Nuclear Reactor, Not in Our Backyard

by Ishtiaqur Rahman

It is an exciting time for renewable energy and there are forces in play that is pushing this technology to the forefront of our consciousness. Renewable sources provide energy no different from energy provided by the conventional power-grids we have come to know, except that the pollution, acid rain, and greenhouse gasses will be missing, and no toxic waste from nuclear power plant to worry about.

MANY of the technological wonders we have incorporated in our lives often have long lag times for their effects to be known; such as, synthetic pesticides, the problem with the ozone layer, gene-splicing, terminator agro-seeds, nuclear power plants, as well as the moral issues involved in gene-cloning, and so on. The ongoing debate on the nuclear-energy is that there is no way to establish definitely the magnitude of the risks involved. The regulatory agencies of the developed nations do not have conclusive and irrefutable evidence for deciding the issues one way or another. Advocates of nuclear power insists that the probabilities of accidents are low, that the major causes of accidents have been identified, and the worst case would not really be that bad; however, none of these arguments can be fully verified. They are still having trouble to rectify matters at Chernobyl nuclear plant that went haywire sixteen years ago; and the Three Mile Island nuclear power plant in America is still an issue that comes up in these debates since the accident there more than twenty years back. So, what do you say, shall we take a chance right here in our backyard at Rooppur, Pabna for installing a nuclear power plant? The proposition is not only frightfully disheartening, it is downright preposterous, a bit high-flown, really.

Nobody can keep up with all the information unleashed by the unceasing advance of science and the doors of opportunities it opens for us; however, we don't need to adopt the scientific method at the first chance we happen to come by it, especially when we know that there exists a menacing side if the technology should go wrong in any way. Seemingly benign technologies may have equally undesirable consequences designed into them. Perhaps we could wait and see some more years before plunging into the nuclear power business.

The technology of nuclear fuel is not appropriate for us for a number of reasons. The extent of idolising science and what it can do for us can only go so far; we should be careful as to restrain our incessant pursuit and expansion of scientific tinkering, and give scientific truth the status of an absolute, because once we recognise something as an absolute, faultless supreme truth, all of our other human values and instincts takes a backseat. Maybe, *that's where humanity is leading, and it may lead us to self-destruction*; but let's not quicken this passage willingly or unwittingly. It is bad enough that we are ravaged by the forces of nature with their regular visitations in the form of cyclones, floods, as well as droughts. But building a nuclear reactor would be courting disaster for sure. Operating a nuclear power plant would require the best of skills and the fullest dedication. Nuclear fuel technology is way up there in the hierarchy of modern scientific innovations. Incredulous as it is, we don't even manufacture all the parts that goes into making a cycle-rickshaw.

Harnessing a nuclear reactor for generating electricity requires precision instrumentation and meticulous attention to the minutest of details. In a densely populated country like ours, an accidental meltdown or even a small leakage, like the one in Tokaimura, Japan recently, could seriously affect the lives of thousands for many years to come. The wind knows no boundaries; think of Chernobyl. The distance from Pabna to Dhaka isn't much, the same is true for other city centres as well, and also we have our neighbours to think about. So, what price are we willing to pay for relatively cheap and efficient electricity? Electricity is addictive; how we get it doesn't matter anymore. Should we value everything in terms of cost-effectiveness, or somehow manage to place a quantifiable number on it, so that we can keep alive the engine of industrialisation?

We should try and concentrate on our hydrocarbon reserves for now, and hopefully build that business up and incorporate natural gas as a fuel for power generation when feasible, as well as for household fuel for cooking/heating. From the reported states it is learned that only a mere six per cent of the nation's population is currently benefited by the inlaid gas-lines for the use of natural gas. It would, therefore, appear that there is a scope for improving the utilisation of natural gas for our domestic use to a much greater extent. Natural gas, as most of us know, is safer and burns much cleaner and is less damaging to the environment than diesel or coal. The decision should be made considering the parameters and issues that's important, cogent and favourable for us, and not apply a formula or a module that has been proven elsewhere under different circumstances. If some foreign companies are imparting hints to our policymakers about the benefits of nuclear fuel to meet our ever-increasing electricity requirement, they may mean well in aiding our concerns for economic and industrial growth. But it would also mean that we will have to rely a great deal on foreign experts in designing, building, procuring the enriched radioisotopes, as well as operating and maintaining the nuclear facility for a very long time, not to mention about containing a mishap should it occur.

