

High- Tech Surveillance System is need of the hour: World Bank Consultant

World Bank's Consultant Engr. Arjumund A Shaikh has underlined the need of establishing a strong technology - based surveillance system to check terrorist attacks on public places.

The success of preventing the terrorist attacks mainly lies in implementing a properly designed project after conducting site specific survey - based surveillance goals, he said during a presentation on "Intelligently Integrated Surveillance System" delivered to the engineers from various departments at the Institution of Engineers, Pakistan, Rawalpindi - Islamabad Centre on 12th April 2014.

He said the threat from

terrorism continues to evolve with the number of incidents and plots growing each moment within the country.

Crowded public places had been the attractive targets where thousands of innocent citizens were killed in recent years, he added. Engr Arjumund, who is well known and internationally recognized telecom and security expert, deliberated upon the concept of crime prevention through environmental design and selection of the right designed intelligent IP surveillance system.

He said each site needed to be independently surveyed based on risk assessment of the threat, as no two locations had ever similar surveillance objectives.

Lecture on Hydropower Development IEP urges the Government to speedup Hydropower Projects

IEP-RIC arranged a lecture on Developing Hydropower: Potential, Risks and Constraints at IEP Building, Islamabad on May 17, 2014.

The Presentation was made by Engr. Hussain Ahmad Siddiqui, Chairman, IEP-RIC.

is getting expensive with every passing day adding to the miseries of a common man.

Hydropower is renewable, reliable, sustainable, clean and low-cost. Hydropower will remain the most



Lecture on Hydropower was presided over by Engr. Parvez Butt, ex-Federal Secretary, Science & Technology and former Chairman of Pakistan Atomic Energy Commission.



IEP-RIC organized a Technical Session on Regulatory Framework with respect to Safety and Security of Nuclear Power Plants. The session was chaired by Engr. Mohammad Anwar Habib, Chairman, Pakistan Nuclear Regulatory Authority (PNRA). Also on the stage are Engr. Arjumund A. Shaikh, Vice Chairman IEP-RIC and Engr. Muhammad Iqbal, Member PNRA.

Engr. Parvez Butt, ex- Federal Secretary, Ministry of Science & Technology chaired the session.

Highlighting the significance of developing Hydropower, Engr. Siddiqui said that adequate, reliable and affordable electricity is the key to achieving sustainable economic growth. Unfortunately, not much attention has been paid by the successive governments in this direction, resulting in massive and continuous load-shedding across the country that has impacted badly the civic life and all sectors of economy. Also, the electricity

important resource of power generation in future in Pakistan that has an exploitable potential of about 50,000 MW. There is an urgent need to exploit hydropower potential optimally to meet the challenges of power crisis.

The government has recently launched a number of hydropower projects in public and private sectors. In view of past experience of inordinate delays in completing hydropower projects, it is imperative that under construction projects are completed according to timeline and within approved cost.

Developing Hydropower: Potential, Risks and Constraints

Pakistan's total hydropower resources have been estimated at about 100,000 MW theoretical and 59,796 MW gross or technical, out of which 41,045 MW is so far considered exploitable and economical potential. However, utilization of enormous hydropower potential is far from being realized. At present installed capacity for hydropower generation is only 7,095 MW, excluding off-grid installations. Thus, just less than 12% of gross, or about 17% of exploitable resources, is being utilized today. It is promising however that an ambitious plan has been launched to harness hydropower potential optimally, through investments by public sector as well as private sector.

Hydropower is the largest

generation in Norway, and in many African countries, is as high as 99%, while Brazil has 84%, Venezuela 74% and Canada 59% of total grid-based electricity.

There are 18 hydropower stations in operation by WAPDA with a cumulative capacity of 6,880 MW. Work on a number of hydropower projects is in different stages of construction, implementation and planning by WAPDA. By the year 2020, the WAPDA will have a total installed capacity of 15,000-MW hydropower, whereas independent power producers (IPPs) of 4,300 MW will also be connected to national grid by then. Also, old hydropower power plants are being upgraded and modernized in a big way to make those more reliable and efficient.



A pictorial view of participants

source of renewable power generation worldwide. It is recognized as reliable, sustainable, dependable, least-cost electricity and clean resource of renewable energy. Globally, there are over 11,000 hydroelectric power plants operating in 160 countries, with an installed capacity of 1,311 GW, contributing about 20% share to total energy-mix.

