



# ANUMUKIT

**A Journal Devoted to Non-Nuclear India**

*Volume 12 Number 2*

*October ! November 1998*

## **The Mirror Across The Border**

### **Nuclear Circus Comes To Town**

What is the May 28th nuclear circus for? One could take the government's word for it and accept that it is a celebration of "self reliance" of an "impregnable defence." Given that the government is in such denial about what is happening in the country and habitually lies even to itself, it is better to not take such answers seriously. The circus itself, however, has to be taken very seriously. It offers a glimpse into the future.

The nuclear circus is clearly meant as a prop in the narrow political sense. It is being put on as an opportunity to deepen and broaden support across the country for the government and for nuclear weapons. One need look no further than the planned celebrations which are said to include "a competition of ten best milli songs, seminars, fairs, festive public gatherings, candle processions, sports competitions, bicycle races, flag hoisting ceremonies etc. People will offer Namaz-e-Shukrana as well. Apart from this special programmes for children would be arranged. Debates would be held among school children."

To make sure that no one misses out on their quota of this new common-sense about the great and vital contribution made by nuclear weapons, and those who made them, to Pakistan there are to be appropriate programmes "broadcast on national network as well as locally by all 24 stations of the radio. In addition of the national

language Urdu, programmes in regional languages, including Punjabi, Sindhi, Pushto, Balochi, Brahvi, Saraiki, Potohari, Hindko, Balti and Shina will also be broadcast. The external service and world service will air special programmes in 15 foreign languages for listeners in Europe, Middle East, Africa and South East Asia. The Azad Kashmir Radio will also broadcast special programmes on the occasion in Kashmiri, Gojri, Pahari and English languages."

This would be all harmless entertainment if it was not centred on nuclear weapons. But it is. There has probably never been an occasion like this before, where a state used all its resources to build into its very national identity a pride in its capacity to commit genocide. As Mushahid Hussain proudly put it "Chagai has become a symbol of Pakistan's identity all over the world." If it succeeds at its efforts at creating a nuclearised nationalism, Pakistan, henceforth, shall be a country whose identity is based not just like others on a sense of a shared place, or history, language, culture, or even religion. This identity shall centre on a technology, and that too a technology of mass destruction. Rather than simply being a nuclear weapon state, it may become the first truly nuclear nation

For this reason, the nuclear circus is fundamentally immoral. It is nothing less than a state sponsored celebration of mass

murder. Weapons are tools of violence; and nuclear weapons the ultimate in such tools. All decent people detest them. No one should glory in their existence, never mind their possession.

The attempt to create a nuclear nationalism raises the question of how Pakistan will ever deal with nuclear disarmament. For the ringmasters of the nuclear circus, that day is obviously never to be allowed to dawn. Whenever the question of disarmament is raised, they will point to the public support for nuclear weapons (they have worked so hard to manufacture and say: "How can we? Our people will not permit it. They want nuclear weapons." With this they are trying to close permanently the door to real peace. Far better in their view a hate-titled nuclear-armed confrontation with India that in turn gives cause for demands for high military spending, and excuses state failure and government excesses in every other area.

The nuclear circus is also obviously meant as a national distraction. It shall be a brief respite from the daily experience of failure that consumes the time and energy and resources of the people of this country. There is hardly any point in recounting either the specific failures or the crises that have created them. It is all so well known. But it is worth doing as an act of solidarity with Najam Sethi, the editor of The Friday Times, who absolutely correctly observed

in his speech in India on April 30th that "Pakistan's socio-political environment is in the throes of a severe multi-dimensional crisis. I refer to six major crises which confront Pakistan on the eve of the new millennium: (1) the crisis of identity and ideology; (2) the crisis of law, constitution and political system; (3) the crisis of economy; (4) the crisis of foreign policy; (5) the crisis of civil society; and (6) the crisis of national security."

It is these fundamental political and social crises that the glitter of the nuclear circus and the rocket's red glare is meant to conceal. The success of May 28th is meant in one single act to overcome fifty years of abject failure to do anything but fail. This is why May 28th is now declared to be the most important date since independence. It is meant to mark a new beginning, the rebirth of a nation.

This third birth of Pakistan, after 1947 and 1971, is however no more auspicious than the first two. Each birth has been violent and produced violence. The first, out of the horrors of partition, failed to produce a viable constitution and led to military dictatorship and twice to war. The second birth, out of the slaughter in Bangladesh, failed to produce democracy and led to more dictatorship, and the sectarian demons who now haunt the land. This third life, born out of nuclear explosions, carries the threat of terminal violence.

It is worth delving a little deeper into what the nuclear circus is meant to conceal. It is meant to be an affirmation of strength, "virility," and pride (at least that is what President Tarar called it). What this tries to conceal, if not erase, is that events after the May tests provided clear evidence of how weak this country actually is. The sanctions that were imposed by the international community after the tests were lifted not because the world was awed by Pakistan's new nuclear might, but because for once they took a really good look at it and were horrified by its obvious weaknesses. Sanctions were lifted because otherwise the country would have fallen apart and nobody wanted to see that happen. It

## ■ From The

### A Long Way To Go

A march for global peace was begun on the first anniversary of the bomb blasts at Khetolai near Pokran. It will go up to Sarnath near Varanasi reaching there on 6th of August to coincide with the anniversary of the first use of such bombs on people. The marchers shouted "Our slogan is world peace, the future belongs to us; and "Victory to life". Yet in Ramdeora near Pokran, some fifteen young men threw stones at the marchers causing a grievous head injury. Perhaps these enthusiasts want victory to death. But why pick on these few bajaranjis. The ruling party launched its election campaign the same day, hoping to remind the people of its great achievement. In an insane society, the sane who need justification.

Even friends, people who clearly say, "We need to reject nuclearisation because of its social cost, new patriarchies, danger of state authoritarianism, damage to the environment, erosion of citizens' rights from a standpoint of democratic and ethical principles" make a distinction between nuclear energy and nuclear weapons. They fail to see the simple fact that nuclear energy and nuclear weapons are one and indivisible. One cannot logically oppose one and support the other. The best example of this is provided by the deal with Russia to buy two VVER reactors, presumably because Indian-scientists are so busy making the bomb that they cannot be expected to fulfil their targets for nuclear energy as well. There is also the matter of the nuclear powered submarine, a highly expensive submersible tub needed to hide those grand weapons from the enemy so as to keep the minimal nuclear deterrent, credible. Indian 'scientists' who seem to be so good at making nuclear firecrackers and long range missiles with exotic names have been miserable failures in designing a nuclear powered submarine. As a result, we have no choice but to accept whatever junk the Russians offer not only for the submarine but also for the nuclear power plant. Yet people with blinkers take a benign view of atoms for peace! We have a long way to go.

was an act aimed to protect Pakistan from itself- or more accurately, to try to protect its people from the criminal stupidity and recklessness of its leaders.

It is easy to see how having to accept this realisation of weakness would have created a crisis among those who were responsible for taking the decision to test. On the one hand they tested nuclear weapons and thought of themselves as being strong and having broken the "begging bowl." On the other, the world offered them pity and charity, because otherwise the country would collapse. And thus the nuclear circus as a way of ridding these fears and memories from their minds, of burying them forever. The louder and brighter and more strident the circus, the deeper the anxiety about being weak shall be pushed and more determined the attempts to deny it.

Given how personal politics has always been here, there is no avoiding the fact that the nuclear circus is also a form of self-gratification - a way for Pakistan's current crop of leaders to make themselves feel better about themselves. They know, at one level, that the rest of the world looks on them as not just venal and corrupt, but pathetic and pitiful figures ruling a country struggling to keep its head above water and who have to be protected from the consequences of their own actions. During the circus though, the nation will unite "to pay tribute to the courage, statesmanship and maturity of Prime Minister Nawaz Sharif" as one government press release put it. The government will make sure of it.

*Dr. Zia Mian*  
[Zia@princeton.edu](mailto:Zia@princeton.edu)

# Pokran Revisited

## Ground Zero & Zero Tolerance State

From Jodhpur the road shoots straight as an arrow across the desert to Jaisalmer, 300 km away; almost exactly halfway is Pokran. The giant hammer of the sun crashes down with soundless fury on the flat anvil of the scrub-covered plain. An occasional deer bounds over the thorn bushes, lured by the mirage of water shimmering in the distance. A year after Shakti the illusion is particularly apt.