The average life span of these nuclear reactors is about 40 years. In America, many are approaching the end of their lifecycle, and some earmarked to be deactivated with no new proposal on the board. With so many reactors being decommissioned within the next few years, it will be fair to say that they will be sitting on some very expensive and intricate machinery, which could be refurbished and revitalised in appropriate machine shops and resold for huge profit. It won't be surprising to come upon salesmen of nuclear fuel reactors in the developing nations around the globe at the present time. In Germany, they have decided to discontinue use of nuclear technology for their energy source. Don't forget that they were making fighter planes and U-boats more than 75 years ago. And here we are plunging into the business of nuclear energy when they are thinking of discontinuing it for good. Something's amiss here. Our scientists and journalists may want to confer with the German experts and study the pros and cons of the subject matter.

Many of us learned from the newspaper briefs that the International Atomic Energy Agency is going to assist us in garnering support and create an intellectual climate of confidence among the nuclear reactor supplier group for installation of the power plant in Pabna. They have accomplished this task with amazing speed and ease. It is consequential to have confidence at any task one undertakes. But, in all earnest, going helter-skelter in every direction at once would be slipshod and disastrous. The salutary truth of the old proverb, *haste makes waste*, is surreptitiously being trampled over by the new principle, *haste and waste make money*.

Most developing nations now give at least lip service to the principles of considering differing points of view, but reality is peppered with examples of governments suppressing oppositions and blatantly ignoring environmental costs, and leaving the door open to corruption, all in the guise of economic growth. The mechanism and the machinations of wangling loans for huge projects and ways to attract foreign capital has reached an art-form of machiavellian design, a share of which is pilfered away in grafts and kickbacks by some of the people involved in such projects and grants.

It is evident to all of us by now, that when confronted with the choice of between long range environmental consequences and quick economic reward; however that may be achieved, both consumers and developers seem to opt for the later. Somewhere along the line we will have to balance the two interests to ensure environmental preservation as well as enhancing industrial productivity. Simply installing something with the help of others and relying on others at each and every stage of its construction, operation, maintenance and containing any malfunction of any kind is not the way to go on any project, let alone a nuclear power plant. Then there is the question, a big question, of disposing of the spent nuclear fuel rods. The scientifically advanced nations haven't found an expedient answer to this problem yet, which is why some developed countries are not building anymore nuclear power plants.