Interestingly, hydropower share of national power

Under-construction Neelum - Jhelum hydropower project of 969 MW capacity is re-scheduled for commissioning by 2016. Construction of Tarbela Fourth Extension project of 1,410 MW has recently commenced. Jabban of 22 MW has been commissioned and is under trials. Other projects under construction include Golen Gol 106 MW, Keyal Khwar 122 MW and Kurram Tangi 83 MW.

Issuance of tender for



Engr. Hussain Ahmad Siddiqui delivering the Lecture

construction of Diامر Basha dam project (4,500 MW) is awaiting financing by the international donor agencies. Meanwhile, feasibility studies of Bunji (7,100 MW) and Basha (28 MW) have been finalized. Feasibility study of Akhori Dam (600 MW) has recently been prepared. Also, WAPDA would shortly embark upon developing Dasu project (4,320 MW) in different phases. Likewise, detailed engineering design of Munda dam, renamed as Mohmand dam (740 MW) is being undertaken.

Chor Nullah System or Palas Valley project (1,176 MW) is to be constructed in three phases, while feasibility study of first phase (Lower Palas Valley project, 665 MW) has been finalised. Similarly, Spat Gah project (1,341 MW) is also planned for phase-wise development, commencing with Lower Spat Gah project of 496 MW. These projects are being developed under the Public - Private Partnership

mode. Studies for the Tarbela Fifth Extension project of 500 MW are being undertaken.

PEDO (formerly SHYDO) is developing 63 projects of total capacity of 370 MW in KP Province, whereas five projects with total capacity 24 MW are being implemented

by the Government of Punjab.

Similarly, the government of Azad Jammu & Kashmir is constructing 22 medium and small projects of total capacity of 262 MW. Many small, mini and micro projects of 248-MW cumulative capacity are in various stages of planning and construction in the Gilgit-Baltistan.

For a variety of factors, present share of private sector in hydropower electricity generation is nominal. Till recently, Jari-kas (Mirpur) and Machai (Mardan), each of one megawatt, were the only hydropower stations operating in private sector. Laraib Energy/New Bong Escape (84 MW) is the first major IPP project, which has recently been commissioned and connected to national grid. Upcoming projects in KP in private sector are of 63 MW including Mahandri 13-MW, Tangar 13-MW and Machai-2nd phase of less than 3-MW. Thirty small hydropower projects of 308 MW are planned for development in Punjab. Likewise, 11 projects of total 92 MW are under implementation in AJ&K and a project (Hanzal) of 40 MW in Gilgit. Progress on these projects, which are governed under the policies of the respective governments, is however very slow.



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The federal government had launched in May 1995, a policy framework & package of incentives for private sector hydropower generation projects, but none of the projects could materialize and, subsequently, Power Policy 1998 was introduced that also somehow failed to attract investment. It was only under the Power Generation Projects Policy 2002 that many foreign and local investors showed interest in developing hydropower projects. Hydropower projects currently under implementation are the under-construction Patrind (147 MW) in KP, scheduled for commissioning by 2017, Gulpur (100 MW), Kotli (100 MW) and Sehra (130 MW) to be completed by 2018, all located in the AJ&K. Other projects at various stages of implementation in the AJ&K are Suki Kanari (840 MW), Karot (720 MW), Azad Pattan (640 MW), Chakothi-Hattian (500 MW) and Kohala (1,100 MW), all scheduled for completion by 2020.

Economic life-time of a hydropower station is between 40 to 80 years and annual O&M cost is one to four percent of capital cost. Also, hydropower technology is well-proven, with efficiency rates up to 90%. While there are many benefits, development of hydropower projects pose numerous technical and economic challenges to the investor and developer. The projects are site-specific; sites located in far-flung, isolated and high-altitude areas lacking basic infrastructural facilities and connectivity to transmission network. Detailed studies of topogra-

phy, hydrology, site geology and engineering geological conditions are required.

Hydropower project thus involves high capital cost and long gestation period. There are other problems too, such as extreme weather conditions, non-availability of labour, housing and open land for project.

