



ANUMUKTI

A Journal Devoted To Non-Nuclear India

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Charabal is a river of central India. It is one of the very few Indian rivers which flows northwards. Its awe inspiring ravines are famous. The dacoits who inhabit these ravines have left their mark on our psyche. Sometimes as romantic characters fighting the injustice of the state, but more often as particularly blood-thirsty specimens of (in)humanity.

But Chambal is a river which meanders through many different terrains. And the tale I want to tell is of a different Chambal. A river of sorrow. A polluted river bringing death and disease to her children. Tamlao, Jharjhani, Deeppura, Bankheda, Eklingpura ... are names of villages situated on or near its banks a few kilometres this way or that from the reactors of the Rajasthan Atomic Power Project. During the sixties, a number of dams were built on the Chambal creating vast man-made lakes - Gandhi Sagar, Rana Pratap Sagar, Jawahar Sagar. A number of these villages had to resettle as the waters inundated their lands. But those were days of innocence. The villagers were told and they believed fantastic tales of the bright future that awaited them in the new dawn of development. Electricity, roads, schools, hospitals, jobs for everyone...

Well, years passed. The dams got built. With all the lovely cooling water around, nuclear power plants soon arrived. High tech progress took these poor folk by their hands and led them to the promised land.

But what did they find there after seventeen years? Jobs? The youth have now been forced to organise themselves into a *berozgar sangha* (unemployed's association) to agitate for jobs. Electricity? The applications of farmers for an electric connection are lying unattended for ten years. Roads? Even the officers of the nuclear power station are willing to admit that roads are in scandalous disrepair. They won't be able to evacuate people in a nuclear emergency during monsoons since even their jeeps are unable to get to most villages. Health care? For any serious complaint people have to go to Kota (50 km away).

The promised land is a land of despair. It is a land of mysterious tumours and malformed children (See Chernobhata? on page .3) Seeing these innocent children sacrificed at the alter of development one begins to wonder if the really bloodthirsty dacoits live on the banks of the Chambal or stalk the corridors of power in Delhi and Bombay.

An Account of Ourselves

"You don't take any advertisements, nor government help, nor funds from foreign funding agencies, then how does Anumukti survive?" I am often asked such questions by friends and fellow publishers of small magazines. Recently I was startled to hear that a story was doing the rounds that Anumukti was sustained by funds from the War Resisters International (WRI). To put such doubts and speculations at rest I am giving below Anumukti's accounts ever since its inception three years ago. We are very grateful to M/s. Chandrakant & Sevantilal Chartered Accountants, Bombay for having audited our accounts.

In December 1985, WRI had its three yearly gathering at Vedchhi. Part of the funds for this gathering were raised locally. However, after the gathering was over it was found that some of the money was left over. A resolution was passed by the organising committee to the effect that these left over locally raised funds be utilised by the Gujarat Anu Urja Jagruti in its antinuclear programme.

This money along with other locally raised funds was used in organising the 'Atom in India' seminar in Bombay in August 1986. At this seminar it was decided to have a journal which could serve as a means of communication between different antinuclear activist groups and educate people on these issues. Thus, Anumukti was born. As would be apparent from the accounts, Anumukti has never taken any money from these left-over WRI funds. The reason why Anumukti is able to manage on a shoe-string budget is because it is a purely voluntary effort. Sampoorna Kranti Vidyalaya, an organisation which does not take in any foreign or government funding owns Anumukti and underwrites any losses it might suffer. This safety net is a great help, though it is our effort to keep the Vidyalaya's contribution to a minimum. The total shortfall over three years has been Rs. 872.60 only.

Anumukti has been lucky that from time to time people have generously come forth and offered it assistance in the form of donations of money, equipment and labour. We are extremely grateful to Shri.I.J.Desai for having allowed us unlimited use of his personal computer. This has allowed us to typeset all the matter ourselves. Shri Bhaidas Parikh and the Parijat printery at Ahmedabad have helped us in greatly reducing the paper and the printing costs. Other friends have given donations to tide over emergencies.

Statement of Accounts

Income		Expenditure	
1987-88		1987-88	
Subscriptions and Donations.....		Printing	7,975.00
8,664.75		Postage	1,822.10
Vidyalaya Contribution	1,132.35		
Total	9,797.10	Total	9,797.10
1989-90		1988-89	
Subscriptions.....	13,215.13	Printing	8,974.13
Donations		Postage	4,241.00
3,581.00		Surplus	3,281.00
Total	16,796.13	Total	16,796.13
1989-90		1989-90	
Subscriptions.....	15,259.27	Travelling	3,190.75
Donations	2,400.00	Printing	9,513.00
Vidyalaya Contribution	3,321.28	Postage	7,170.80
Total	20,980.55	Stationery	692.00
		Bank Commission	414.00
		Total	20,980.55

CHERNOBHATA ?

This is a report of my first impressions as a doctor of the situation existing around the Rawatbhata reactors. It is not and neither does it purport to be a report of a scientific survey, though I feel that there is a great need for such a survey to be conducted immediately.

First a little geography. Rawatbhata reactors is something of a misnomer. The reactors are situated on the lands of a village called Tamlao. Rawatbhata is where the colony of the workers working in the reactors is situated and is about 11 km from the plant site in a northeasterly direction.

During the cycle rally, I was on a motorcycle and therefore reached Tamlao before the rest. To escape from the heat I took shelter in a small roadside shop and began talking to the people there. Some children were playing in the front yard. At first site they looked just like any other poor children of the region. But on closer observation I noticed that many of them seemed to have difficulty in movement. I called them over and examined them. Many of them had muscular weakness. Two had bone tumours. Just then I noticed that a shopkeeper across the road had a thyroid tumour and the shopkeeper next to him had a cyst on the cheek. An old man had a nearly two inch diameter cyst on the cheek.

