

Newspaper Clips

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Upgrade outstanding colleges to universities, proposes panel

'System of affiliation has let down academic standards'

Aarti Dhar

NEW DELHI: At a time when the fate of deemed universities is hanging in the balance, a high-power committee has recommended that established colleges with a good track record be elevated to universities in a phased manner, giving them time to organise themselves for the new challenge.

The committee, set up to "Evolve a comprehensive policy for autonomy of Central Educational Institutions", has said the system of affiliation (of colleges to universities) has let down academic standards in both affiliated and affiliating universities. "It is not conducive

- **CEIs should be free to hire eminent faculty from any part of the world**

- **Institutions should be given greater flexibility in managing finances**

to continue the system in the present circumstances."

Given the need for increasing the number of universities, it is only appropriate that established colleges be elevated, the committee has said. In certain States, a cluster of institutions may jointly be given the status of a university or at least may remain autonomous in academic and administrative matters.

Further, the Central Edu-

ational Institutions (CEIs) should be permitted to hire eminent faculty from anywhere irrespective of the citizenship of the candidate, and decide on the fees to be charged and scholarships to be granted. Recoveries should be made subject to the broad policy and guidelines of the government, said the committee headed by N.R. Madhava Menon.

The CEIs should be free to invite distinguished citizens

from any part of the world to receive an honorary doctorate after approval from their Academic and Executive Councils. But "to ensure that the government is not put to any embarrassment, the decision to confer honorary degrees should be conveyed to the Human Resource Development Ministry, which, in turn, must send its concurrence within one month. Thereafter, the decision may be deemed to have approval. The institutions should be given greater flexibility in managing their finances, and the annual grant revised every year based on their academic and financial performance, even as they have the freedom to raise al-

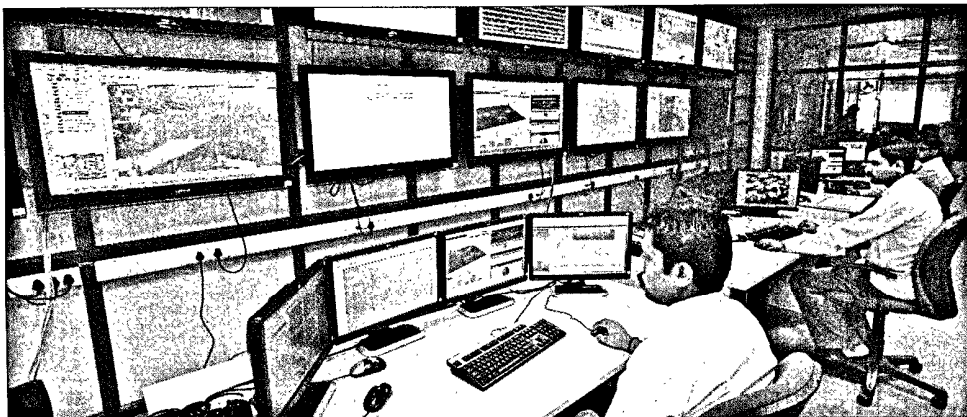
ternative funding, both internally and externally, subject to the general financial rules.

All Central universities must undergo a comprehensive review of their functioning once in 10 years by an External Peer Review Board (EPRB) to be constituted by the Union HRD Ministry from a large panel comprising eminent educationists, scientists, public figures and stalwarts from industry, living in India or abroad. "The Ministry shall use the EPRB as an instrument for extending additional support to allow the performing universities to evolve into higher levels of global excellence," the committee said.

Managing Traffic Through Technology

In our latest Technology for People series, we narrate how IT is improving effective policing

PIC NARASIMHAMURTHY



A view of the Bangalore Traffic Police's Traffic Management Centre. ET

JAYDEVAN PK
BANGALORE

His sun-burnt face lit up at the sight of visitors. "Please have a seat," he said before turning his attention to the array of computer screens in front of him. Basanna Bajanthri, a Bangalore traffic cop for four years, has not had it so relaxed. Till the other day, he was guarding busy traffic intersections, changing signals manually and chasing drunk drivers.