Pokran II was the most re-sounding statement about the power of the Indian state to be made in decades. Its reverberations have been international: pro or anti, everyone now had to take the Indian state seriously. But how serious is that state about taking it- self seriously? How strong are its powers of intervention? And how uniform or selective is their manifestation? After the blast, what is the ground zero reality of Pokran today?

A 20-minute drive from Pokran is Khetolai, the village nearest to ground zero. Ground zero itself is completely out of bounds for civilians Khetolai, now famous for its cracked houses and cancer patients, is home to the Bishnois, the first conservationist community in the world. Their religious beliefs forbid them from felling trees and killing animals and some have even died while trying to protect the environment. It is a grim irony that they should have been chosen to bear the cross of Shakti.

### *Skeptical Villaege*

A dusty road through the scrub leads to the house of Rajkumar Bishnoi, a school teacher in the village where a Sunday morning meeting is on. The villagers are skeptical of being heard where it really matters, having bared their collective soul to a voyeuristic media on many occa-

sions over the past year. "You are from Delhi, tell us does anybody really care about us?" asks Sukhram, a young man.

Khetolai knows the answer. It has never waited for the state to deliver. It has quietly usurped the state's role, much like a copybook cooperative society. Education is a religion here. The village is fully literate barring those some who have married into it. The student- teacher ratio is ten to one.

Recently, (Sohanram Bishnoi, the secondary school headmaster, has devised a novel way of encouraging women to join the literacy drive. He has put up a blackboard near the water tank where they come daily with a new lesson written on it each day. Water is a major problem. Kane han. Radha and Bhagwati say that 20 to 25 trips a day to the tank is normal. Until last year, the only source of water was a pipeline from Lathi, 25 km away. The villagers collected Rs 70,000 and built a tank themselves

### *Bleeding Cows*

The water quality is appallingly poor. In the past year, the villagers have had to drink water that could well be radioactive. Rajkumar, a villager, says some JNU researchers came earlier with counters to measure radioactivity, but have not been heard about since then. But since the blasts, several people have been complaining of smarting eyes, bleeding noses, kidney and heart ailments and skin diseases

Cows in the village have been seriously affected by the Masts. Their udders are blocked and frequently bleed and some have gone blind. Repeated requests to the authorities to investigate the fall- out of the nuclear tests have been ignored. "This is a gross violation of human rights, don't we have a right to know if we are at risk? asks

Rajkumar. The village has only a dilapidated dispensary with no medicines or doctor.

Khetolai is a microcosm for the India that the state has shut itself from. A world away from Khetolar is Tilak Marg in the bean of Delhi, one of the selected thoroughfares in the capital to be officially designated as a Zero tolerance zone': Even the most minor traffic infringement on this stretch will be stringently and immediately punished. Yet Delhi has the macabre distinction of being the road-death capital of the world; there are more traffic fatalities every year in Delhi than in any other city With a few notable exceptions such as the so-called BMW incident' earlier this year when four people were mowed down by a speeding auto- mobile, by and large, these killers on wheels gel away scot-free. 'Zero tolerance' succinctly sums up the selective nature of the state: within certain narrowly defined parameters social, economic and political — it displays zero tolerance of even the smallest technical transgression. And as if to make up for this blinkered severity in most other areas it scores zero in registering and responding to the legitimate rights of its citizens. Hollowing the shooting of a young woman in a crowded Delhi restaurant where alcoholic drinks were illegally being served, state authorities have shown zero tolerance of the unlicensed sale and consumption of liquor; officialdom has also demonstrated near zero performance in controlling the proliferation of firearms and other lethal weapons in the capital and elsewhere in the totally un monitored reaches of the country. In the name of national security, the state has zero tolerance of anyone taking a photograph of even civilian airport facilities anywhere in the country; yet gun-runners can with impunity evade an Indian Navy blockade, allegedly with the connivance of top-level elements of the zero performance state. The

zero tolerance state frowns at enduring illiteracy; the zero performance state permits the proliferation of schools which have no blackboards, no text-books, no teachers, and often no students but are deemed to be schools nonetheless.

### Market Fills Vacuum

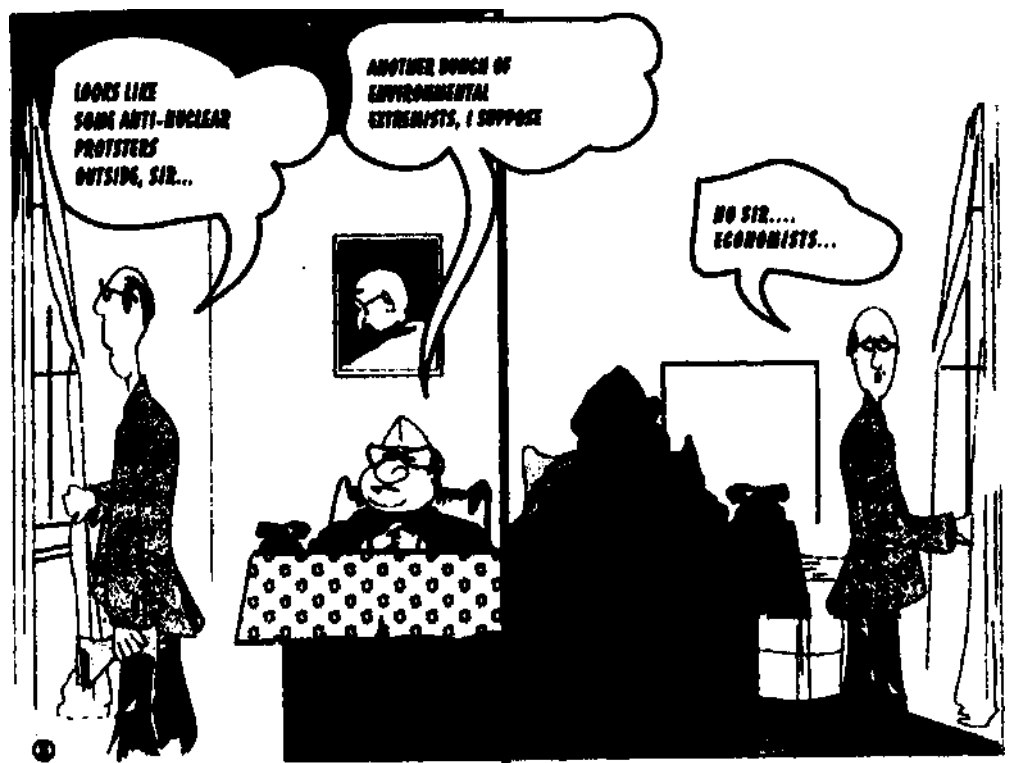
The Indian state as it exists today is like the

*"Yesterday upon the stair  
I met a man who wasn't there  
He wasn't there again today,  
I wish to God he'd go away."*

oppressively absent presence of the 'man on the stair' in the anonymous doggerel.

Last week when the hills of Garhwal were a blazing inferno, a correspondent for this newspaper who was covering the catastrophe tried to find a public call office to telephone her report in to Delhi. She was unable to find a single PCO in that area; telecommunications as an instrument of the zero tolerance-zero performance state simply do not exist in that part of the country. But the ground in the remote forest was littered with plastic bags; a tiny shop in a village without electricity stocked bottles of Pepsi and Mirinda. The zero control state had yet to reach the village; but in the vacuum, the market had set up shop.

*Jug Suraiya  
Sanghamitra Chakraborty  
Times of India 11th May 1999*



## Study Finds Radioactive Particles May Be More Damaging than Expected

Cells may be more sensitive to genetic damage caused by radiation from radon gas than previously believed, according to research that found high energy particles do not need to hit the nucleus of a cell to cause DNA changes.

In a laboratory study, researchers aimed alpha particles — a decay product from radon gas — at the fluid surrounding nuclei in cells taken from a hamster, and they found that radiation could cause genetic changes.

"The prevailing view has been that in order to cause genetic damage you have to irradiate the DNA directly in the cell nucleus," said Gerhard Randers-Pehrson of Columbia University, a co-author of the study in the Proceedings of the National Academy of Sciences. "What we find is that you can irradiate outside of the nucleus and still cause that type of damage."

Radon gas can leak from the earth and collect in basements. When inhaled, the gas can leave in the lungs alpha particles that emit low levels of radiation over long periods of time. Just how much radon poses a health risk has been controversial, but the Environmental Protection Agency recommends that the concentration of radon gas in homes be kept below 4 picocuries (a measure of radiation) per liter of air. Radon cancer risk estimates have been based, in part, on the belief that mutations that can lead to cancer occur only if radiation particles directly hit the cell nucleus that contains the DNA.