I studied medicine in Calcutta. But even there I had never seen so many patients with tumours in a single day. On talking to these people in Tamlao I found that almost all the symptoms had appeared after five or more years of the reactor's commissioning.

The next day we were in Rawatbhata and heard that a child had been born recently with talipice (crooked legs) in a colony of cattle herders. We went to see him. While there his mother told us that her next door neighbour had a six month old baby boy with the same defect. When we went there, the lady said, "Oh, there is another seven month old girl just seven eight houses away who too was born with crooked legs. Nearby in another colony we saw a two year old boy

with the same problem and another two year old who had been born without any toes on both his legs.

Later we went to see Jharjhani village. This village is about eight to nine kilometers from the plant site in a direction opposite to Rawatbhata colony. The villagers claimed that at least 25 days a month the winds blew towards them from the plant. There every one I met, and I met hundreds of people, complained of stomach pains. There was a girl born here without one ear and another two year old who did not have a hand since birth. Again there were number of children with tumours. A very large number had polio. There were two orphan children both with large lumps in the abdomen. Many women and men complained of sterility.

On talking to shepherds I learnt that they have been seeing similar problems in their herds for a long time. One person told us, "You can go and check from Panchayat records that this village ten years ago had 5,000 goats and sheep but today there are hardly 500. I have had goats born with three legs by the dozen."

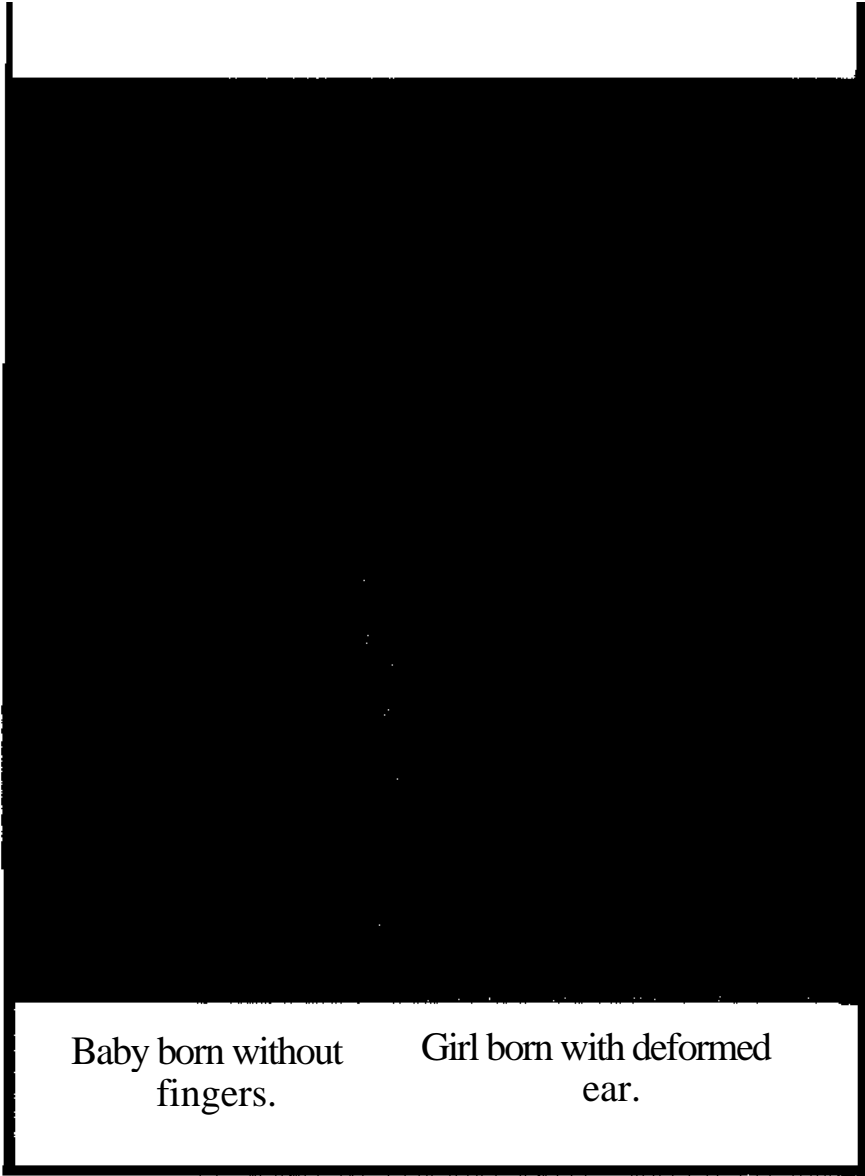
I have been studying about the health effects of radiation for the last few years. I knew beforehand that there could be various kinds of effects. Because of long term ingestion of radionuclides immune mechanisms would be disturbed and therefore I was mentally prepared to see increased incidence of different diseases, some cancers and genetic defects. But even in my worst nightmares I could never have imagined that I would see so many in so short a time in such a small population.

I talked to the authorities of the nuclear power plant. They said that the amount of radioactive releases from the plant were so small - just half of one percent of the natural background - that it was inconceivable that these diseases and deformities were due to radioactive discharges. They were inclined to blame air pollution and adulteration in cooking oils for the problem. However, enquiries revealed that there are no factories or industrial establishments of any kind other than the nuclear power plant and the Department of Atomic Energy

operated heavy water plant anywhere in the vicinity to cause air pollution.

From some workers I heard that there had also been a number of cases of cancers and birth defects amongst the plant workers and their children but I was not able to see their health records to confirm this.

The number of crippling deformities and handicapped people around Rawatbhata that I saw is certainly abnormally large. I doubt that radiation in low doses can cause this much damage. There have been no reports of such teratogenic effects in the vicinity of other operating nuclear plants anywhere else in the world. Although recently there have been some newspaper reports indicating increasing incidence of such effects around Chernobyl. Therefore, I suspect that the 'routine emissions' from Rawatbhata have been much larger than what is admitted by the



Baby born without fingers.