Compliance of environmental requirements and resettlement of population are also of prime importance. Developer of Karrang project (458 MW) in KP, which entails an underground powerhouse requiring special technology and expertise, has backed out. Financing is another issue. Undertaking detailed site investigations and preparing a bankable feasibility report of international standard requires placing substantial capital and other resources at risk. From the investors' viewpoint, law and order situation is of vital importance. Madian (157 MW) and Asrit Kedam (215 MW) projects in KP have been suspended due to this reason. Similarly, Munda Dam project in private sector could not come up because of resistance from the locals against their relocation.

Due to these constraints and risks, hydropower development is primarily to be undertaken by the government itself, not only aiming at increasing hydropower share in energy mix, but also for water sufficiency reasons. Indeed, the energy and water security are basics for any nation, which is the responsibility of the government to provide.

IEP MEMBERSHIP

The Engineers, who were Members of IEP, Rawalpindi-Islamabad Centre and have defaulted on payment of Annual Subscription are informed that The Institution of Engineers, Pakistan has decided to waive off all arrears in respect of such Members, provided they become Life Members on payment of one-time Life Membership Fee (Rs. 1500.00) before December 31, 2014. For details, please contact:

Ph: 92-51-2331924, 2331925, Fax: 92-51-2331926

UPDATION OF RECORD

A large number of IEP-RIC Members, it has been observed, have changed their addresses and contacts. The same need to be updated to ensure effective communication with them. All such Members are requested to forward their updated addresses and contacts to:

IEP Building, Plot No 12,
Mauve Area, G-9/1 Islamabad, Pakistan
Ph: 92-51-2331924, 2331925
Fax: 92-51-2331926

Technical Session on Nuclear Regulatory Framework in Pakistan

“Eagle – Eyed PNRA Staff Keeps Watch over Nuclear Facilities”

The nation has been assured once again, that all nuclear installations are safe and secure. Pakistan's official regulatory agency for nuclear facilities is keeping a close eye on the safety and security protocols of the country's nuclear power plants, including those that are under – development, according to the agency's officials.

Representatives of the Pakistan Nuclear Regulatory Authority (PNRA) were speaking at a session on “Regulatory Framework in Pakistan with respect to Safety and Security of Nuclear Power Plants” on 15th February 2014. The session was organised by the Rawalpindi - Islamabad Centre of the Institution of Engineers, Pakistan.

Through its regulatory mandate the PNRA is focused on ensuring that the public, the environment and nuclear power plant workers are not harmed by radiation, PNRA officials said at the session.

The officials said nuclear safety deals with protecting people and environment from harmful radiation through design features, physical barriers and mitigation

efforts. On the other hand, nuclear security typically involves detection of, prevention of and response to activities such as theft, sabotage or unauthorised access at nuclear power plants that can lead to safety issues, officials said.

PNRA works independently from the country's only nuclear material operator, the Pakistan Atomic Energy Commission. The authority is responsible for authorisation – licenses and permits – review of technical reports related to construction and safety of nuclear facilities, development of regulatory framework and enforcement said Mr. Muhammad Rahman, the director of PNRA's Nuclear Safety Directorate.

The “regulatory pyramid” regarding nuclear safety in Pakistan flows down from an ordinance to regulations – written in light of International Atomic Energy Agency (IAEA) rules – all the way down to regulatory guidelines and industrial codes, Rahman said.

Major national regulations include rules on safety of terms of design, he said. He



**Mr. Mohammad Anwar Habib
Chairman, PNRA**



**Mr. Muhammad Rahman
Director (NSD), PNRA**

said the regulations are supposed to be followed by the operator of the power - plant, but PNRA keeps a close

PNRA, Mr. Abdul Mannan, Secretary PNRA and Engr. Waqar Murtaza Butt, Member PAEC.



**Mr. Abdul Shakoor
Head (PPSD), PNRA**

check through regular inspections before, during and after the construction.

Technical Session was followed by a substantive Question-Answer Session. On various points raised by the participants, elaborate deliberations were made by the speakers, Engr. Muhammad Iqbal, Member

The concluding remarks were made by Engr. Mohammad Anwar Habib, Chairman, PNRA.