It is worthwhile here to consider the question of basic energy needs as distinct from mere wants or greed. As societies become more mechanised, however, basic needs cannot be so simply defined. In urban setting, the separation of home, workplace and the sources of other essentials is so great that making the rounds of these places on foot is practically ruled out, even bicycles are inadequate at times. Adequate transportation and the energy requirements associated with it become as basic as food itself, since it is the means for getting the food on the table. In the context of Bangladesh, we may still be classified as a predominantly agrarian society, and great majority of its 125m people still lives and sustains their livelihoods in rural settings in relatively primitive lifestyles. The energy requirements for these villages, at least for now, can be met with the renewable like solar photo-voltaic cells, and wind turbines with relative ease and much greater efficiency than utilising fossil fuels. Also a point to remember is that saving energy is cheaper than making energy. We should conscientiously use more efficient fluorescent lamps instead of incandescent lamps, look for more efficient household appliances, keep properly tuned and maintained autos, conserve water use and so on. Inefficient energy-sucking incandescent light bulbs typically transform the incoming energy into about six per cent light and 94 per cent (dissipating and unwanted) heat. A single 18-watt fluorescent lamp, which produces the same amount of luminescence as a 75watt incandescent (glowing with intense heat) and lasts 10 to 13 times as long, will eliminate emission of about one tonne of carbon dioxide and eight kilograms of sulphur dioxide, along with nitrous oxides and other heavy metals. Not only do these gases contribute to the greenhouse effect but they also degrade the air we must breathe in. If that doesn't impress anyone, you should remember that nuclear power plants generates colossal amounts of toxic waste that remains deadly for tens of thousands of years. Amory Lovins of RMI worked out the number in this example for us to weigh the options. Referring back to the fluorescent lamp; the amount of energy that the lamp saves could prevent half a curie (measuring unit of radioactivity) of strontium 90 and cesium 137 from being generated, plus about 25 milligrams of plutonium, equal to the explosive power of 385 kg of TNT! Let us for a moment ignore the possibility of an accident in the nuclear reactor. We must consider the toxic waste that would be generated and its staggering and mind-boggling lethal long life. We don't have vast open spaces in this densely populated country of ours. Where are we going to build our repository for depleted nuclear fuel rods? Some industrialised countries have found crafty and ingenious methods for recycling their depleted uranium by making ammunition out of them, encasing them in full metal jackets and firing them on their enemies, within enemy territory, far away from their national boundaries.

Conserving energy prevents a certain amount of destructive by-products from entering into our ecosystem. Energy conservation is not only beneficial to us on a local level; it makes sense for global preservation as well. Earth belongs to us all. Investing in energy-conserving technology is economically worthwhile if the investment saves us money over the lifetime of the product than its up-front cost. The nice thing about energy conservation is that the reason for conserving does not matter. You might be an advocate for the 'green' revolution and rightfully concerned about global matters, or you might be just trying to save money. Either way, it's a winner, you help the environment and you save money. A phrase that was made popular in the States a few years back comes to mind *Think globally, act locally.*

It is an exciting time for renewable energy and there are forces in play that is pushing this technology to the forefront of our consciousness. Renewable sources provide energy no different from energy provided by the conventional power-grids we have come to know, except that the pollution, acid rain, and greenhouse gasses will be missing, and no toxic waste from nuclear power plant to worry about. It is possible to operate any load with solar photo-voltaic cells; the cost, however, is another story. The cost of wind and hydro-turbines sources are much less, when applicable. The sun shines democratically on all of us everywhere, and here in the subtropical Bangladesh, we are blessed with sunrays for the greater part of the year; and compared to parts of arctic Europe we are faced with an overload, a glut. We must take advantage of this situation. It is splendid to learn that electricity for a major portion of the Olympic village for this year's Games at Sydney will be solar-powered.

The stranglehold that the oil companies have exerted over the oil business and various forms of power generation ever since the oil business started is something to muse over. The multinational oil companies that have recently congregated at our shores to help us develop our natural gas industry should tell us something. Let's face it, they are in it for the money, they have an obligation to their shareholders; after all, the concept of good business is making a profit.

Our nation depends on imported oil at an ever increasing rate, the statistical numbers are not known to me at this time, but whatever those numbers may indicate, one thing is certain that we will fare much better in an economy based on solar energy rather than burning fossil fuel. Of course, we have an added incentive now for developing our natural gas industry and services for our consumption first and foremost before even contemplating exporting it to our neighbours. Nuclear power at this point shouldn't even come into the picture. While disasters of catastrophic proportions elsewhere and fear have failed to impress us for staying away from nuclear power plants; perhaps opportunity now at our doorsteps in the form of natural gas, plain common sense and social democracy will lead us into the right direction. Powerful trans-national energy corporations are well entrenched to meet the consumers' rapacious need for energy. These power-groups profit tremendously from the infrastructure already in place or to be installed according to their specifications. As far as those in power are concerned, the less the public knows about solar power, the better. The very last thing they would like us to find out about is the storehouse of energy in the sun and the superabundant yield of energy available directly from the sun, without meter-readers and bill-collectors. For a developing country (on the sun-belt) such as ours, the choice is fairly straight forward: use less energy and make sure that energy comes from renewable sources much closer to home, say, our rooftops.