Girl born with deformed ear.

authorities. Or else there have been accidents and 'leaks' during its seventeen year history that the authorities have managed to hide from the public. Whatever be the cause, it is imperative that there be an immediate scientific investigation of the entire area. Even if there are no baseline health data for comparison, and it is criminally negligent on the part of the atomic energy authorities to have polluted the environment without having first collected baseline data, they and the government should immediately do comparison studies with areas without nuclear contamination and publish their findings. It is also

necessary for independent scientists to conduct their own investigation.

Seeing the condition around Rawatbhata I felt that here we are building new reactors in Gujarat, Karnataka, Tamilnadu, Andhra Pradesh and other places in the country. Will the same scenes be repeated in all these places a few years after the reactors begin operation? Would we see effects first in small domestic animals like goats and sheep and would there be deformed babies before even one generation passes?

Every citizen of the country needs to become aware of this danger. Now! If we want to save our land from this hell which goes on generation after generation the time for action is before these plants begin operation. I urge doctors, scientists and social workers living in the vicinity of proposed plant sites to beware of this terrible danger. They should go to Rawatbhata and look for themselves and take action now so that a similar situation can be avoided in the future at other places.

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Ek Ya Do Bus?

The Indian navy may have received a second nuclear powered Charlie I-class cruise missile submarine from the Soviet Union because the first submarine it leased may have experienced radiation problems, according to *Jane's Defence Weekly*. The first submarine called the *Chakra*, was commissioned last January. The second is reportedly named the *Chitra*. India is the only nation other than the five nuclear weapons powers to operate nuclear powered submarines....

The Bulletin of Atomic Scientists January/February 1990

India has decided to cancel plans to acquire six Soviet Charlie- class nuclear powered cruise missile submarines. Radiation problem on the Charlie, nicknamed "Chernobyl-class" in India, are apparently more severe than reported in *The Bulletin* last month. According to *Navy News and Undersea Technology*, one Indian scientist may have died from radiation poisoning suffered on board the submarine. India is likely to return the two submarines already received from the Soviet Union.

The Bulletin of Atomic Scientists: March 1990

Editor's Note: Will the advocates of "openness in government" confirm these somewhat mutually contradictory reports?

Dirty Tricks of Decent Men

Nucleocrats are as a rule rather dismissive of the prospects of alternative sources of energy. As an example, this is what Dr.M.R.Srinivasan, the erstwhile nuclear czar has to say in a recent issue of Seminar (No 370):

"There is much talk of non-conventional energy sources like solar, wind, tidal and biomass. All of them have their own limitations and their contribution can at best be marginal. Electricity from photovoltaic cells is very expensive. Power from windmills is meagre and unsteady. Tidal plants are too complex. Biogas and biomass can at best make a marginal contribution. Nuclear power thus seems to be the only viable source...."

Now normally one would accord great weight to such 'technical' opinion. Indian decision makers are more prone than most to accept such statements uncritically. But should they? Are nucleocrats impartial umpires in these matters which concern their own bread and butter (and jam) so directly? Below we present a case history from Britain where the honourable gentlemen were not very honourable after all.

The scandal of the lack of support given to renewable energy research and development in the UK, can only be understood in the light of the determination of the nuclear lobby to press on with Britain's nuclear programme at any cost, in spite of considerable public opposition. If benign renewable sources could be demonstrated as viable alternatives to the four pressurized water reactors (PWRs) which the Central Electricity Generating Board (CEGB) planned to come on stream in the 1990s, then Britain's plans to expand nuclear power would collapse.

In 1976, the Department of Energy (DEN) believed that wave power was "the most attractive of the renewable sources", while wind power was seen as being much less viable. It was therefore in the interest of the nuclear industry to boost wind power as "a winner" (though not too vigorously or it might itself become the alternative to the PWR programme) and run down the prospects of wave power. This the nuclear lobby did with great success, and in 1982 wave power research and development was closed down and wind power was established as the high priority renewable.

Sabotaging Wave Power

A number of wave power devices suffered from the decision to close down wave research in 1982, but the documentation available is largely concerned

with the device developed by Professor Stephen Salter at Edinburgh University and popularly known as 'Salter's Duck'. In simple terms this is a canister which bobs up and down on the waves like a floating duck, the resulting motion driving an electrical generator.

The consultants who had been appointed by the Department of Energy to help develop the various wave energy devices, reported in March 1982 that the design of the Duck was "near optimal in weight and efficiency, and ... must be assessed in terms of the probability of success or failure at the end of a significant development phase." They also believed that "*essentially the engineering stands or falls on the feasibility of achieving a very consistent maintenance free life as indicated. Experts consulted are not prepared to discount the possibility that this may be achieved if the necessary effort is made available*" (emphasis added). The consultants concluded: "Given the engineering means of realising it, the concept is hard to fault."

A unit cost of 5.5 pence per kilowatt-hour (p/kWh) was calculated for the cost of electricity from the Duck, and this was so close to the target set by the Department of Energy that for the first time it appeared that a renewable generating source might be developed to compete with nuclear power.

Although the Department of Energy is full of nuclear power protagonists, and those seconded to help the development of renewable energy sources did not always leave their nuclear commitment behind, the first engineer in charge of the Duck project, Clive Grove-Palmer, was well disposed and gave helpful criticism to the Edinburgh team. He gave a paper to the June 1982 Conference on Wave Energy Utilization at Trondheim in Norway, which estimated the development potential for electricity from the Duck as 3p/kWh. This estimate, which was made well before the conference, together with the consultants' report, forced the nuclear lobby into action.

