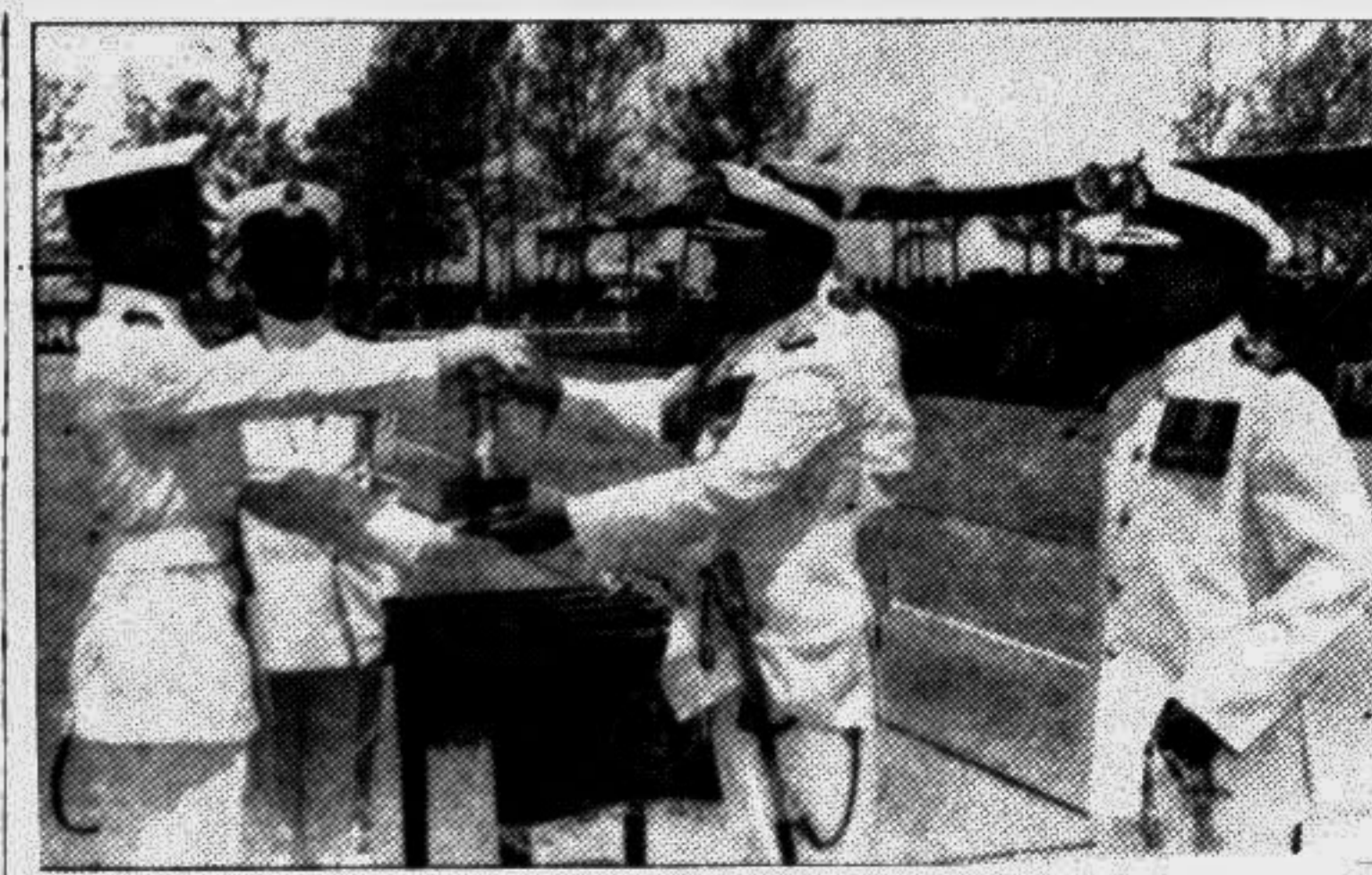
WB suggests formation of association of municipalities



'Proposed budget doesn't encourage export'

By Staff Correspondent
Leaders of Bangladesh Jute Spinners Association and Bangladesh Ship Breakers Association have given mixed reactions to the proposed budget for the fiscal 1997-98 placed by the Finance Minister SAM S Kibria in the Jatiya Sangsad on Thursday.