In the new study, Randers-Pehrson and his colleagues used a machine to zap cytoplasm, the part of the cell outside of the nucleus, with precise numbers of alpha particles. The number of particles is representative of the intensity of radiation exposure. They found that cytoplasm hits of three to eight particles could trigger a genetic change in a cell. Randers-Pehrson said they also found that when the cytoplasm was hit, the cells tended to survive and were more likely to pass mutations into new generations of cells, a critical step in the formation of cancer. Alpha particles striking the DNA directly tends to cause such extensive damage that the cell is generally killed and does not make new cells, he said.

*Source: Associated Press 26.4,'99*

# Nuclear Power's Bright Future is Already Past

Two decades after the world's first major nuclear accident at Three Mile Island, the nuclear industry is experiencing a meltdown of historic proportions. After growing more than 700 percent in the 1970s, and 140 percent in the 1980s, nuclear generating capacity has increased less than 5 percent during the 1990s so far. In the last decade, nuclear power has gone from being the world's fastest growing energy source to its slowest, trailing well behind oil and even coal. In 1998, world nuclear generating capacity fell by 175 megawatts.

At the 20th anniversary of the Three Mile Island accident on March 28, global nuclear capacity stands at 343,086 megawatts, providing just under 17 percent of the world's electricity. Both of these figures will likely turn out to be close to the all-time historical peak—and less than one-tenth the 4,500,000 megawatts that the International Atomic Energy Agency predicted back in 1974. The WorldWatch Institute projects that global nuclear capacity will begin a sustained decline by 2002 at the latest, and the U.S. Department of Energy projects that it will fall by half in the next two decades.

Nuclear power's biggest problems are economic: it is simply no longer competitive with other, newer forms of power generation. The final 20 U.S. reactors cost \$3 to \$4 billion to build, or some \$3,000 to \$4,000 per kilowatt of capacity. By contrast, new gas-fired combined cycle plants using the latest jet engine technology cost \$400-\$600 per kilowatt, and wind turbines are being installed at less than \$ 1,000 per kilowatt.

Even France, which gets more than three-quarters of its electricity from nuclear power, now has a moratorium on nuclear plant construction, and other European countries are debating how quickly to shut their plants down. The only countries still building nuclear power plants are nations such as China, Japan, and possibly India, where the electric power industry is still a government sanctioned monopoly that is protected from competition.

By the end of 1998, 429 nuclear reactors were operating worldwide, one less than five years earlier. Construction is taking place at 33 new reactors. Of these, seven are likely to be completed by the year 2001, while another fourteen may never be completed. Although global capacity is likely to rise for another year or two, it will almost certainly decline precipitously in the following years as the construction pipeline dries up, and the closure of older, uneconomic, or unsafe reactors accelerates.

In the aftermath of the 1979 Three Mile Island accident, the U.S. nuclear market was the first to deteriorate. No new nuclear plants have been ordered since then, and where nuclear generating capacity is now lower than it was a decade ago. Not only have U.S. power companies stopped building nuclear power plants, they have closed six reactors since 1996 that had become too expensive to operate. Meanwhile, seven of Canada's 21 reactors have been "laid up" due to safety concerns and are unlikely to operate again.

For North American nuclear power, though, the worst may be yet to come. Wall Street analysts and the Washington International Energy Group project that as many as one-third of US and Canadian reactors are vulnerable to shut down in the next five years. The main reason is cost: nuclear energy cannot compete in increasingly competitive power markets.

Western Europe stayed with its nuclear expansion plans longer than the U.S. did, but since the 1986 explosion at Chernobyl sent a cloud of radioactive dust across Europe, the public has turned against nuclear power. Since then, construction has started on only three new reactors. France, long known as the most pro-nuclear country, now has a moratorium on nuclear plant construction, and the Environment Minister, Dominique Voynet, has called for mak-

ing the ban permanent. A December 1998 poll found that only 7 percent of French citizens thought that nuclear power should be the top energy priority, compared to more than 60 percent who said the priority is renewable energy. The state owned utility, Electricite de France, which has in the past put virtually all its efforts into nuclear power, has begun to invest in "pintsize" microturbines, and in the development of wind power, both in France and in Morocco.

In Germany, the discussion is not over whether to build more nuclear plants, but on how quickly to shut down the existing reactors. While the previous German government shut down all the nuclear power plants in eastern Germany, the Social Democrat/Green government elected in October 1998 plans to phase out the 19 remaining reactors that produce 30 percent of the country's power. As of February 1999, the Government had agreed that the first reactor will be closed by 2002, though the country's electric utilities are still fighting the plan.

Asia remains the last stronghold for the nuclear power industry, with 88 reactors operating and 26 under construction, though even there, a slowdown is evident. Japan, which obtains 35 percent of its electricity from the atom, only has two reactors under construction, with work starting on one of them in 1998. In fact, the plant at Higashidori in Aomori was the first new one approved in ten years. Greens groups have nearly stopped construction of new plants, and some communities have passed referenda prohibiting additional units. Although the government plans to add some 20 new reactors by 2010, officials acknowledge privately that the plans are unrealistic. South Korea, meanwhile, has six additional plants still under construction, but there too, the nuclear industry faces growing public opposition.

Nuclear power plants are dangerous. They are also extremely dirty. But what has killed nuclear power all over the world is the fact that the electricity produced by it is just too expensive and cannot compete in the marketplace. It is only bureaucrats wasting public funds who continue to order new nuclear power plants.

China has the world's most ambitious nuclear program today, with plans to go from the three reactors it operates now to more than 50 reactors by the year 2020. The country currently has six reactors under construction, with plans to add four more. Whether the Chinese government will achieve these ambitious aims is uncertain, given the high foreign exchange requirements of imported reactors and the lack of a sizable indigenous industry. Moreover, China is likely to face growing pressure to make its power industry more competitive, which would likely complicate nuclear development efforts. Efforts to develop nuclear industries in Indonesia, Thailand, and Vietnam have all been abandoned in the last few years.

Around the world, it is nuclear power's high cost that has most damaged its market prospects. Most nuclear power plants have been built by monopoly utilities, and the costs were passed through to consumers, regardless of how high they were. But with governments around the world now opening electric power markets to the winds of competition for the first time, nuclear power must stand on its own. This development is the final blow to the nuclear industry. It is only in the few remaining protected power markets—mainly in the Far East—that any additional plants are being ordered.

One indication of nuclear power's economic status is the price it has been commanding on the open market. The Pilgrim plant in Massachusetts was sold for \$80 million, though \$67 million of that was for fuel. Also last year, CBS decided to sell what was once the world's largest nuclear company, Westinghouse Nuclear. The company sold for just \$ 1.2 billion. By contrast, Exxon is valued at \$172 billion, and Microsoft at \$278 billion.

Orders for new reactors have largely dried up. The few remaining nuclear companies, including France's Framatome and Germany's Siemens, are surviving on maintenance work, and government-sponsored contracts to refurbish Eastern Europe's decrepit reactors. If new business

does not turn up soon, there may be little nuclear construction capacity left. In light of the long lead times in nuclear construction, the decline of nuclear power in the early decades of the new century has become virtually inevitable. The U.S. Department of Energy, successor-agency to the U.S. Atomic Energy Commission, now projects a sharp decline in nuclear power generation in the next two decades.

Nuclear industry supporters argue that given recently heightened concern about fossil fuel-induced climate change, the timing is tragically ironic. Existing nuclear plants do displace the emission of large quantities of greenhouse gases from coal-fired plants, but few governments are seriously considering nuclear power as an alternative to fossil fuels.

Instead, they have responded to climate change by investing in new energy technologies such as solar energy and wind power. As a result, renewable energy sources are now expanding rapidly. Last year, while nuclear capacity fell, wind power capacity rose by 2,100 megawatts. These provide tiny amounts of power today, but are already growing at the kind of double-digit rates that nuclear power enjoyed in the 1970s. And the new technologies are not threatened by the kind of physical or economic meltdowns that have done in the nuclear power industry.