A meeting of ACORD (the Department of Energy's Advisory Council on Research and Development) was held on March 19th, 1982. In an extremely unusual move, Grove-Palmer, the programme manager, was excluded from the meeting. Instead, a secret report (published eight months later by ETSU, the Energy Technology Support Unit, which is based at Harwell, headquarters of the UK Atomic Energy Authority, and like the UKAEA is controlled by the Department of Energy) persuaded ACORD that wind power had more immediate possibilities of being economic than wave power, and that the required reduction of the renewable research budget from

£ 14m to £11 m a year would therefore have to be met by closing down wave power research.

This £3 million economy in renewable research - the ostensible reason for closing down wave research - was enforced at a time when the Department of Energy was spending £200m a year on nuclear research. Both wind and wave research could have been kept going instead of terminating the wave programme on an estimate of wind power economics which was as over-optimistic as the estimates of nuclear power have proved to be. But worse was to come. Soon after the ACORD decision to close down wave research, Clive Grove-Palmer unexpectedly took early retirement.

[Grove-Palmer: I resigned ... Because they 1 asked me to write the obituary of wave power. There was no way I could do that - I had been involved with it much too much .Interviewer: And you think that obituary shouldn't be written?

Grove-Palmer: I'm sure it shouldn't, absolutely sure It shouldn't. We were Just ready to do the final year of development [and then go to sea. _____]

After Clive Grove-Palmer's resignation, Peter Davies was appointed to take charge of running down the research of all the groups doing wave power work. His devotion to the cause of renewable energy can be gauged from the fact that he was later chosen to present the Department of Energy's case at the Inquiry into the proposed expansion of the nuclear plant at Dounreay in Scotland.

Casting Unfair Doubts

Perhaps even more disturbing is the case of the consultants' report. The main consultants (RPT), who had little electronic experience, employed a sub-consultant, Gordon Senior, with special responsibility for Ducks. He was able to subject the team's ideas to a considerably more rigorous scrutiny than had been done before, and he sat in on meetings with potential suppliers. After many long meetings, it proved possible to hammer out almost complete agreement between Gordon Senior, the civil engineers at construction company John Laing, and the team at Edinburgh. Unfortunately for the team, many of Gordon Senior's conclusions were reversed by people in RPT who had not been present at the meetings and who had very little contact with the work.

Gordon Senior gave written evidence to the House of Lords Committee on renewable energy, in which he concluded:

"My conclusions were the last part of the report to be formally drafted although my opinions had become well known to RPT as the work had progressed. My final draft of these sections was submitted in 'lay 1983. I expected a response from RPT within

days to discuss these consistent with our established practice. When this was not forthcoming I telephoned the RPT Project Manager to be told that the report had been completed, was to be submitted that night and could not be discussed. When pressed I was told that the conclusions had been altered. When I asked for a copy to examine what changes had been made I was told that no copy had been allocated to me and that copies were in short supply. When I pressed harder I was offered a copy on loan. I found that most of the text of the report was as I had drafted but the key conclusions had indeed been changed and even reversed. I objected and asked for my views to be made known to the DEN but was told that this could not be done and that I was bound by client confidentiality to RPT not to reveal my disagreement. I was also advised not to have further contact with the device team."

The next step was almost unbelievably bizarre. On the pretext of devising a system that would enable a simple comparison to be made of the capital costs of different renewable energy devices, the method of calculating the capital cost of the Duck was changed. The Duck had been costed on the basis of a detailed 140 page document, and by obtaining quotations against engineering drawings for all the bought in items. The official consultants prepared their own estimates, which were close, but a little higher. The Department of Energy's simple 'parametric' system replaced the 140 pages of detailed instructions with costings by weight, with just four different categories:

"Ballast costs- £50—£100/tonne; Concrete structures cost - £400—£600/tonne; Steel structures cost -£ 2000—£4000/tonne; Mechanical and electrical plant costs -£10,000—£20,000/tonne".

Such a system may be simple, but almost any renewable energy device comes in the last category and the costing penalize the heavier devices.

In the Duck, which has to be heavy enough to only just float, the welded steel lining of the power canister, its contents and the concrete casing, together weigh 300 tonnes. The quotation obtained for the steel lining from the Heavy Engineering Division of Whessoe Ltd was £850 per tonne for the 180 tonnes of steel. The Department of Energy insisted that it be costed at £ 10,000/tonne in calculating the cost of electricity from a Duck. Most of the machinery and electrical gear inside the power canister, and the concrete casing in particular, cost far less than £ 10,000/tonne, giving an average cost for the whole Duck of about £1000/tonne. Nevertheless, the Department of Energy insisted that the whole 300 tonnes be costed at £ 10,000/tonne. This added £2.7 million to the capital cost of each Duck, and with other lesser absurdities pushed the unit cost up to the 9.8p/kWh in 1987 prices quoted by the CEGB at the Hinkley Inquiry.

Faulty Cables

Possibly even more difficult to believe is the saga of the reliability estimate of the cables taking the Duck's electricity production to the shore collection point. If this cable has a fault, the Duck is out of action until the cable is mended or replaced. There should have been little difficulty in producing a reasonable figure from the worldwide experience with undersea electric cables. Norwegian figures showed that cable faults could be expected once in 625 years per kilometre of cable. The North of Scotland Hydro Electric Board has around 80 cables to islands off the coast, some of which date back to the 1930s without a fault; and their 43 km cable to Orkney, which suffers similar waves and much worse currents than those of the Atlantic wave fields where the Ducks would be stationed, has achieved 300 kilometre years without a fault.

The consultants' first report in November 1980 gave details of the data that had been used and estimated reliability at 333 year kilometres. This was only half the Norwegian figure, but meant that for a 10 kilometre cable a fault on average would only occur after 30 years - more than the expected lifetime of a Duck. However, in May 1982, a second report by the same consultants reduced the reliability to one fault in 100-125 year kilometres. In the summary, which was eventually accepted as a double misprint, it was given as one year per kilometre. How the estimate of the same reliability figure could have come down from 300 to 1 in official reports, without the final ludicrous figure (a 10 kilometre cable fail-

ing every month) being queried except by the Duck team, remains a mystery, since no data or references were given except in the first report. Professor Salter was prevented from discussing the problem with the consultants, who had been told not to answer his questions by a Department of Energy official.