Arsenic Contamination

Wake up before Time Runs out

by Shaikh Md. Wahid-Uz-Zaman

ACCORDING to a study published by the World Health Organisation on September 8, 2000 in Geneva, Bangladesh is facing the 'largest mass poisoning of a population in history' because of arsenic contamination of its drinking water supplies. Allan H Smith, a professor of epidemiology at the University of California at Berkeley, who carried out the research work, also opined that between 33 and 77 million of the country's 125 million population was at risk.

The findings of the report set off an alarm bell for the government and the people at large. Professor Smith cautioned about a big increase over the coming years in the number of cases of diseases caused by arsenic. The diseases might be from skin lesions to cancers of the bladder, kidney, lung and skin to cardio-vascular problems.

The study reveals that in the past three decades the government has dug five million wells to provide drinking water and save millions of people from cholera, diarrhoea and other waterborne diseases. But the naturally occurring arsenic poison in the groundwater now threatens to overturn these health benefits. The arsenic problem came to the notice of the authorities as early as in 1993. The World Bank and UNICEF have provided Bangladesh more than 34 million US dollars to help build alternative sources of drinking water such as storage of rainwater or treatment of pond water.

Although, Smith's study urged the government to do more to provide arsenic-free water, educate communities about the risks and treat and monitor patients, unfortunately, the pace of awakening in the community regarding arsenic threat is not encouraging.

The gravity of the situation can well be imagined when it is said in the study published in WHO's aforesaid monthly bulletin that "Bangladesh is grappling with the largest mass poisoning of a population in history because groundwater used for drinking has been contaminated with naturally occurring inorganic arsenic". The study further said that the scale of this "environmental disaster is greater than any seen before. It is beyond the accidents at Bhopal, India 1984 and Chernobyl, Ukraine in 1986."

The study, in fact, was based on visits to Bangladesh by Professor Allan H Smith in 1997 and 1998 and added to the warnings by the UN Children's Fund, the US Government and other agencies, that Bangladesh is facing biggest health hazard in human history because of the arsenic.

In the given alarming situation as narrated above, the government may consider taking the following measures on an urgent basis:

- Imposition of ban on digging of all kinds of wells (shallow or deep) immediately. Indiscriminate pumping out of groundwater should be checked and regulated.
- In case of special necessity on health reason, the Ministry of Health and Family Planning may allow digging of wells in some very backward areas.
- The government should come up with comprehensive plan of action to build up reservoir to preserve the rainwater at village level directly under the supervision of the UP Chairman. The thana level co-ordination of activities of building of reservoir of rain water should be the responsibility of the Upazila Nirbahi Officer.
- The government has to create large-scale awareness amongst people about the hazards of arsenic contaminated water. State-run radio and television should broadcast regular programmes on arsenic contamination everyday in the evening at least for 15 minutes.
- There are a lot of ponds in the village of Bangladesh. The government should also take measures to treat the pond's water on regular basis and at least one pond in every village ought to be earmarked and maintained properly for drinking water by the villagers. The responsibility of looking after this kind of reserved pond (normally know as *dighi*) may be vested with the Upazila Chairman. But the administrative supervision should be carried out by the Upazila Nirbahi Officer.
- At district level, a committee should be constituted under the chairmanship of the Deputy Commissioner, SP, Civil Surgeon, Superintendent Engineer/Executive Engineer of PWD, all Upazila Nirbahi Officers and other concerned officials should be members of that committee. The committee should hold meeting every month and make report to the Ministry of Health and Family Planning on monthly basis.
- Ministry of Local Government and Rural Development should constitute a cell for "Ensuring Arsenic-Free Water" with a number of experts in consultation with UNICEF and WHO. The activities of the said 'cell' should be carried out in close co-ordination with the Ministry of Health and Family Planning.
- Civil Surgeon of every district should closely monitor the admission and treatment of arsenic patient on weekly basis and a consolidated report in this regard should be sent to Ministry of Health and Family Planning for necessary action. Directorate of Health should also be involved in the monitoring process of arsenic-contaminated diseases.