*Christopher Flavin & Nicolas Lenssen*  
*Source: Worldwatch website at*  
*([www.worldwatch.org](http://www.worldwatch.org))*

# Fighting the Powers in Koodankulam

S. P Udayakumar

There seems to be an uneasy lull in Koodankulam. Newcomers attract immediate attention at the Village Square. And talking about the impending nuclear power project pulls a real crowd. There is an ardent fervour in the crowd to pour out their hearts, and an intense anxiety to know about their future.

Most people who engage in conversation are still bitter about the Indian government's land acquisition process for the nuclear power project. They complain that an inadequate amount of Rs. 2,000 was given per acre and a meagre additional amount of Rs. 100 was paid for each cashew tree on the land. Many of these people had tamarind trees on their lands that used to fetch them approximately Rs. 2,000 every year. The lands were taken in the 1980's, and for many people these lands were the only assets their families had.

Many residents of Koodankulam acknowledge that they did not know what the nuclear power project was all about and had very little knowledge about radiation hazards. Some were sincerely hopeful of swapping lands for jobs in the lucrative central government sector. Now they are slowly waking up to the reality that not only the jobs and better life are elusive but they could also be evicted out of the area. Most of them are justifiably concerned about the risks and dangers involved in the nuclear power plants.

There are, of course, people in Koodankulam who support the nuclear power project and are very enthusiastic about it. Interestingly enough, many of them have an eye on winning a contract to provide manual labourers and supplies for the construction of the plants and buildings or to undertake portions of the construction itself. The tension between these ambitious entrepreneurs and the anxious landless is very much visible.

Then there is a third group that boasts sanctimoniously with an "I-told-you-so" rhetoric. They claim that they had warned their fellow villagers to be careful about selling their land to the government. They say they knew that nothing good would come to them out of the whole project. And now it is too late to do anything.

As a result of all these divisions and confusions, civic courage gives way to superstitious beliefs and resignation. These 'believers' point out that Rajiv Gandhi, who signed the deal with the Soviet Union to establish the project was killed later and that Deve Gowda, who revived the project lost power immediately thereafter. These are enough indications for them that the nuclear project will never come up in Koodankulam.

Unlike the confused and the contended, there are some individuals and small groups in Koodankulam that engage in active opposition to the nuclear power project. Mr. Thangathurai Swami, who manages his family's ancestral Narayanaswami temple on his family land that lies inside the Koodankulam project compound, steadfastly refuses to sell his land to the government. As he puts it, "I cannot sell my God and the temple." Devotees from Koodankulam and all the neighbouring villages do come and attend the traditional Sunday worships.

Another Mr. Muthukumaraswamy, a retired schoolteacher from Koodankulam, is also resisting the government's usurpation of his land by filing a suit in the Tirunelveli district courts. Besides pointing out the problems due to the inadequate monetary compensation paid by the government for the lands, Mr. Muthukumaraswami also cites the Government Orders that farming land and burial grounds should not be taken for this kind of large industrial initiatives.

There is also a dormant group called 'Nuclear Power Opposition Group' in Koodankulam but the major activity is just publishing some occasional handbills. The tea-stall discussions and village square debates often do not amount to much.

If Koodankulam is this indecisive, the surrounding villages and towns are not doing any better. There is a plethora of social service organisations in neighbouring villages such as Thisayanvilai, Meignanapuram, Nanguneri, and other places in Kanyakumari, Tirunelveli, Thoothukudi and Madurai districts.

In Kanyakumari district for instance, the Social Action Movement (SAM), an umbrella organisation comprising of some social work agencies, carries out some awareness raising campaigns on the Koodankulam issue. Just like Mr. D. Mathias of SAM, Rev. Y. David of the Samathuva Samuthaya Iyakkam (SSI), loosely translated as Social Equality Movement, has also been educating the public about the dangers of nuclear power projects since 1988. Quite a few organisations that concentrate on an assortment of social issues also discuss the Koodankulam project. The Palmyrah Workers' Development Society (PWDS) of Dr Samuel Amirtham, the Peace Association for Social Action (PASA) of Dr. Gnana Robinson and other such organisations take interest in the nuclear power project issue.

An important actor in the anti-Koodankulam mobilisation is the National Alliance of Peoples' Movements (NAPM), that works in close association with many farmers' unions, fishworkers' groups, and the local chapters of the National Fishworkers Forum (NFF), and the Tamil Nadu Fishworkers Union (TNFU). The NAPM conducts periodic seminars and occasional workshops on various issues including the nuclear project. Recently the NAPM or-

ganised workshops in Madurai, Tirunelveli and Nagercoil on the safety aspects of the VVER light-water reactors that are going to be installed in Koodankulam.

Although fears of radioactive contamination figure prominently in many of these groups' campaigns and pamphlets, environmental dangers, health risks, nuclear waste disposal issues are also often raised. The impending diversion of Pechipparai dam water for the Koodankulam nuclear power project is also causing grave concern among the farmers of Kanyakumari district and adjacent areas.

Another popular issue that political parties often resort to is providing job opportunities for the people of Koodankulam. On February 9, 1999, the local Tamil Manila Congress MLA, Mr. Appavu, headed a dharna in Koodankulam with the singular demand of giving job opportunities to the people of his constituency that includes Koodankulam and other nearby villages.

One can also encounter handbills and pamphlets put out by many nameless and faceless groups such as 'All College Students' Federation,' and 'Koodankulam Nuclear Reactor Opposition Group' etc. Although the English press publish articles by prominent writers and thinkers such as Buddhi Kota Subbarao, S. Ambirajan, Prema Nandakumar, G. Balamohanan Thampi, Dhirendra Sharma, T. Shivaji Rao, and Iravatham Mahadevan arguing persuasively against the Koodankulam project, the local Tamil newspapers are strangely indifferent.

Despite the fact that all these social, political and intellectual entities are sounding alarms, they are relatively dispersed and dissimilar. The various social movements have not made many inroads in educating the public, or making a dent in the policy-making processes. The ideological and organisational discordance among some of these groups and leaders, financial issues, the insistence on one's own group getting the limelight are some of the handicaps they seem to have. There are also groups that

do not want to jeopardise their government funding by being too much proactive on the Koodankulam issue.

Some of the anti-Koodankulam movements adopt a narrow 'not-in-my-backyard' approach. They just do not want a nuclear power project in their vicinity and do not care what happens next or where it is moved. However, some other groups take a principled stand and adopt a broader approach on the issue by stretching their interest to other nuclear power projects such as Kalpakkam near Chennai. They highlight the disastrous effects of the Kalpakkam reactors on the neighbouring coastal areas and the fishworkers' livelihood in those villages, and demand either closure of the plants or specific modifications.

Some of the nuclear power project denunciations betray anti-urban and anti-elite sentiments also. One such argument proposes that nuclear power projects should be built in or around the national and state capitals because that is where the elite lives and work. The proponents of this plan wonder why the Nuclear Power Corporation (NPC) office is situated in Nagercoil instead of Koodankulam itself. They question why the Prime Minister visited Pokhran not on the same day of the nuclear tests but almost after a month. The implied contention is, of course, that the elite knows how to take care of themselves and safeguard their interests by being away and insulated from these potentially dangerous projects. It is the poor who bear the brunt of all these projects and pay the heavy price.

Many people in and around Koodankulam think that the government will go ahead and establish the nuclear power project in Koodankulam and will eventually close it down if and when there is an accident. Dr. S. Thasan, a retired Tamil Professor of Marthandam Christian College, reasons that it is the general trend of our times that people ignore advice and warnings but feel sorry and make amends when disasters strike.

The Indian government is turning a deaf ear to local concerns and protests, and pressing ahead with the project. Dr. Rama Rao, Chairman of the Atomic Energy Regulatory Board, claimed in November 1998 that the site evaluation for Koodankulam had been done (*The Hindu*, November 6, 1998). A former member of the 'safety committee' constituted by the Central Government for the Koodankulam project claimed in April 1997 that the environmental issues had already been studied (*The Hindu*, April 7, 1997). Intriguingly enough, government officials rarely mention this environmental impact study on the project, and individual efforts to get a copy of this study from New Delhi authorities have proved to be futile.

In the meantime, the Indian nuclear establishment has been organising workshops and seminars to mobilise the public opinion in favour of the Koodankulam project. A two-day workshop in July 1998 on "Atoms in the Service of Mankind" sought to educate school teachers about the various aspects of the country's nuclear program and other current issues such as CTBT and NPT (*The Hindu*, July 25, 1998).