The obstacles put in the way of the Duck and other wave research were legion. Yet another example is that according to the Department of Energy's consultants, building 1000 wave devices would, "be unlikely to show great reductions (in the capital cost of each device) from the manufacture of a single prototype", whereas, according to Department of Energy officials, building 10 of the 60 metre Orkney wind turbines would reduce the cost of each to a third of that of the prototype.

Salter concluded his original Memorandum to the House of Lords Committee thus:
"We must not waste another 15 years and dissipate the high motivation of another generation of young engineers. We must stop using grossly different assessment methods in a rat race between technologies at widely differing stages of their development. We must find a way of reporting accurate results to decision makers and have decision makers with enough technical knowledge to spot data massage if it occurs. I believe that this will be possible only if the control of renewable energy projects is completely removed from nuclear influences".

Excerpted from: *The Ecologist* May/June 1990

Nagercoil Demonstration

The somewhat dormant agitation against the proposed Russian built VVER nuclear power plant at Koodankulam has again entered an active phase following a big demonstration on 29th April 1990. The last such demonstration had taken place a year back under the auspices of "Protect Waters - Protect Life" march in May 1989. (See Anumukti Vol.2 No.6) Though there was a shooting incident during that march, there has been no enquiry into the incident as yet.

There were plans afoot to have a big rally sometime before the parliamentary elections but these had to be postponed as one of the leaders of the organising committee decided to stand as a candidate.

Though the April 29th rally was planned at short notice, it attracted a wide participation from various organisations amongst them National Fishermen Forum and Environment Protection Movement. Women's and students' groups also participated along with workers belonging to various political parties. The march started from Hindu College and

proceeded through Veepamodu junction, Monymeda, Nagarajar Didal, Kothar before ending in a public meeting near the railway station. The meeting was addressed by Mr. Tom Kochery, Dr. Kumaradhas, Dr. Mrs. Indira Surendran, Dr. Valanar and Mr. Mony amongst others.

There was a time when the Kanyakumari district was famous for its green appearance and had many water springs. However over-exploitation of ground water for the production of commercial crops like rubber and deforestation have led to a deepening of the ground water level and an infertile soil. Now, the Tamil Nadu government has declared this once green district into a drought prone zone. Thus, the issue of water has assumed a central role for the people of this district. The Nagercoil township at present receives municipal drinking water supplies only once in ten days. Some areas of the township get supplies once every two weeks.

The main source of fresh water in the district is the Pecheiparai dam. Constructed by the Maharaja of Travancore during pre-independence times, its

waters have been used for irrigation only. Now, it is proposed to take these waters for cooling the reactors. Thus it is no surprise that the issue of water dominated everything else at the meeting. Two resolutions were adopted:

If the work continues with the aim of taking water from the Pecheiparai dam for the reactor, then the

people will remove all the stones which were marked for the plan line from the dam to the reactor.

The second step would be stopping of all payment of tax towards land and water.

Solomon Victus
37 Ponmeni Narayan St.
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The Anumukti Cycle Yatra

All you really need is a megaphone. You halt at a street corner and start talking. People gather around, listening intently. Sometimes somebody asks a question. You explain. Some people nod in agreement others start leaving. Others in your group go around distributing leaflets describing the objectives of the yatra or with a donation box. Most people do contribute. You end with a song or two. There is an outpouring of good wishes. You climb your cycles and are back on the road again.

There were eighteen of us in all who set out on the Kakrapar to Rawatbhata cycle yatra sixteen on cycles and two on a motorcycle. Two friends had come all the way from Rajasthan just to join in the yatra. There was a local lad from Vedchhi. The rest were students and workers from the Sampurna Kranti Vidyalaya. Together we represented Orissa, Maharashtra, Rajasthan, Bihar, and U.P., besides Gujarat.

We planned to start from Vedchhi on 9th of April in the afternoon. The days just before departure were incredibly busy. The poster exhibition needed to be completed, the leaflets had to be printed, the cycles had to be collected from friends and well wishers and made road-worthy, the April issue of Anumukti had to be printed and on and on... It seemed certain that we would never be ready on time.