A pictorial view of participants

Press Digest

The Pakistan Observer
19th May 2014

IEP urges for timely measures to avert water crisis

ISLAMABAD—The Institution of Engineers, Pakistan (IEP) has cautioned that the federal capital might face serious water crisis in near future, if the existing water storage capacity was not increased.

This existing water supply system in the capital is rapidly becoming inefficient to meet the growing needs of the local residents. The Capital Development Authority needs to take the matter seriously, said Chairman IEP, Rawalpindi-Islamabad Centre, Engr. Hussain Ahmad Siddiqui while talking with a group of media here.

Three main sources of water supply feeding Islamabad are Simly Dam, Khanpur Dam, tube wells and small head-works are not been properly developed. The water supply to various sectors is not sufficient. Water supply lines have been laid decades ago and their life is over-spent. More than 25% of water is lost through leakages. To improve, the replacement and distribution system of the water has to be managed in a better way.

Engr. Siddiqui urged the CDA to take urgent measures for exploring new sources of water supply. The construction of auxil-

itary spill-way at Simly Dam has increased the water storage capacity but there is a potential of having another reservoir for storage on the up-stream side of the present dam in the catchment area.

It has been observed the 'nullah' along the road leading to Khanna Bridge during the rains gets over-flooded and even nearby streams overflow. This trapped water can be very useful for the construction of another reservoir which will be of great significance for the improvement of water supply of Islamabad.

Construction of other small dams at various locations given in the JICA report can improve the water supply. Even trapping of rainwater can be useful in this regard. There is already a report available with CDA which has pin-pointed the construction of small dams around Islamabad which can add to the water supply of Islamabad. He called for developing a main permanent water source for the future of Islamabad. The various proposals like bringing the water from other cities is needed to be implemented on priority basis. Engr. Siddiqui observed that the new

housing societies beyond GT Road across Kashmir Highway and those on Islamabad Highway, which according to a rough estimate are developing more than 15,000 plots do not have proper water supply.

They are dependent on under-ground water coming from the leakages of Khanpur Dam. Once it fully occupied, it is feared that these societies will have no water supply and as such these societies need to evolve a permanent water supply source or CDA should cater for their demands under its water supply system.—INP

The Pakistan Observer
07th April 2014

IEP-IST to help govt implement Vision-2025

STAFF REPORTER

ISLAMABAD—Institute of Engineers, Rawalpindi-Islamabad Centre (IEP-RIC) and Institute of Space Technology (IST) will mobilize and motivate technical experts and engineers to help the government in finalizing and implementing its Vision-2025.

Both sides at a meeting held here have reached an agreement to hold panel-discussions and seminars country-wide basis to give their technical input and suggestions to the government on Vision-2025, as was put forth by the Minister for Planning and Development Ahsan Iqbal.

It aimed at taking part in the national-building task and supporting the government to address the socio-economic problems of the country. The meeting was presided over by Vice Chancellor IST Inam Rehman. A delegation led by World Bank's Consultant Engr. Arjumund A.

Shaikh attended the meeting. The delegation included senior engineers Dr Attaullah Shah (AIU), Wing commander (Retd) Hamid Asad Khan (Bahria Town), Lt. Col Dr. Manzoor Hussain, (B-in-C branch-GEQ) and Engr. Najamuddin (National Accreditation Council).

Both sides discussed the challenges and issues faced by the country in socio-economic sector and agreed to work jointly for addressing them through their technical support to the government. In this connection, interaction will be arranged at the level of faculties and students that could help formulate proper planning for addressing the serious issues like energy crisis, climate change and water crisis.

They also agreed to upgrade and implement Continuous Development Programme (CPD) set forth by Pakistan Engineering Council. They will share research-work and technical know to achieve common goals and objectives.

Daily Times
11th May 2014

IEP to launch housing scheme for engineers

Obaid Abrar Khan

Islamabad

Institution of Engineers Pakistan (IEP) on Saturday announced that it will soon launch a housing scheme as well as a welfare fund for engineering community.

This announcement was made by Engineer Hussain Ahmad Siddiqui, Chairman of the IEP-Rawalpindi-Islamabad Centre, while addressing a meeting on the occasion of Engineers' Day. Some other proposals for social welfare of its registered engineers were also being actively considered including a plan for providing professional guidelines and training to the young engineers.