But things have changed for the better. Two months back, he was deputed to the Traffic Management Centre (TMC) — the technology nerve centre of Bangalore traffic police — to join a small team of policemen remotely managing the city's traffic.

"We remotely monitor nearly 120 cameras put up at different junctions. When we see a violation at a signal, we zoom into it, capture images of its number plate and slap a fine on the registered owner of the vehicle," explains Basanna. The record of the offence is stored in a central database maintained by the police and an owner who has been fined can check about his offence on the traffic website and pay the fine at a citizen service centre, online or at one of the designated police stations.

Vehicle owners can check pending fines on their vehicle by messaging a given number besides getting traffic updates on their mobile phones. Besides cameras at junctions, there are enforcement cameras at five locations across the city. If a

Through B-TRAC, we have set a target of reducing congestion by 30% in central areas, reducing accidents by 30% and improving parking management in the products. Tech can be used for management and compliance

PRAVEEN SOOD
ACC Traffic, Bangalore Police

vehicle is seen speeding, its picture is taken and a fine is sent to the owners registered address.

Technology support is not restricted to the management centre alone. Policemen on the ground are also equipped with BlackBerry phones and bluetooth printers — which are also linked to a central base. When a policeman observes a violation, he stops the vehicle, keys in the number and records the offence through the phone and checks for earlier violations. Violators can pay a fine on the spot or later while the policeman can print a receipt and hand it over immediately.

Besides making use of technology for better compliance, the police draw heavily on tech to manage traffic better.

Based on video analytics and tech-based surveys, the police has prepared a database which forms the basis of how long the green light will be switched on at each signal. Signals are connected to the TMC and monitored using a software. If a policeman at TMC observes congestion at a signal, he can change the green timings accordingly and manage traffic better.

Nearly four years ago, when Bangalore traffic police introduced BlackBerry phones to improve enforcement, people had their share of doubts. Will they be able to handle technology? Is it another publicity stunt? Proving the critics wrong,

the department has improved enforcement and management of bustling Bangalore traffic by making technological interventions.

Despite growing number of vehicles, increasing construction work and addition of new areas within its jurisdiction, technology has helped in bringing down the number of accidents, improving compliance and managing traffic better. In 2007, before any of this technology was in place, the city's police had booked nearly 1.4 million cases of traffic offence, which had risen to 3.3 million in 2010.

At the same time, the number of fatal accidents have gone down from 957 in 2007 to 816 in 2010. Number of non-fatal accidents have come down from 6,591 to 5,343. Sharp rise in the number of vehicles on Bangalore's roads is a key reason for technology adoption, which is an enabler: There are nearly 40 lakh vehicles and every year, the number of vehicles is growing by 7-8%. Experts say the number of two-wheelers and cars are growing at 8.25% and 12.5%, year-on-year.

Another factor to adopt technology is the manpower crunch faced by the traffic police department — it has not added staff since 2007. Says traffic expert and chairman of Traffic Engineers & Safety Trainers (TEST), Professor MN Sreehari: "People say that the intelligent transport system, as it is called elsewhere, is very expensive. That is not the case. The system has come to existence because of human resource shortage. In advanced countries, there are shortages and hence automation is required. This leaves no room for human error and is an unbiased system. We can also introduce artificial intelligence later on."

This technology adoption programme, called B-TRAC, was kicked off in 2007 and is expected to cost Rs 350 crore. "We have set a target of reducing congestion by 30% in central areas, reducing accidents by 30% and improving parking management," says Praveen Sood, Additional Commissioner of Police, Traffic, who has been spearheading the B-TRAC project. Sood is an IPS cadre officer and an alumnus of IIT Delhi and IIM Bangalore.

The traffic management centres has different software and hardware components built by technology firms like MindTree, CMS Infosystems, Bharat Electronics, Robert Bosch, IBM and Cisco. Also, traffic density is updated onto maps from Google Earth so that a commuter can identify congested roads before hand.