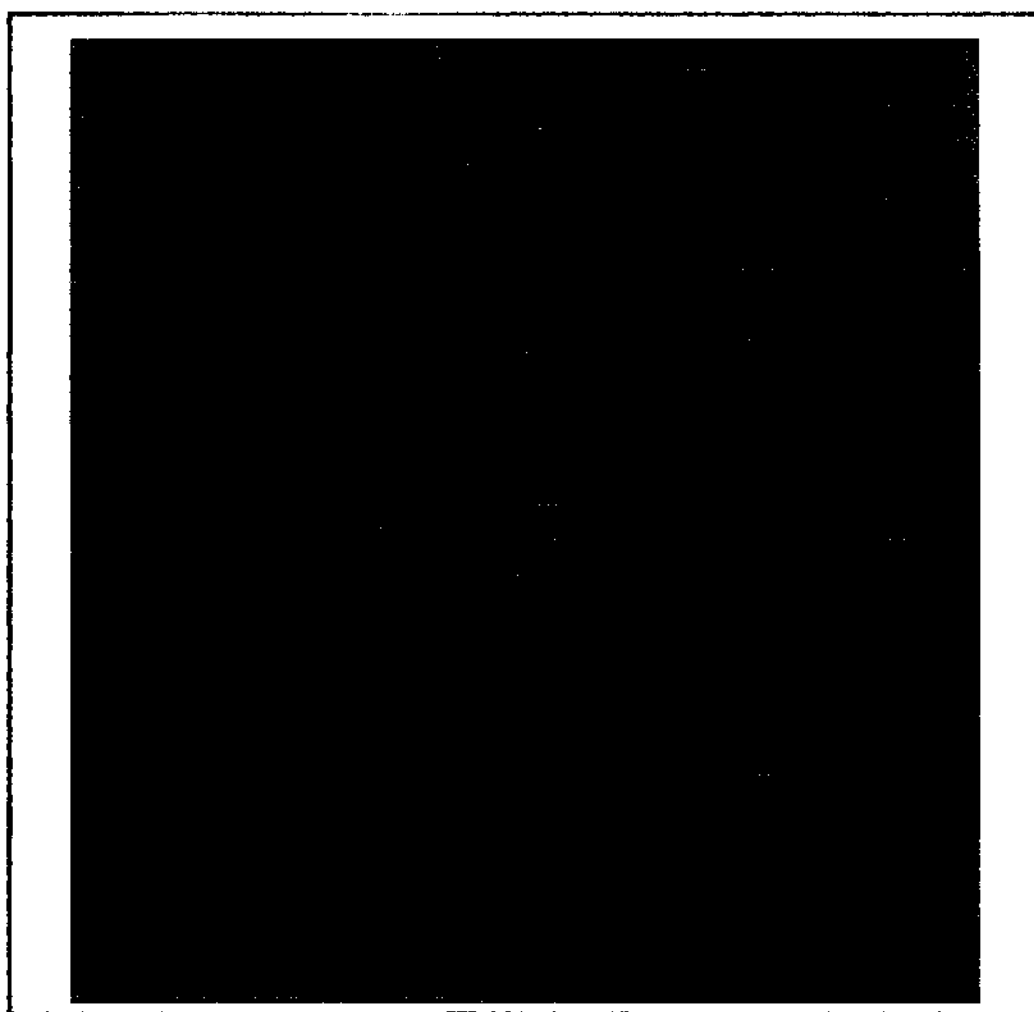
But come the scheduled time, wonder of wonders, we were off. In the morning we had a meeting at

which friends from the Vedchhi area had come and wished us success. But at the time we left, our only audience were three policemen who radioed our departure to their superiors. During the trip, right up to the borders of Gujarat we were accorded the honour of an escort by the guardians of the law. After all the main purpose of our yatra was to spread awareness amongst the people of the dangers posed by the nuclearisation of the country. And all governments know instinctively that public awareness is something that is detrimental to public order. Our first night halt was Bedkuadoor, a small village some

five km from the Kakrapar atomic power plant. The route we had originally selected was under repairs and we had to make a detour which added 15 km to the journey. It was dark by the time we reached our destination. The police van stuck to us like a limpet. In fact its headlight illuminated our path. This close attention did achieve its objective of intimidating our hosts. No public meeting was held and even a private showing of a video film had to be cancelled.

Mandavi is a taluka town just five km from Kakrapar as the crow flies. We started after sunrise and dilly-dal-

lied over a bath in the river Tapti. Our local hosts had arranged a meeting for us but had not been able to advertise it. Seeing our megaphone they asked us to go all over the town in a procession and invite people for the meeting. However, we found that a lot of people would just gather wondering what was being announced on the megaphone. So besides having our scheduled meeting we had six other street



corner meetings. The lessons learnt that day in Mandavi were to stand us in good stead throughout the trip.

We stopped over for lunch at a girl's school at Roopan. It was examination time but yet the girls made us welcome and listened to us with great attention. On our way to Netrang in the afternoon we had a very good meeting at Zhankhwao. But Netrang was a disappointment since a visit by the local gendarmes had made our local hosts cancel our programme.

The first two days were physically the most tiring. We got up at 4.00 AM next morning and left for Rajpipla. Travelling by the light of the waning moon in the cool weather with soft breezes blowing was so enjoyable that we made it into a regular habit for the rest of the trip.

Mangrol, which was our next halt is a beautiful village on the banks of the Narmada. Swimming in the river was a special pleasure. The programme had been organised by Aradhana, an old student of the vidyalaya and lasted well into the night. The whole village came and when we left the next morning our numbers had been increased by the addition of Jyotish who accompanied us all the rest of the way.

For the next few days our route lay through the valley of the valley of the Narmada. Here the main question in people's minds was the Sardar Sarovar dam. There had been strong protest and brutal police suppression at Alirajpur just then.

Our last halt in Gujarat was at Rangpur - the village which has become famous as the origin of the Lok Adalat concept. Shri Hari Vallabh Parikh had arranged meetings for us in five different villages and accompanied to all of them despite the lateness of the hour.

We entered Madhya Pradesh the next day at Bakhatgarh and proceeded towards Attha. There was a phase transition in the condition of the roads which became incredibly bad. One began to understand the meaning of the word "doob-kshetra". The government just doesn't carry out any repairs since any way the area is to go under water after the dam starts filling up. The funny thing was that most of the road we travelled was not in the "doob".

The scenery in this part of Jhabua district is very beautiful. The mountains just roll on and on. Unfortunately, nay criminally they have been denuded of most of their forest cover. We made slow progress since punctures were plenty.

The work being done by a group of young activists Amit, Jayshree, Rahul and Narendra at Attha in extremely trying conditions is an inspiration. We had a good meeting in a house on top of a small hill and then left for Jhandana. However, we made an unscheduled stopover at Temla. (See Box)

The sun went down as we reached the banks of the river. There wasn't much water in there but plenty of sand. We got off our bikes and trudged across. A snake's carcass lay near a stone. It took us some time to decide on the path to take since there were quite a few paths emerging on the other end. All of us were tired and dusty and beginning to feel very hungry. We wished our night halt wasn't another 15 km away.

Temla is a small tribal village. Maybe, some twenty to thirty houses. There was a house by the roadside. Uma walked in while the rest of us waited outside. She asked for water to drink. An old woman came out. "How can you drink the water that has been touched by me. You better go to the Patelia's house. It is nearby," she said. "No way", Uma answered, and added "We will all drink water here."