The IPE's local centre has also chalked out plan of activities including holding of workshop and seminars during the year on engineering related issues. The emphasis are being laid on arranging job-oriented

and skill-based programmes for their members that equip themselves with latest techniques and technology, bringing their work at the level of international standard.

Highlighting the recent initiatives taken by IEP for professional development of the engineering community, Engineer Hussain Ahmad Siddiqui said they have embarked on new areas, such as adopting emerging technologies, promoting state-of-the-art skills, developing entrepreneurship and providing high-tech employment for young engineers.

Pursuant to the policies of the democratic government, salutary measures have been taken by the IEP to assist various ministries, departments and agencies, enabling the country to achieve its developmental goals for securing a prominent place among developing nations in not too distant a future.

Daily Times
19th May 2014

Capital may face water crisis in future: IEP

■ CDA asked to take measures to avert water crisis

ISLAMABAD: The Institution of Engineers Pakistan (IEP) has cautioned that the capital might face serious water crisis in near future, if the existing water storage capacity is not increased. The existing water supply system in the capital is rapidly becoming inefficient and unable to meet the growing needs of the local residents.

The Capital Development Authority (CDA) needs to take the matter seriously, said IEP Chairman Hussain Ahmad Siddiqui while talking with a group of media personnel on Sunday. The main sources of the water supply

feeding the city are Simly Dam, Khanpur Dam, and tube wells. The water supply to various sectors is not sufficient while the water supply lines have been laid decades ago, and their life is over-spent. More than 25% of the water is lost through leakages.

To improve, the replacement and distribution system of the water has to be managed in a better way, he added.

Siddiqui urged the CDA to take urgent measures for exploring new sources of water. The construction of auxiliary spill-way at Simly Dam has increased the water storage capacity but there

is a potential of having another reservoir for storage on the up-stream side of the present dam. It has been observed that the 'nullah' along the road leading to Khanna Bridge during the rains gets over-flooded and even the nearby streams overflow. This trapped water can be very useful for the construction of another reservoir which would be of great significance for the improvement of the water supply. The construction of other small dams at various locations given in the JICA report can improve the water supply, he said. During rains, the nullah gets flooded

which very easily can be stopped in the city by the construction of a reservoir. Even the trapping of the rainwater can be useful in this regard.

There is already a report available with CDA which has pinpointed the construction of small dams around the city which can add to the water supply of the city.

He called for developing a main permanent water source for the future of Islamabad. The various proposals like bringing the water from other cities are needed to be implemented on priority basis. Siddiqui claimed that the

new housing societies beyond GT Road across the Kashmir Highway and those on the Islamabad Highway, which according to a rough estimate are developing more than 15,000 plots do not have proper water supply. They are dependent on under-ground water coming from the leakages of the Khanpur Dam. Once the society is fully occupied, it is feared that these societies would have no water supply, so these societies need to evolve a permanent water supply source or the CDA should cater for their demands under its water supply system. ANP

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Engineers' Day

The Institution of Engineers, Pakistan celebrated Engineers' Day on 10th May 2014.

On the occasion, Chairman IEP-RIC pointed out that the social and welfare issues of the engineers' community are also being looked after effectively, and a comprehensive plan for expansion of its existing building in G-8/1, Mauve Area in Islamabad, launching of a new housing scheme and creation of a welfare fund is being chalked out.

Central Council Meeting

292nd Central Council Meeting was held on 19th April, 2014 at IEP Headquarters, Lahore.

One of the major points discussed in the CCM was the progress of adding third floor on the existing Islamabad building and construction of a new building at vacant plot.

The house was informed that the completion certificate of existing building from CDA is expected shortly.

OBITUARY

The Editorial Board on behalf of IEP Rawalpindi-Islamabad Centre expresses profound grief on the sad demise of Engr. Muhammad Anjum Malik, Chairman, Specialists Committee and Member Local Council IEP, Rawalpindi - Islamabad Centre. He had retired as Member (Engineering), Capital Development Authority (CDA).

IEP-RIC during its lecture held on 17th May, 2014 paid tributes to the dedication, commitment and the untiring efforts of Late Engr. Anjum Malik towards achieving the objectives of IEP. May Almighty Allah grant Jannat-ul-Firdous to him and Sabr-e-Jameel to the bereaved family.