"Traffic problem can't be solved by technology alone. The infrastructure also has to be improved. However, we can use technology to improve management and compliance," Sood added. The department is gearing up to set up nearly 400 signals which will be vehicle-actuated, networked, adaptive, controlled and monitored by the Traffic Management Centre.

Recently the Union government has recognised the B-TRAC project as one where technology has been innovatively used in e-governance. The project, for which PriceWaterhouseCoopers was a consultant, has been catching the attention of police officials in other cities as well.

"Such models can be replicated in other cities as well. Some have also shown interest in it but are not ready to talk about them yet. Compared to other cities like New York and London, this is a start. There is scope for much more. Closer integration of security and traffic is an area for improvement. There can be location based services delivered over the phone to commuters," said Neel Ratan, executive director, e-Governance practice, PwC India.

Tech Aids Policing

Using simple IT solutions aid in reducing traffic violations and decongesting arterial roads

TECHNOLOGY USED AT SIGNALS/TMCS

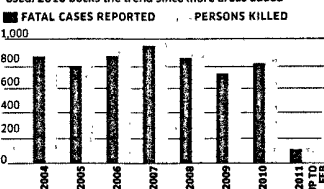
- ▶ Cameras placed at signals for traffic management and rule enforcement. A policeman at the traffic management hub observes these cameras placed at junctions
- ▶ If he sees a violation at a signal, he zooms into the vehicle's number plate, and the software records the number. Then the software helps fixing the quanta of fine and the demand for fine goes to the owner's registered address
- ▶ Record of violation stored in the traffic police database
- ▶ Fined vehicle owner can pay fine at BangaloreOne centres, through the traffic police website or at a traffic police station
- ▶ The vehicle owner can also check pending fine on his vehicle by messaging BTIS FINE <vehicle number> to 52225
- ▶ Vehicle owners get traffic updates on their mobile phones
- ▶ The police personnel at the monitoring hub sees the level of congestion in a road, adjusts the timing on the software linked to the signal which increases/decreases the time span between red, yellow and green
- ▶ Signal timings are worked out using historical traffic data and video analytics

TECHNOLOGY USED ON THE FIELD

- ▶ Police personnel on the ground equipped with BlackBerry and Bluetooth printers observes violation. Blackberrys are linked to a central database
- ▶ Stops the vehicle, punches in the number and records the offence through Blackberry
- ▶ Checks for previous records and imposes fine
- ▶ Violator pays fine on the spot or later through other channels
- ▶ The police personnel prints a receipt through Bluetooth printer and hands it over immediately

Fatal Cases Reported From 2003 Till Date

There is a drop in cases since 2007 when the tech was first used. 2010 bucks the trend since more areas added



SOURCE: BANGALORE POLICE

Hindu, ND 17-Mar-11 p-14

How the nuclear plant crisis happened

The fuel in all the 3 Units is thought to have at least partially melted down despite pumping sea water and boric acid into the Units

R. PRASAD

The crisis at the three Fukushima Daiichi nuclear power stations did not come from buildings collapsing due to the March 11 earthquake of magnitude 9 but from power failure following the quake. The tsunami knocked out the generators that produced the power. Lack of power in turn caused the cooling systems of the reactors to fail.

The Fukushima nuclear reactor 1 went critical on March 1971 and is a 460 MW reactor. Unit-2 and Unit-3 are 784 MW each and went critical in July 1974 and March 1976 respectively. All the three are Boiling Water Reactors (BWR) and use demineralised water for cooling nuclear fuel.

The fuel, in the form of pellets, is kept inside a casing called cladding. The cladding is made of zirconium alloy, and it completely seals the fuel. Fuel pins in the form of bundles are kept in the reactor core. Heat is generated in the reactor core through a fission process sustained by chain reaction.

The fuel bundles are placed in such a way that the coolant can easily flow around the fuel pins. The coolant never comes in direct contact with the fuel as the fuel is kept sealed inside the zirconium alloy cladding. The coolant changes into steam as it cools the hot fuel. It is this steam that generates electricity by driving the turbines.