Young men from the village gathered around. We told them that we were on a cycle yatra and about the purpose of the yatra. They invited us to stay the night with them. "Food is no problem" they told us. They were terribly poor and there were twenty of us, all hungry to the core. Yet they did not hesitate for a moment. They collected two rotis each from every household. Some Bajara, some Jowar and made us some Dal.

It was a delicious meal. After the meal the whole village gathered together. We sang songs, danced together, tapped an overhead electricity line to show them slides of Hiroshima, talked about what development means and what it ought to mean. Our tiredness disappeared in the warmth of their welcome.

Early next morning, well before dawn, we were on the road again. Meeting people, shouting slogans, distributing pamphlets, discussing issues ... but most of all pedalling on, negotiating the road and fighting the heat. Temla was etched in our hearts.

The high-point of our trip the next day was the meeting with Baba Amte. He had come to Badwani to address a meeting on the occasion of Ambedkar Jayanti. Unfortunately not all of us could meet him. We stayed the night at Chikhaldia on the banks of the Narmada and had a fantastic introduction to our staple food for the next few days - Bati and Dal.

By now our daily routine was set. The aches and pains of the first few days were a distant memory. All of us had realised the pure joy of riding before dawn and thus there were no complaints at all at getting up at four in the morning. We would try to cover about 25 km in the first two hours, then have breakfast and cover another 20-25 km in the next three and a half hours with a good number of roadside meetings. By then it would be too hot to do anything but rest. If we had farther to go we would do that late in the afternoon.

From Chikhaldia to Khalghat we made a lunchtime halt at Dawana. A local householder Sbrri K.L.Tiwari heard that we were passing by and there was some difficulty about feeding us. At the time he and his family members were just about to sit for their own meal. But true to ancient Indian tradition regarding hospitality to guests they prepared a sumptuous meal for us first and only later took their own food.

That night at Khalghat, for the first and the last time during the whole trip we prepared our own food. We spent the night in the premises of a temple. All of us pitched in into the making of the meal and it was good fun.

The next leg of our journey, from Khalghat to Indore was the longest of the trip. A little over 100 km. Also, there were the Vindhya mountains to cross. We were all tired by the time we reached Indore but were sustained by the knowledge that the next day was to be a day of rest.

At Indore, our party was increased by two. Narayan Desai, at 66 the oldest member of the group and my daughter Dua, who at 6 was the youngest joined us for the rest of the tour though they did most of their travelling in buses. The programme at Indore was somewhat of a disappointment. The press conference got hijacked on the question of Kashmir while the public meeting had a very thin attendance. On top of this the mosquitoes were something fierce and their numbers would have done credit to a large colony of bacteria.

Eklavya, our hosts in Ujjain had organised a meeting with the bar council. The discussion became rather lively with questions on the bomb option dominating. The meeting lasted two hours beyond schedule.

On the road from Ujjain to Mahidpur, we had our first experience of an adverse wind. Our route till now had been in a north- easterly direction generally and the wind's had usually been favourable. The bath in the river Shipra after reaching Mahidpur was an extremely welcome interlude. The meeting that night in the Mahidpur bazaar was well attended and we had an enthusiastic response.

The road from Mahidpur to Jaora was a torture. The winds were strong and they were dead against us. We somehow made it to Tai for our morning halt. We wanted to have a bath in the river (Chambal) but were warned against it by the villagers who said that the water was too polluted with chemicals from the factories at Nagda and a bath was likely to cause outbreak of itching and rash all over the body. There was an unexpected surprise in store for us at Tai. Sunil, one of the organisers of the Rawatbhata convention and our contact person there came to meet us. From then on he was to be our constant companion for the rest of the trip. He had before coming

personally visited a number of villages and small towns on our route and made arrangements for our stay and meetings.

During the next few days we had well attended and enthusiastic meetings in Mandsaur, Manasa and Rampura. There were extensive discussions at these meetings and at times sharp questions were asked. But the people who came had an open mind and were willing to listen to an alternative point of view. Our yatra was reported extensively in newspapers and there have been follow up reports coming in newspapers since. Thus, in the sense of a continuing public education programme, the greatest success of the cycle yatra was in these small towns near the M.P. - Rajasthan border. This encouraging response has also made us think in terms of organising a week's camp on nuclear issues sometimes in the winter in one of these places.

The last night on the road was again a very different experience. We stayed at the Gandhisagar dam as guests of the dam authorities. The contrast between this official reception and the official hounding by the police in Gujarat was an interesting example of the right hand of the government not knowing what the left was up to. We were overjoyed by the fact that 12 youths from Rawatbhata had come all the way (55 km) to welcome us and the next day they accompanied us on cycles.

The last day of the yatra was the most memorable. All during our trip - a distance of nearly 1,000 km we had not come across a dense jungle. This despite the fact that most of our route lay through lands that are officially 'forests'. Near Gandhisagar, this great lacunae was fulfilled. There were thick forests. But they were the strangest forests we had seen since in this hot season they did not contain even a hint of greenery or leaves of any other colour. We had our largest public meeting of the trip at Eklingpura - a village of persons displaced by the Gandhisagar dam. Even after the meeting, a number of women were still wanting more information and they had a separate meeting with Sanghamitra. Contrary to our regular custom we left Eklingpura early in the afternoon since we wanted to reach Rawatbhata before nightfall. The Sun bore down with merciless fury. Whatever little water we had brought along was soon consumed and the last ten kilometres were a special agony. Relief finally came at Tamlao. We had enough to drink but more than enough to think. (See Chernobhata? page 3)

Although the cycle yatra formally ended at Rawatbhata, there were further adventures in store for us on our return journey. We came by train from Kota to Baroda and then loaded the cycles on top of a bus for further journey. Near Surat we had to cross an overhead railway bridge and five cycles came crashing down. Fortunately no one was hurt, though two bikes got completely smashed.