The recommendations above are made in the light of the study report of Prof H Smith and need to be implemented on an emergency basis.

Cure for Bad Politics!

Tired Voter

In economics it is said that sometimes bad money replaces good money. The economy remains in an ailing state, till normalcy returns (many South American and African states are passing through this phase). But it does not last, as this negative environment does not become stable in the long run (all evils are short-lived, but great damage can be done within a short period). This formation and disintegration processes and phases have been studied by the experts. The application of necessary corrections in the administration depends on the political will. Similar conditions prevail when bad politics takes over good politics.

In Dhaka today, the symptoms of bad politics are easy to identify. Black money and violence have entered politics, and the latter is considered to be a business, with quick investment return. How long will this atmosphere prevail in this real cut-throat business?

The disintegration will start from within (already started), and in addition, external forces will start working to break up this unnatural system. Too few are enjoying too much at too little cost and labour; which is against the established laws of nature, as scientifically processed for daily application. Poison carries its own antidote.

It is like an inverted pyramid, balancing on the tip at the bottom. The top heavy mass is in unstable equilibrium, and the wobbling will start sooner than later, and the whole structure will tumble down. The saturation point has almost been reached, judging by the accelerated number of daily incidents. The catalysts are being awaited, to start the process of breaking up.

In other language, it is called revolution or civil disobedience movement. The active politicians have so far not reacted actively to send any signal to the electorate. Then others will have to bell the cat, as the people may not allow the naughty cat to continue the dirty game.

Recently there was a news item which stated that in one village, the villagers held as hostage a small police team for allegedly accepting bribe when they came to the village to investigate a case. Senior police officers from the city had to rush there to save the police team (DS, Sept 17). This is an ominous trend in the besieged society. In another case, two youths were murdered, hacked to pieces, and dumped into the city manhole by the terrorists of the locality. The orgy of cruelty by the young generation is unimaginable. A stage might come when the question will be asked : who will protect and save the 'leaders'? The internal tremors will shake the very foundation of the present political culture; and planning strategies to contain the Opposition will be of no avail, because the danger is from within. The spoils of victory spoil the game.

The law and order situation is such that practically nobody is listening to anybody. This was not the case a few years ago, thereby indicating that the situation is going out of control, although the government would not admit it (obviously). Introduce the "multiplier factor", and all hell will let loose when the bursting point approaches (like the trembling attack of malarial fever so well known to the victim patients). Counter-measures are not in evidence, at least to the general masses, hence the insecurity syndrome is high, and the negative image about the administration is magnified, due to lack of effective deterrent action.

Now a new topical issue has been added : the election campaign for the next national polls has started amongst the political parties, and the opposition have formed an alliance, which must be worrying for the regime. The recent hostage episode at the DC's office in Chittagong cannot be separate from the mainstream consciousness prevailing in the society. There are too many complexities at every step creating vortexes of convergences and divergences which pose formidable challenge to the law enforcing agencies.

What is the conclusion? Sudden call for early elections, rather than tackle the issues administratively. Alternatively, if an Emergency were called, how the situation will remain under control? The damage control project will have to be long, in several phases. Where is the time and the mood? There are too many questions, and too few satisfactory answers.

Sydney Olympics: A Few Thoughts

by Harun ur Rashid

ON September 15 night, millions of Australians felt a surge of overwhelming pride as the Olympic Games got underway in Sydney.