All the heat that is produced by nuclear fission is not used for producing electricity. The efficiency of a power plant, including nuclear, is

not 100 per cent. In the case of a nuclear power plant the efficiency is 30-35 per cent. "About 3 MW of thermal energy is required to produce 1 MW of electrical energy. Hence for the 460 MW Unit-1, 1,380 MW of thermal energy is produced," said Dr. K.S. Parthasarathy, former Secretary, Atomic Energy Regulatory Board, Mumbai. "This heat has to be removed continuously."

In the case of the Fukushima units, demineralised water is used as coolant. Uranium-235 is used as fuel in Unit-1 and Unit-2, and MOX (a mixture of oxides of Uranium-Plutonium-239) is used as fuel in Unit 3.

Coolant flow

Since a very high amount of heat is generated, the flow of the coolant should never be disrupted. But on March 11, pumping of the coolant failed as even the diesel generator failed after an hour's operation.

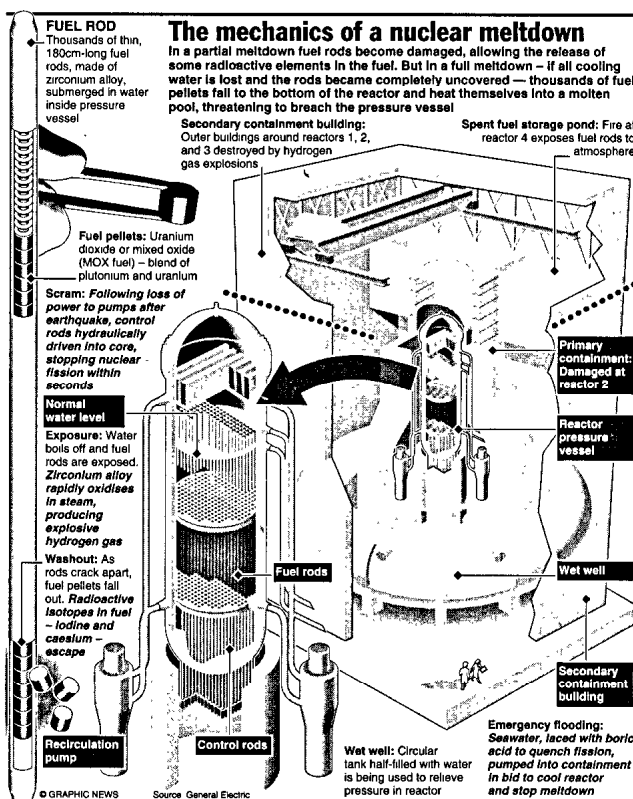
Though the power producing fission process was stopped by using control rods that absorbed the neutrons immediately after the quake, the fuel still contains fission products such as iodine-131 and caesium-137 and activation products such as plutonium-239.

Decay heat

"These radionuclides decay at different timescales, and they continue to produce heat during the decay period," Dr. Parthasarathy said.

The heat produced by radioactive decay of these radionuclides is called "decay heat."

"Just prior to the shut down of the reactor the decay



heat is 7 per cent. It reduces exponentially, to about 2 per cent in the first hour. After one day, the decay heat is about 1 per cent. Then it reduces very slowly," he said. While the uranium fission process can be stopped and heat generation can be halted,

there is no way of stopping radioactive decay of the fission products.

Apart from the original heat, the heat produced continuously by the fission products and activation products has to be removed even after the uranium fission process

has been stopped.

Inability to remove this heat led to a rise in coolant temperature. According to the *Nature* journal, when the temperature reached around 1,000 degree C, the zirconium alloy that encased the fuel (cladding) probably began to

melt or split apart. "In the process it reacted with the steam and created hydrogen gas, which is highly volatile," *Nature* notes.

Though the pressure created by hydrogen gas was reduced by controlled release, the massive build-up of hydrogen led to the explosion that blew the roof of the secondary confinement (outer buildings around the reactor) in all the three units (Unit-1, Unit-2 and Unit-3). The reactor core is present inside the primary containment.