In a November 1998 seminar attended by the representatives of the Russian and Indian nuclear departments and academics, the Indian nuclear authorities revealed the entire structural and safety details of the VVER reactors. At the Indo-Russian seminar, Mr. Bulat Nigmatullin, Deputy Nuclear Energy Minister of Russia, said: "It [the seminar] is intended to inform the Indian public at large, mass-media bodies, independent experts and other possible seminar participants about Russian know-how and our many-year-old positive experience of operating and maintaining NPPs in the fullest possible and most objective manner. We also plan to inform them about other aspects of building, operating and maintaining nuclear power facilities in Russia and other countries, linking this with the projected Koodankulam NPP" (*The Hindu*, November 6, 1998).



Furthermore, the Department of Atomic Energy has established a Homi Bhabha Chair for Nuclear Science and Rural Society at the M. S. Swaminathan Research Foundation (MSSRF). Chennai, with the primary objective of disseminating information and mobilising peaceful usage of nuclear energy for the benefit of communities living in the regions adjoining the nuclear power plants (The Hindu, December 11, 1998). If anyone from Koodankulam or surrounding villages were invited to any of these rather technical events could not be independently verified.

The lack of coherence and focus among the various movements on Koodankulam is painfully obvious when we consider the fact that some of these latest developments are not widely discussed. Another pertinent issue that has been overlooked by the Koodankulam movements is the handling of the spent fuel.

According to Dr. Y. S. R. Prasad, Chairman of the Nuclear Power Corporation, the fuel for Koodankulam reactors would be supplied by Russia, but the spent fuel would not be sent back. It may be re-processed to extract Plutonium, a key fuel for the fast-breeder projects that will be established in India in the future. When asked if a reprocessing plant would be set up at Koodankulam, Dr. Prasad said that it was too early to think about that (The Hindu, November 5, 1998). There is hardly any debate on the implications of this ambiguity, the additional dangers of this reprocessing plant, the added risks the local people face and so forth. No one is questioning if the local people do not have a say in this issue.

Most importantly, the various Koodankulam movements hardly debate the alternatives to nuclear power in the larger framework of national development. It is quite ironic that numerous windmills that produce electricity quite profitably surround the proposed site in Koodankulam for nuclear power project. The viability and rewards of such renewable energy systems are also not highlighted by the protest movements. *Continued on page 13*

## Russia, rolling in money, offers \$2.6 Billion loan for Koodankulam

The Russian government has offered a soft loan of \$2.6 billion for the abstraction of the Koodankulam nuclear power plant in Tamil Nadu, according to a report here. Russia's state-owned Vneshekonombank has sent a message to the Indian government proposing the loan to supply the two 1,000 M W light water reactors for construction of the power plant. Itar-Tass reported.

Russia's economic crisis notwithstanding, the credit has finally been offered for the implementation of the nuclear project that for many years was the centre of a controversy involving the U.S., Russia and India. Russia made up its mind to go ahead in keeping its commitment to the Indian government in spite of American opposition. Moscow and New Delhi signed a new supplement to their agreement of 1988, during the Soviet era, working out the payment terms.

The credit offer sets the stage for the execution of the project, which is being handled primarily by Atomstroiekspport, the organisation that fulfils Russia's commitments in building nuclear power plants abroad, and the Indian nuclear energy establishment. The project involves more than 200 Russian organisations and enterprises.

"Russia will issue to India a credit for construction of the nuclear power plant at Koodankulam in hard currency and only ten per cent of the total costs of the construction work will be financed through rupees generated out of Indian debts to the former Soviet Union." Itar-Tass reported, quoting Russian Ambassador to India Albert Chernyshev.

Russian specialists would mount the main assemblies in the primary circuits of the reactor and monitor the installation of the power-generating units at the plant. According to the terms of the agreement, the Indian specialists would undergo advanced training in Russia. All the building operations of the plant, whose commissioning is expected to take six to seven years, would be monitored by the Vienna-based International Atomic Energy Agency (IAEA). *India Abroad News Service*

## Impoverished Russia willing to sell land to raise funds to pay back wages of nuclear employees

US company Non-Proliferation Trust Inc is necking approval to take tide to at least 6000 tonnes of spent fuel from countries such as Taiwan, South Korea and Switzerland and ship it to Russia for storage for at least 40 years. The proceeds of the venture expected to be at least US\$4 billion - would go towards the disposal of 501 of excess Russian warhead plutonium, cleaning up contaminated nuclear sites in Russia, paying back wages of Minatom employees, and helping Russian pensioners and orphans. The company had originally proposed a cradle-to-grave fuel leasing scheme with storage at Wake Island in the Pacific Ocean. *Uranium Institute News Summary*

# WININ PEREIRA 1928-1999

Winin Pereira, died on February 5th. He had lived in Bandra. Here he was able to trace his Catholic heritage for the last three hundred years. Until the previous generation, the family had spoken Portuguese, even though Bombay had been 'given' to Britain as part of the dowry of Catherine of Braganza in 1661. Winin Pereira's father was a social reformer and committed to India's Freedom Movement.

Winin Pereira trained as an atomic physicist, and worked at the Tata Institute of Fundamental Research and with Homi Bhabha at the Atomic Energy Establishment. Increasingly perturbed by the danger posed by India's uncritical assimilation of Western science and technology, he resigned. This was regarded by the Indian establishment as a betrayal, and he was never to be officially employed again. He turned to development projects in Maharashtra, associated with a number of agencies; but soon became aware of the negative consequences of the received wisdom, including the promotion of chemical fertilisers and pesticides, cross-bred cattle and hybrid seeds. In consequence, he turned away from the conventional developmental path, and spent more and more time in an Adivasi area. He had a small farm in Alonde, where he was happiest, learning from those who had lived symbolically with the forests for millennia without disturbing the ecological balance of the land, of which they regarded their own lives as an extension and an expression.

He began to collect examples of truly sustainable agriculture; and amassed a formidable reserve of knowledge of how things had been done, and how these continued to reverberate in popular memory. Having inherited his father's distaste for colonialism, he was acutely aware of the continuities between the British Raj and the Raj of the IMF/World Bank/transnational which have now replaced it. This, he felt,

was made explicit after the Indian government formally embraced the liberalisation programme of 1991. He got out of the projects he was engaged on, and at his home in Bandra, set up the Centre for Holistic Studies. This was devoted to an analysis of the impact of 500 years of colonialism, and to the recovery of alternative, indigenous social and economic values. He turned to traditional Indian culture, respect for all things, living and non-living, the doctrine of ahimsa and minimal interference in nature. The Centre became a resource-centre and library with extensive databases. It offered support, information and encouragement to peoples' movements fighting unjust development, most recently, to those farmers resisting the Dabhol power project in Maharashtra. I met Winin in the mid-eighties: it was, for him a lean time. India was more and more committed to industrialism, consumerism seemed to have seized the imagination of the growing middle class, and few people were interested in recuperating what at that time appeared to be decaying traditions of frugality, self-reliance and the kind of modest security which the Adivasis had practised, and Gandhi had advocated. At that time, he felt isolated and disillusioned.

The first time I met him he sat opposite me, as the sunlight, reflected from the Arabian Sea, played in the room, kept cool by the creepers and fish-tail palms that had been planted around the plain house in Carter Road. I immediately recognised someone with whose sensibility and heart there was the kind of sympathy that requires no explanations • those rare encounters of the spirit that give new meaning and hope to our lives.

He invited me to stay with him and his family; and without hesitation I accepted. It was a kind of homecoming, this meeting of strangers who, through quite different social and cultural experiences had

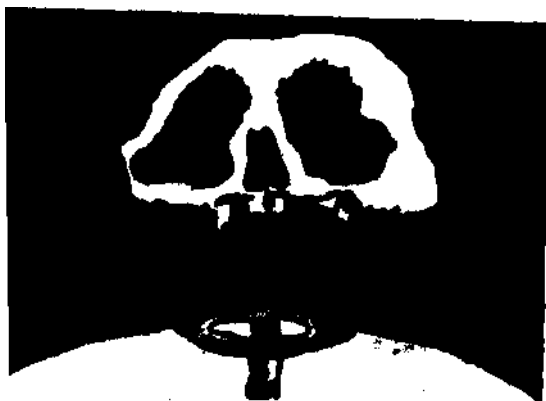
reached a common understanding. We worked together and I was instrumental in getting some of his work published. His first book, *Asking the Earth*, appeared in 1990. From him I learned much about India, its colonial history, the destructiveness of an invasive culture of consumerism in a country where the basic needs of more than 40 per cent of the people remain unanswered. Above all, he taught that social justice and respect for the environment are indivisible. If one takes precedence over the other, we fall into, either the uncritical acceptance by Marxists for industrialism, or into the error of a deep ecology which is prepared to save the planet even if the people perish. To give equal weight to social justice and to conserving the resource-base of the earth is a very radical project indeed: for this seriously challenges the existing developmental model which requires at the same time ever more extravagant abuse of the earth and growing inequality, all under the grandiose and banner of 'wealth creation'. Winin Pereira raises issues about different measures of wealth, other forms of justice, fresh definitions of human purposes, new ideas of well-being.