Their cherished dream has come true at last. This is "Australia's" Olympics. It had been a long wait for 19 million Australians. Expectations are high that the Sydney Games will run as smoothly as can be expected.

Australian organisers are determined to ensure that they make no mistakes in running the 27th Olympiad as their counterparts did earlier in Atlanta and Barcelona. Billions of dollars have been spent by the Australian government to host the grand show and the Canberrans painfully realise that the world regards Sydney as the 'real' capital of Australia, although Canberra city houses the Parliament, highest judiciary and executive branch of the country.

The organisers have constructed the 110,000-seat Olympic Stadium, Sydney Superdrome, a new tennis centre and velodrome. It has a public transport system that mostly works and other infrastructures of international standard. On the whole the Games are running as smooth as silk.

So far there are glowing views about available Olympic facilities from visitors who have thronged this beautiful harbour city. No traffic discomfort has been faced by them to the various places of the games. The Sydney city (population 3.2 million) has been spruced up and looks magnificent with Sydney harbour bridge and the Opera House in the background. Local people greet every foreigner with a big smile. The protest of the indigenous Aboriginal people did not occur to mar the Games.

Sometimes the ceremony hinged on the surreal

An independent assessment produced last year by a reputable accounting firm estimated that the Games would generate 6.5 billion Australian dollars in addition to various economic activities and more than 90,000 new jobs would be created. For Australia there is a view that the Olympics will put the country on the map in terms of a place to visit (particularly for the Americans) and do business. The Australian Tourism Commission believes that the Games have accelerated Australia's international positioning by a decade.

The next host city Athens has no doubt been keeping a close watch on the sporting facilities which have been built, the infrastructure which has been put in place and how Sydney copes with the influx of media (about 12,000 sports journalists), Olympic officials, athletes and spectators for two weeks. The really keen observers may well be the 10 cities Bangkok, Beijing, Cairo, Havana, Istanbul, Kuala Lumpur, Osaka, Paris, Seville and Toronto which are interested to hosting the XXIX Olympiad in 2008 and the successful bidder will not be announced until July 20001.

There is a view that Olympic Games have lately degenerated into a commercial product, bereft of their lofty ideals. It used to be a joyous and competitive endeavour. The romantic commitment to individual spirit is not shared by many of the athletes. Cheats have prospered at the expense of the honest. Athletes have become political pawns. What is missing is the careful balance that allows an individual to give his/her best and at the same time raise enough income from the games to pay for them.

The transformation of sport to a product has affected other popular sports as well, say football and cricket (match fixing). Television and its associated mass marketing have brought an utterly new perspective to all sporting endeavours. Olympics are most affected because the rewards to the individual athletes and to their country are so much greater.

A view prevails that the IOC is a giant, self-perpetuating, unaccountable, unethical and undemocratic money-making machine. The sponsorship arrangements by the IOC are considered an outrageous imposition on the world public. There are times when the policy of IOC seems at odds with the interests of the international community.

A few of the members of the International Olympic Committee (IOC) have been known for their dishonesty and although the IOC has been able to clean its image more needs to be done to inspire full confidence in people. Drug-taking by the athletes was ignored, bribe-taking by some members of the IOC suppressed and opulent lifestyle of IOC members pursued in the name of the Games. The outgoing president of the IOC, Juan Antonio Samaranch (former Spanish Ambassador to the Soviet Union appointed by late Spanish dictator Francisco Franco) had to appear the before the US Senate last year to answer the charges against the Committee. Samaranch has himself become something of an image problem.

Whatever may be the shortcomings of the IOC, Olympic is an occasion where the world pay homage to ordinary people doing extraordinary things. What is impossible for ordinary people is being achieved by the athletes and the participants. The image of humankind is lifted to new heights by the athletes and participants of every race, religion and gender. The spectators can only salute them for their brilliant achievements. Humankind is being transported to a level of superhuman through the Olympic Games.

The writer is a former Bangladesh Ambassador to the UN.

Garfield ® **by Jim Davis**