The association observed that the proposed budget does not encourage export. There is not much scope for development of jute exports. The government should give special considerations for growth of export of jute and jute goods. Policies should be made such a way so that it favours the sector's gradual development. The leaders of the association hoped that the incomplete and inadequate terms in the budget will be corrected through holding of discussion. Meetings with bodies the concerned. Leaders of the associations reacting to the proposed budget said raising VAT on import of ships for breaking from 7.5 per cent to 15pc will be a disaster for the ship breaking industry. There is no iron mine in the country. About 90 per cent of domestic steel supply is contributed by breaking ships. Many small industries directly depend on supply of steel from this industry. So, if this industry is threatened many other small industries will simply vanish, a press release said. The leaders urged the government to review the case of imposing extra VAT and reduce it to five per cent.



Chief of the Naval Staff Rear Admiral Mohammad Nurul Islam giving away the trophy to the best all round midshipman at the graduation parade of the Bangladesh Naval Academy at Patenga yesterday. — ISPR photo

President's parade on graduation of Naval Academy held

PATENGA (Chittagong), June 15: The President's Parade marking the commissioning of a batch of midshipmen of the Bangladesh Naval Academy was held at the Academy parade ground at Patenga, says a press release.

Chief of the Naval Staff Rear Admiral Mohammad Nurul Islam reviewed the smartly turned out parade and took salute at the impressive march-past. Later, he distributed awards among the midshipmen. The Navy chief also gave away Bachelor of Science Degree Certificates conferred upon the Midshipmen by the National University. Midshipmen Mohammad Shaiful Azam (X) BN was adjudged the best all round midshipman and was awarded the trophy of the Chief of Naval Staff. He also bagged the Osmani Gold Medal and Navy Chiefs' Gold medal for his feats in academic and professional subjects respectively.

Envoy of Japan meets Ershad

Ambassador of Japan to Bangladesh, Yoshikazu Kaneko, yesterday called on Jatiya Party Chairman HM Ershad at his Baridhara office the city yesterday reports BSS.

Water supply disrupted in city areas

Water supply in central part of the city was disrupted yesterday inflicting untold sufferings on the city dwellers, reports UNB.

WASA sources said water pumps under its Modes Zone-6 remained suspended since 11 in the morning due to low-voltage of power.

The areas where the water supply was disrupted included Fakirerpool, Nandipara, Shyam Udayan, Shahjahanpur and Segun Bagicha.

Alleged child-lifter beaten up

Another suspected child-lifter was injured in a mass beating and handed over to police in the city yesterday, reports UNB. Police said local people seriously beat an unidentified woman suspecting her of being a child-lifter and handed her over to the police. She was admitted to Dhaka Medical College Hospital in a critical condition.

WB suggests formation of association of municipalities

The World Bank has suggested the formation of an association, for effectively representing the interest of the municipalities in discussion with the government and in facilitating common interest activities, reports BSS.

In a recent study on Municipal Finance Management Sector, the WB said the association would be required as the number of municipalities continue to increase and it would be difficult for the government to work directly with all municipalities on various fields.

The study said, "effectively restructuring the system of municipal finance in Bangladesh will require reforms in governance, budgeting and fiscal management, the assignment of expenditure functions and revenue sources, the system of inter-governmental transfers, and enhancing the roles of NGOs and rest of the private sector in supporting an efficient delivery of public services."

Bangladesh already has the legal institutional framework of a decentralised system of local government, with democratically elected officials. However, in reality, there has been little decentralised local governance, the World Bank said, because of little local accountability to taxpayers, concentration of power by the municipal executives, obsolete laws and regulatory framework, limited administrative capacity and weak supervision by the central government agencies.