Winin Pereira was himself a curious and contradictory figure. Although he wrote all the time about overcoming the crisis of industrial society, he was not a practical man. I went with him once to the little hut in Alonde. It was extraordinarily beautiful • he could name every tree, shrub and bird; but the food we had taken was eaten by rats because we had failed to secure the cupboard door. Trying to cook something out of a tin over an open fire, we dropped it and went supperless. We laughed at the paradox that we were offering prescriptions for the survival for humanity, yet could scarcely survive a single night on our own. Indeed, without the practical and loving support of his family, Winin's work could scarcely have been abstained.

In the last decade of his life he rarely left his home. He was completely uncompromising, convinced (that the existing paradigm would collapse, and that, whatever happened to the people of the West (whom he thought doomed, because of their total dispossession of survival skills by market-dependency), India would revert to traditional village self-reliant culture based upon the land and the local production of necessities. He could be intransigent at times; but was utterly incorruptible, refusing foreign funding, and maintaining a monastic dedication to his work, even though enfeebled by strokes and the onset of Parkinson's disease. He lived to see more and more people acknowledging the impossibility of the project of 'globalisation', which had overtaken the internationalism to which he was himself committed.

Although I could not entirely share his apocalyptic view, nor regard the prospect of collapse of industrial society with the equanimity with which he viewed it. I came to love and respect him. He was a passionate man, ultimately optimistic, despite a certain melancholy. His was a search for just, sustainable and practical forms of development, justice for all those living now and for an indefinite number of future generations. He celebrated people's knowledge, and what he called 'liberation technology' over Western science, and if to some he appeared backward-looking, this was only in order to bring to the future some of the wisdom of the past that was being wiped out by a barren industrialism that only conjured new poverties out of the very wealth that was supposed to emancipate humanity.

*Jeremy Seabrook 3 Springfield Avenue  
Muswell Hill London N10 3SU 19*



October / November 1998

# The Heat Is On

## Koodankulam and Climate Change

*V T Padmanabhan*

After the Pokhran explosions, the fund starved atomic energy programme in India has received a new lease of life. Work on the third and fourth power stations at Tarapur and Rawatbhatta has started. The Russian turnkey project for setting up two 1000 Mwe pressurised water reactors (PWRs) at Koodankulam on the South East Coast has also been revived. In terms of installed capacity the Koodankulam site will be more than that of all the 8 plants operating in four states in India. All further expansions of nuclear power in the country need be hailed, because of the well-known safety and economic problems.

Two of the three proposed sites, Koodankulam on the East Coast and Tarapur on the west coast have serious safety problems, related to global warming, rise in sea level and the cyclones and floods. This risk has not been part of the debate on nuclear safety in India.

In 1995, the Intergovernmental Panel on Climatic Change (IPCC), a UN body made up of 2,500 scientists concluded that "a pattern on climatic response to human activities is identifiable in the climatological record", this human (rather inhuman) being the burning of fossil fuels and clearance of forests, which cause an increase in the concentration of carbon dioxide (CO<sub>2</sub>) in the atmosphere. The current emission of CO<sub>2</sub> is estimated at 7.5 billion tonnes a year, of which fossil fuel is responsible for about 6 billion tonnes. In spite of the pious fectionation at Rio-de-Janeiro, the emission rate is increasing alarmingly, thanks to the intransigent position by US and lobbying work by the petromafia.

If the current trend continues, within about 15 years, major calamities can be expected on the coastal areas. According

to IPCC projection of 1995, between 1990 and 2000 AD, global temperature will rise by 1.0 to 3.5 degrees Celsius (1.8 to 6.3 degrees Fahrenheit). Global average temperature was just 3 to 5 degrees C cooler during the last ice age than it is today. A warmer atmosphere and warmer sea results in greater exchange of energy which leads to (tropical) storms, tornadoes, thunderstorms and hailstorms. The projected increase in temperatures could increase the destructive potential of hurricanes by 50%. Storm winds as high as 350 kms per hour will not be unusual. The recent increase in the frequency and the destructive power of natural calamities experienced in India and globally has been linked to the climatic change.

While the causes of warming are global and its prevention depends upon the activities of the global governments, its impact will be felt by local communities, in other words, even if the national government is helpless in reducing the global emission, protection of the areas under threat and measures to reduce the damage is well within the role of the national government. Global climatic changes do not appear to have figured in the agenda of the planners in India.

Work on Koodankulam project is expected to commence in 2000 AD. The project might be ready in another ten to fifteen years. If commissioned in 2010 AD, the plants are expected to generate electricity for the next 30 years. After its useful economic life, the reactors will stand there for another 100 years, which means, decommissioning will be complete in 2140 only.

# Koodankulam Safety Issues

## Don't Rush in Where Others Fear to Tread

During one year of its operation, VVER 1000 reactors will consume 60 tonnes of uranium, enriched to 3.5%. About 2 tonnes of U235 in the fuel bundle will be burnt (fissioned) in a year, leaving 58 tonnes of highly radioactive spent fuel, which will have plutonium, uranium and tens of fission and activation products. After removing from the reactor core, the spent fuel will be kept in a cooling pond for over a year. This will contain long-lived and highly radioactive elements. There will be about a tonne of plutonium, the raw material for bombs. Spent fuel is either reprocessed for extracting plutonium and unburned uranium or kept under surveillance till disposal methods are evolved.

As per the agreement, the spent fuel will be transported to Russia. This is very unlikely due to the increasing opposition to such shipments. Moreover, with a huge stockpile of fissionable material, Russia will not be very keen on taking back the dirty cargo. This means that at the end of their active life of 30 years, there will be over 1700 tonnes of spent fuel at Koodankulam. A serious damage to the reactor structures due to flood and cyclone will lead to a radiological emergency of much greater impact than Chernobyl. If the incidence occurs when the reactors are on-line, the Chernobyl history will be repeated. The intense pollution of the marine ecosystem will be an additional feature.

The climatic catastrophe is equally applicable to other projects involving hazardous products. Nuclear plants stand out as a distinct class, because of the lethality and long life of the radionuclides involved. All construction work at the coastal stations has to be frozen until the ultimate safety of the structures is ensured. In the case of existing installations, detailed independent studies of the possible hazards need be undertaken. Preventive and ameliorative steps like bunding and afforestation are also to be considered.

*Padmanabhan VI  
(Padmaalu@ hotmail, com)*

Dear Prime Minister,

INSAF and Vikas Adhyayan Kendra would first of all like to congratulate your government on your reported willingness to sign the CTBT. Signature of the CTBT will send an important signal to the world that India will avoid a costly and destabilising arms • race in the subcontinent whose final result could only be mutual destruction. In expressing itself as willing to sign this treaty, India has shown that it is responsible, and wishes to avoid the unthinkable.

INSAF is writing to you with the utmost respect, to express our concern over some aspects of the safety of the nuclear power plant project at Koodankulam.

The NPC has reassured us repeatedly that the design of plant chosen is 'completely safe'. According to Mr. S. K. Jain, chief engineer of the Koodankulam project, the Russian reactors are 'extremely safe' and have 'many significant safety enhancement features'.

According to a document given out by the NPC in Nagercoil. 'The design features for the proposed Koodankulam plants have been extensively negotiated. These include: ? The reactor shall meet all regulatory requirements of India and its designs have to be licensed by our independent regulatory body. ? The plant shall be capable of operating with high performance, reliably, and safely within Indian grid condition. ? It should have the latest design features and meet the latest international safety requirements.

It may indeed be the case that the VVER-1000/392 reactor design that has been chosen has some advantages over some western-style reactors, and it is indeed true that the VVER type reactor is not the same as the Chernobyl type RBMK design.