But the real danger arises from fuel melting. This would happen following the rupture of the zirconium casing. "If the heat is not removed, the zirconium cladding along with the fuel would melt and become liquid," Dr. Parthasarathy explained. The government has said that fuel rods in Unit-3 were likely already damaged.

Effect of melted fuel

Melted fuel is called "corium." Since melted fuel is at a very high temperature it can even "burn through the concrete containment vessel."

According to *Nature*, if enough melted fuel gathers outside the fuel assembly it can "restart the power-producing reactions, and in a completely uncontrolled way."

What may result is a "full-scale nuclear meltdown."

Pumping of sea-water is one way to reduce the heat and avoid such catastrophic consequences. The use of boric acid, which is an excellent neutron absorber, would reduce the chances of nuclear reactions restarting even if the fuel is found loose inside the reactor core. Both these

measures have been resorted to in all three Units. Despite these measures, the fuel rods were found exposed in Unit-2 on two occasions.

Fate of reactor core

While the use of sea-water can prevent fuel melt, it makes the reactor core completely useless due to corrosion.

The case of Unit-4 is different from the other three units. Unlike in the case of Unit-1, 2 and 3, the Unit-4 is under maintenance and the core has been taken out, and the spent fuel rods are kept in the cooling pond.

Whatever led to a decrease in water level, the storage pond caught fire on March 15 possibly due to hydrogen explosion. The radioactivity was released directly into the atmosphere.

Spent fuel fate unknown

It is not known if the integrity of the cladding has been already affected and the fuel exposed. Since the core of a Boiling Water Reactor (BWR) is removed only once a year or so, the number of spent rods in the pond will be more.

If the fuel is indeed exposed, the possibility of fuel melt is very likely. Though the fuel will be at a lower temperature than found inside a working reactor, there are chances of the fuel melting.

Since it does not have any containment unlike the fuel found inside a reactor, the consequences of a fuel melt would be really bad. Radioactivity is released directly into the atmosphere. Radioactivity of about 400 millisv/hour was reported at the site immediately after the fire.

Times of India ND 17/03/2011 p-13

600 more MBBS seats in AIIMS-like institutes

Kounteya Sinha | TNN

New Delhi: Come 2012 academic session and the medical colleges of the six AIIMS-like institutions will be open to undergraduate medical education (MBBS). The construction of the six medical colleges — each with 100 MBBS seats — will be completed in August.

However, the super-speciality hospitals, which are being built along with the colleges will be completed by 2012. They will be functional from the next year.

In total, each AIIMS-like institution has been built at nearly Rs 847 crore, up from Rs 332 crore that was originally estimated.

Union health minister Ghulam Nabi Azad said on Wednesday: "The medical colleges in the six AIIMS-like institutions will start operating from the next year. The super-speciality hospitals will follow."

He added: "More than \$2.5 billion will be spent in the next 2-3 years to establish six



The construction of the six medical colleges, each with 100 MBBS seats, will finish in Aug. Around 94 eminent scientists and doctors have applied for the posts of directors in these six institutes

state-of-art tertiary care institutions modelled on the lines of our premier institute All India Institute of Medical Sciences in the under-developed and under-served regions of the country."

Around 94 eminent scientists, doctors and academicians have applied for the

posts of directors in these six institutes. A health ministry's search-and-selection panel is finalizing the names of six directors from these aspirants' list. The colleges are located at Patna, Raipur, Bhopal, Bhubaneswar, Jodhpur and Rishikesh under the Pradhan Mantri Swasthya Suraksha Yojana (PMSSY).

"Constructing the medical colleges took 15-18 months. Civil work will end by August-September. There will be 600 additional MBBS seats. The hospitals will be ready next year. Each will have 960 beds, including 500 beds for the medical college hospital, 300 beds for speciality/super speciality and 100 beds for ICU/accident trauma," an official said.

In the second phase of PMSSY, the government has also approved setting up of two more such institutions. Union health secretary K Chandramouli told TOI that "the present schedule is to admit MBBS students from 2012. The hospital will be ready a year later."