The WB said the current legal framework for municipalities and city corporations is outdated and ineffective. It suggested that the legal framework should be reviewed and updated right away to consolidate and simplify the numerous legal provisions affecting pourashawas and city corporations.

The Bank said to strengthen the municipalities, Local Government Engineering Department (LGED) should be given a more effective role in monitoring the financial performance of pourashawa and in providing technical support.

The study suggested that the duplication of responsibilities between LGED and the Department of Public Health Engineering (DPHE) should be eliminated by consolidating the responsibilities of the two agencies into one agency. The World Bank said the government would need to facilitate borrowing by municipalities by creating a financial intermediary that would lend to municipalities, using agreed commercial lending criteria.

WB suggests formation of association of municipalities

The World Bank said the pourashawas need to be given more discretion in establishment of tax rates. The revenues from the holding tax should be increased by re-assessing the tax base and indexing it to inflation, identifying all properties and increasing penalties and identifying tax delinquents, and by privatising the payment of tax through bank collection.

It said in facilitating NGOs' participation in municipal services, the main issue is to streamline the existing regulatory framework, to enable NGOs operate more effectively. NGOs also need to be accountable in their operations, and guidelines need to be established to monitor and enforce this accountability.

The World Bank also suggested five steps for more effective functioning of municipalities. It said the government should create a task force or blue ribbon commission with a mandate to deliver a plan for municipal reform based on the recommendations of this study report.

JS body reviews activities of Tea Board

A meeting of the Public Undertakings Committee of Jatiya Sangsad reviewed the overall activities of Bangladesh Tea Board (BTB) yesterday, reports UNB.

Held at the Sangsad Bhavan with Whip Prof Rafiqul Islam in the chair, the meeting discussed the income and expenditure of the Tea Board, including its management, logistic and office activities.

The income and expenditure of Bangladesh Tea Research Institute and three tea gardens — Daorachhara, New Samanabag and Patharia — from 1991 to 1996 were reviewed in the meeting.

The matters relating to the employees working in the government-owned tea estates on master role also came up in the meeting for discussion. Committee members Imran Ahmed, Advocate Fazole Rabbi, Abul Kalam Azad, Md Dabirul Islam and Shah Mohammad Abdul Hossain attended the meeting.

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Film Censor Appeal Committee reorganised

The government has reorganised the 11-member Bangladesh Film Censor Appeal Committee with the Principal Secretary to the Prime Minister as its chairman, according to an official handout, reports BSS.

Other members of the committee are Prof Pannu Kaiser, M Syed Ashraful Islam MP, Advocate Sheikh Nurul Huq MP, information secretary, Prof QAIM Nuruddin of the Mass Communication Journalism Department of Dhaka University, News Editor of The Daily Ittefaq Golam Sarwar, Director General of Shilpakala Academy, Principal Information Officer of the Information Department, Vice-Chairman of Bangladesh Film Censor Board and concerned deputy secretary of the Information Ministry.



Poet Shamsur Rahman, chief advisor to 'Manchitra', a Bengali-Japanese independent magazine published from Japan, inaugurating the Dhaka office of the magazine at 'Aziz Super Market, Shahbagh, in the city yesterday. Prof Sayed Anwar Hossain, Director General of Bangla Academy was also present.

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Rule on information secy, BSS MD for retiring two

The High Court yesterday issued a rule upon the Information Secretary and the Managing Director of official BSS news agency to show cause why the retirement orders of two senior staff of the agency will not be declared to have been made without lawful authority and is of no legal effect, reports UNB.

A division bench of the High Court comprising Justice M Mozammel Huq and Justice M Hasan Amin issued the rule following two separate writ petitions filed by former BSS Managing Editor Hasanuzzaman Khan and Chief News Editor ASM Habibullah challenging their retirement orders dated May 24, 1997.

The court also stayed the operation of the aforesaid orders of retirement, said a press release.

The petitioners stated in their writ petitions that they have been retired illegally by the government with mala fide intention. They have been serving BSS since its inception and have earned great reputation but the present government took different views and retired them, violating the principles of natural justice.