However, it is also the case that the VVER-1000 reactor design in general has quite specific safety problems which Mr. Jain's reassurances do nothing to clear up, while the specific variant of the VVER 1000 design that has been chosen, the VVER1000/392 design, will be the first of its type anywhere in the world.

This means that India will be building two of a completely untried reactor design.

The VVER-1000/392 reactor design is based on the VVER-1000/320 reactor design, which has many operating reactors in Russia and Eastern Europe. A variety of problems have arisen with attempts to complete and upgrade these reactors to so-called 'western' nuclear safety standards. While the commitment by the NPC to the latest international design standards is laudable, NPC makes no reference to the problems with the VVER320 model which have been indicated in IAEA documentation, especially with reference to the R4K2 plants.

These problems are set out by the International Atomic Energy Agency in a publication known as the 'Issues Book'. According to the Issues Book, these problems are the following:

The possibility that the steel reactor pressure vessel may become brittle, due to the effect of neutron bombardment of the steel. This would make it possible for the vessel to crack open violently during an emergency. This would probably (according to safety analyses by the US-DOE) propel the head of the pressure vessel out through the containment roof, causing a major radioecological catastrophe. The government, when the detailed project report is done, needs to ask very detailed and searching questions about steel composition, neutron flux, and RPV integrity.

The possibility that control rods may fail to insert properly during an emergency. This has already occurred at a number of VVER-1000 plants in Russia and Eastern Europe, as well as in French PWR plants. In many plants in France, costly replacement of the entire control rod mechanism has had to take place. Failure of the control rods to insert during an emergency is a serious failure, akin to having no brakes on a car.

The possibility that small tubes in the plants steam-generators may fail, leading to uncontrollable leakage of very highly pressurised and radioactive primary coolant into the low-pressure secondary system. This can lead to a loss of coolant accident with subsequent core meltdown if it is large, as well as causing damage to other parts of the plant.

- Problems with instrumentation and control systems and with properly integrating Western (presumably Siemens) control systems and Russian components, which have proven very difficult at the Temelin plant in Czech Republic.

- Problems with the detailed plant layout that have resulted in there being a particular spot in the plant where main steam-lines cross with important emergency systems. A main steam-line break such as might be caused by a big primary to secondary leak, can here result in the main steam line rupturing, and in turn destroying other essential safety systems. It is essential that when the DPR for Koodankulam is done that this issue of design be tackled.

I have outlined a series of specific issues that pertain to WER-1000 safety. It does not follow from this that only WER-1000 reactors or even only Russian reactors have these kinds of safety problems. These are in many cases problems that have been recognised for many years in Western (US, French and German) reactor designs also. It is simply the case that safety issues of one sort or another are inherent in ALL nuclear technology, and all reactor designs.

Nonetheless, it is worth asking why: (a) The VVER-440 reactor design, which in Finland and Hungary, has performed far more reliably than has the VVER-1000 and whose steam-generators in particular have operated much better, was not chosen over the VVER-1000 design which has always had problems, (b) Why the Russian design for an 'inherently safe' reactor, the VPBER-650 design was not chosen.

Both these designs would have had much better operating and safety characteristics than the VVER-1000 design chosen, and the VVER-440 design was for some time under serious consideration by India.

Many of the specific design and safety issues involved are issues, which must be tackled during the process of detailed design and safety review. Presumably they will be tackled during the detailed project report.

It is therefore critical that the detailed project report be a public document, and that it be subjected to a process of formal public review,

Finally, the question must be posed as to whether any nuclear reactor development of this kind is in the interests of the Indian people. Analysis after analysis has shown that this type of development creates no benefits whatsoever for the poorer classes, and that it is also neither the way to prevent the greenhouse problem nor the way to provide energy: even electrical energy. Nuclear power, whether from Russia, the US, France, Germany or Japan, or India, is quite simply the most dangerous and expensive way to produce electrical power that has ever been devised.

INSAF is concerned that expenditure of the colossal sum of \$3 billion US. on two 1000Mw nuclear plants is an entirely inappropriate expenditure. INSAF believes that nuclear power is not an appropriate solution to the energy problems of either Tamil Nadu in particular nor of India in general. We have deep reservations concerning the whole emphasis, which is be-

ing given both to Koodankulam and to the entire nuclear program in this country, and are convinced that far from solving our energy problems it will worsen them and divert resources that could be used in more socially useful ways.

We call on you to take most seriously the safety problems mentioned above. Please conduct a public review of the entire project with a view to determining whether or not it is truly in the interests of the people of India.

Finally we call on you to cancel the entire project forthwith if the above cannot be done, and if the safety problems associated with the project cannot be solved within a reasonable cost envelope.

WW

Vikas Adhvayan Kendniu

*Fighting the powers...*

*continued from page 9*

It is true that the southern districts of Tamil Nadu are industrially backward and they could use some economic boost. But what are the concerned people's interests? Do they want to industrialise at the cost of traditional agriculture? Are they interested in a modern 'big bang' solution for the intractable problem of underdevelopment? There is a troubling silence on these issues.

In the final analysis, this unorganised fight against the nuclear power project in Koodankulam is by no means a powerful fight. At least not yet!

*S. P. Udayakumar who works as a Research Associate and Co-Director of Programs at the Institute on Race and Poverty, University of Minnesota, founded the 'Group for Peaceful Indian Ocean' in 1988 which sought to educate the public opinion against, among other issues, nuclear weapons and power. Udayakumar is from Nagercoil and visits his family often. He can be contacted through email ([spkumar@to.umn.edu](mailto:spkumar@to.umn.edu))*

*The following are some of the letters*

## Dear Prime Minister, Please listen to Our Pleas

*sent by people who love India and do not want it going down the nuclear hole. They were sent before the fall of the government.*

Smedsby, Finland March 12th 1999

As a friend of Indian music and culture since my teens I am asking for your attention about something I find very important:

I have read that there are plans on building two new nuclear power plants in the south of India, next to the holy spot of Kanyakumari using VVER 1000/392 technology.

Regardless of the type of reactor you plan to use (and I understand that the VVER1000/392 has proved problematic for instance at Temelin and R4K2), I would like to point out that all nuclear power plants are dependent on technology that endangers the health of those who live not only near it, but both people and other living things around the uranium mines and other facilities necessary for producing nuclear fuel.

I feel the 3 billion US Dollars planned for this a project could be much better spent.

I would suggest using the money for environmentally clean projects instead, since there are poisonous and radioactive emissions not only from the power plants but also from the uranium mines. Also I understand there are unresolved safety issues with VVER1000 technology.

In Finland, where I come from (and also Nokia Mobile Phones!) there is a strong opposition against nuclear power, and indeed there has also been a government decision not to build any more nuclear power plants in Finland (we already have four reactors).

Sweden, the home of Volvo, Ericsson, SAS airlines etc., (and where I too lived 1979-91) also has had a government decision not to build any more nuclear power plants, but instead stop using the ones they have now.

Nuclear power has also proved so economically infeasible that there hasn't been a new nuclear power plant planned in the USA (where I suppose they are quite aware of what will and what will not generate money!) since 1974. Instead they have cancelled over 130 planned nuclear power plants, some of whose construction already had begun!

I suppose they would build more of them if it was economical? Thanks for taking your time to consider my points of view,

*Yours sincerely,*

*St Sni Steinbock,  
Sound Effects Master,  
City Theatre of Vasa, Finland 65610  
KORSHOLM FINLAND*

[stanibok@freenet.hut.fi](mailto:stanibok@freenet.hut.fi)

*March 16, 1999*

Dear Sir,

I love India and Indian people, visited India several times and even published the book "20 000 kilometres around India"

(1968). And I am strongly against Nuclear Power Plant's constructions in your great and wonderful country

Troubled Russian nuclear industry are trying to survive through construction of the Nuclear Power Plants in India and China.

I can understand willing of India to have nuclear weapons for national safety reasons, but I can't understand Indian willing to have nuclear electricity. Chernobyl and Three Mile Islands nuclear catastrophes demonstrated how it can dangerous all modern nuclear electric technologies!

You are personally, not Russian-Minatom greedy engineers will be damned Indian people after inevitable nuclear catastrophe and radioactive pollution in Koodankulam or Kanyakumari.

One important reason why USA stopped in 70's to construct their NPPs was detailed calculations of the consequences and clear understanding that NPPs there are ideal weapons for enemies or terrorists. If India don't have unfriendly neighbours or if you do not have terrorists?

Prices for solar and wind electricity now lower than for Nuclear one. All coastal Indian territories have enormous potencies for the wave's energy.

And the last, but not the least, argument : we know that it is Russian government's credit, what give Minatom money for Indian NPPs construction. Now in Russia grouting protest against these credits, and it quite possible that it will be cancelled in nearest future.

I pray to you, Sir, think out all these arguments and stop the development of Nuclear Power Plants in India.

*Professor Alexey Yablokov  
Author of the book "Nuclear Mythology" (1995,1997) Co-Chair, Program for Nuclear and Radioactive Safety of the International Socio-Ecological Union*

# Letterbox

Greetings! I am a Research Associate and Co-Director of Programs at the Institute on Race and Poverty, University of Minnesota, Minneapolis, US. I am writing to share with you my interest in the scrapping of the Koodankulam nuclear power project. In 1988 my friends and I founded the 'Group for Peaceful Indian Ocean' (GPIO) at Nagercoil and sought to educate the public opinion against, among other issues, nuclear weapons and power. The group became defunct when I came to the US in 1989 for higher studies. With the collapse of the Soviet Union, we did not think much about Koodankulam.

In June 1998 I wrote an article on the dangers that the Koodankulam project poses to the people of Kanyakumari district, and appealed to the President of India, the Chief Ministers of Tamil Nadu and Kerala, some of the Kanyakumari district legislators, and the local newspapers against the project. Quite expectedly, none of them had any time even to acknowledge the receipt of the letter. In the meantime, the National Alliance of Peoples' Movements (NAPM) and the International Physicians for the Prevention of Nuclear War (IPPNW) in Germany endorsed my call to scrap the Koodankulam project. Several individuals from various parts of India also expressed interest in the campaign against Koodankulam.

On January 9, 1999 my parents (who live in Nagercoil), Aravinda, Ravi, and Krishna of Association for India's Development (AID), and I visited the Koodankulam project site and talked to many local people. On January 11, 1999 John Hallam and Mishka of Friends of the Earth, Australia, visited Nagercoil. We all met with some local leaders who are interested in the Koodankulam issue. I left Nagercoil for Minneapolis on January 13th, and met Mr. N. Dennis, Member of Parliament from Nagercoil, by chance in Chennai, and told him the need to stop the Koodankulam project. Mr. Dennis asked me to send him more details. I have re-

cently been invited by The Hindu to write a short piece on the local peoples' movements against the Koodankulam project

In the meantime. John and Mishka have offered some three workshops on the risks of VVER reactors at Madurai, Tirunelveli and Nagercoil with the help of NAPM workers. Here is what John has written to me about the workshops: "Just a quick note to say that I held a workshop yesterday here in Madurai with Gabriella on VVER 1000 safety. Overall I would say it was pretty successful, though it may have been a bit detailed for some. It would have been ideal to take it more slowly. However, there was certainly plenty of interest in the topic! Roughly 25 people were there. While there we talked strategy a bit. Nothing canshaking was decided, except that there should be an attempt to take the issue into the parliamentary and electoral arena, and that there should be a sustained technical attack on the project- which is best done by you, Surcndra, and myself. I (lagged the possibility that the two of us may try to get an international campaign based on the technical aspect going, as we discussed. I am certainly eager to do so. I'll be doing two further workshops in Tirunelveli on Feb 6th and Nagercoil on 7th (arranged by Sister Alfie)"

Here are some ideas that cross my mind about popularizing and intensifying the Koodankulam struggle:

[1] Bringing together all those who are interested in this issue is, of course, the logical first step. We need to have local people in Kanyakumari, Tirunelveli, Thoothukudi, and other adjacent districts in Tamil Nadu, people in southern Kerala, and people in other parts of India.

(2) We can put together a mailing list and start circulating an informal short newsletter (both hardcopy and electronic copy) with some basic information on the project, latest developments, debates etc.

[3] We should ask people for ideas, suggestions and alternatives. We could have this debate for a few months and ask

people to organize in their own respective areas.

[4] Then we may collectively come up with a consolidated protest movement, a concrete action plan, specific steps to take and so forth

[5] Some of us could initiate an international campaign based on the technical aspects of the VVER reactors

[6] Our primary objective should be having the project scrapped for good and forever.

[7] Only if we fail to kick the project out of Koodankulam completely, do we turn to compromises, negotiations on safety measures, peoples' participation in this and other crucial areas, job opportunity for the local people, etc But that is NOT the objective we begin the struggle with

Please do share with me your thoughts and ideas, and I would be happy to circulate them among us all and facilitate further discussions. Also please send me the addresses (and email addresses) of yourself and people who may be interested in this issue. Time is running out for us

Looking forward to hearing from you. I send you my best personal regards and all peaceful wishes.

P. S. The July 1997 issue of Facts. Against Myths, the monthly newsletter of Vikas Adhyayan Kendra (VAK, D. I Shirdham, 62 Link Road, Malad West, Mumbai 400064, India) has so much invaluable information on nuclear power. Please contact VAK at 882-2850, 889-8662 (Phones). 889-8941 (Fax), or vak@bom3, vsnl.net.in (email) for a copy of for subscription details.

S. P. Udayakumar, Ph. D.  
Institute on Race and Poverty  
University of Minnesota  
229- 19th Avenue South Minneapolis, MN  
55455. USA  
Email: [spkumar@tc.umn.edu](mailto:spkumar@tc.umn.edu)

I am growing a little impatient about Koodankulam. But there is still lot of time I think. Because Roderigues (Kalpakam station director) has said that the construction work will start only a year later.

If we want to fight against this project, we have to get out of this local situation. 2000 MW of nuclear electricity in Tirunelveli is just not a local problem. At least, this has to be thought as a regional problem affecting T Nadu, Kerala and Srilanka. In my opinion the centre of the campaign should be Chennai. And to wake up people in Chennai, we have to inform them what a normally functioning nuclear reactor in Kalpakkam means for the people living in Madras. Secondly, besides Koodankulam, there is a 500 MW mwe fast breeder which is coming up in Kalpakkam. From a safety angle, this one is more serious than V VER 1000.

We have to do the following : Do some measurement of radionuclides in fish and other food items. We cannot afford to do it on payment. We will have to look for friends in laboratories abroad.

Conduct a health study in villages around MAPP. Part of the work can be done on a voluntary basis by Chennai based doctors. The primary investigators (women from the same villages) will have to be paid. These persons can, later on, work in the campaign, if a local group takes up the initiative.

Study, the civil liberty violations by MAPP. Police firing and death of a fisherman who was caught fishing near the plant, midnight ransacking of a village, situation of the fishermen evacuated from the present site etc are themes to be included.

Do a video film incorporating the findings of the study. For this, we have the camera, and also the cameraman.

After this, we could hold a national seminar in Madras, inviting experts from NPC as well. Besides the above issues, we should also be asking the NPC about the

measures they are going to adopt in the event of sea level rise and other problems which will come up in future.

While 10 years ago, we had the mainstream Tamil media with us. Today, almost all of them publishing pro-nuclear articles and news. Since the movement is not picking up, we should think of moving our self. One suggestion is personal meetings with writers and other prominent persons at district level. This can be done by young people, who are now on vacation. If you can locate a few such volunteers, they can undergo a short course at Vedchi and then set sail to all district headquarters. From my side, I am ready to do it in Kanyakumari, where my Tamil will work.

Padmanabhan VT  
<padmaalu@hotmail.com>



Join

**Anumukti**

***Fight for a Nuclear-Free***

## ■ Subscription Information

*Rs. 36/- per year (6 issues) (only within India)*

*U.S. \$ 15/- per year or equivalent in other currencies for airmail overseas*

*Rs. 360/ for life (only within India)*

*Demand drafts should be drawn on the State Bank of India, Valod (Code: 0531) For cheques and drafts drawn on other banks, please add Rs 10/- collection charges*

*Subscriptions, donations and enquiries regarding circulation should be addressed to:*

*Editor Anumukti  
Sampoorna Kranti Vidyalaya  
Vedchhi, 394 641 India  
Tel: 02625-20074  
Admin@Anumukti.ilbom.ernet.in*

*Anumukti Team. Hansa, Daksha, Ranjit,  
Prashant, Philips, Kalpesh, sanghamitra and  
surendra*

*Published by S.Gadekar for sampoorna Kranti  
vidyalaya*

*Publication Date: June is, 1999*

**PRINTED MATTER**