Surendra Gadekar

Chernobyl Day at Rawatbhata

The construction of the first unit of the nuclear power plant at Rawatbhata originally started in the sixties along with dams. At the time the people of this sparsely populated corner of Chitaur district welcomed the move. They were seen as new 'temples' of development. But now the local people have started feeling the harmful effects of radiation. At the same time the government proposes to expand the number of units from two to eight and work has already begun on units 3 and 4. It was with this background in mind that the sarpanch of Rawatbhata, Shri Ratanlal Gupta and his colleagues decided to organise a convention so that people could rethink the issue and try to come to an independent judgement.

The meeting was attended amongst others by physicists, medical doctors, environmentalists, social workers, thinkers and intellectuals. There was a fair amount of local participation. A rally was taken out before the meeting from Rawatbhata bazaar which walked 3 km before ending at Charbhuj temple.

The meeting was chaired by Shri Gyanchand Jain. It began by observing a two minute silence in memory of the Chernobyl victims.

Local residents were first invited to share their experiences. Shri Bhawani Shankar of Jharjhani said that in the last five or six years the incidence of T.B. and cancers had increased tremendously in his village. He also said that sterility had become common amongst the youth. Also there had been significant reductions in both the number of cattle and in their milk yielding capacity. Saleh bhai from Mandesra said that while the villagers had been made to share the dangers of atomic radiation equally, the power plant authorities had discriminated against them as far as benefits like health care and educational opportunities were concerned. The sarpanch of Badoli said that reports concerning the leak of H₂S gas from Heavy Water plant had been suppressed by the authorities though the leak had affected both the villagers as well as security persons at the plant. The chairman of the unemployed youth association, Shri Rajoria said that the atomic power project had not benefited the local community in any way. A social worker Shri Rishilal complained that while the power plant authorities had made many promises they had not fulfilled even one of them. Even serious patients had to first deposit Rs. 2,000/- at the plant hospital before they were admitted. Many patients had died in the process of depositing the amount.

The chairman of the CITU affiliated Rawatbhata Atomic Workers Union, Shri J.C.Gupta demanded

that an independent enquiry be made into the health effects felt by the workers as well as the local population. He said that the health records at the plant hospital should be made readily available to outside independent experts and the findings of the enquiry should be published. For how long will the government be able to fool the workers through attractive wages and allowances, he asked.

Amongst the visitors from outside who addressed the gathering were Dr.V.L.Talekar, a student of Sir C.V.Raman, the famous Gandhian thinker Narayan Desai, community health worker Dr. Sanghamitra Gadekar, Dr.Susbil Joshi of Eklavya Hoshangabad, Shri Sajjan Kumar of the World Peace and Environment Protection Organisation New Delhi and Dr.Surendra Gadekar of *Anumukti*. They discussed many different aspects of the nuclear issue in detail.

The gathering adopted three resolutions which demanded that there should be no further expansion of the nuclear project; that the project authorities should be responsible towards providing civic amenities such as roads, schools and hospitals etc to local population and information regarding radioactive discharges from the existing plants should be made available to the public.

On the next day, the 26th of April a seminar on Nuclear Power Plants and People's Health was organised. Before the seminar authorities from the plant distributed sets of papers which claimed that radioactivity releases from the plant had in no way affected the health of the local people. Later during questioning they retracted their claims and agreed that radiation in any quantity could produce harmful effects. The papers also stated that antinuclear activists were part of an international conspiracy to keep India backward. The papers did not bear the name of any person or organisation as printers and publishers.

During the seminar, the need for a detailed investigation of the health effects on humans and animals was strongly felt. At first the authorities claimed that they had carried out a baseline survey before the reactors had started, but later, on being questioned, admitted that their baseline survey had not been concerned with people's health.

*Ram Pratap Gupta
Dept of Economics
Rampura College
(Translated from the Hindi original)*

The *Greenpeace* Book of the Nuclear Age
The Hidden History The Human Cost
John May
Victor Gollanez Ltd London 1989

"In California's Mojave desert in 1949, Major John Paul Slapp had just risked his life on an experimental rocket sled that pushed him beyond 31 Gs - 31 times the force of gravity. He survived only to discover that none of the G - measuring devices had worked. Captain Edward Aloysius Murphy Jr was called in to find out what had gone wrong. He discovered that somebody had installed each of the six G-measuring devices backwards. "If there's more than one way to do a job and one of those ways will end in disaster, than somebody will do it that way," Murphy remarked. Murphy's law was born."

This book contains lots of stories. Real life stories. They are stranger than fiction. If a film were made on this book it would resemble one of those *Carry On* series. Unfortunately these stories are not funny. They are too real and tragic. In these stories, valves never work, computer programmes glitch, barrels leak, weather conditions are never right: the unexpected, the bizarre, the last-thing-anyone-would-have-expected, has an annoying habit of happening. Murphy would understand.

This is a book which ought to be read and reread by every antinuclear activist. The prose is remarkably lucid and the stories just grip you due to their strong human interest. Unfortunately, its price is way beyond most Indian pockets. However, it is available in British Council libraries and those who have access to these should make full use of them. But even more compellingly this book ought to be read by young scientists working in the nuclear establishments. Only the realisation of their own and their instruments fallibility will save the rest of us.

We will carry some of these stories in future issues of *Anumukti* and also translate them into Hindi for access to a wider public.

Excerpt

This is a book about accidents and risk, about the nature of chance and the oppressive weight of secrecy, about invisibility and intrigue, about tragic events, about causes and effects, about official lies and the true human cost of atomic energy.

The world described in this book exists all around us, like an alternative reality. It is a world where human error meets sophisticated technology, where people make a sequence of logical decisions for the right reasons only to find that they have created chaos. Where there are many versions of the truth.

This book will introduce you to the black briefcase in the red shack, take you on a helicopter ride over a burning nuclear core, into a damaged reactor in which life forms are breeding, and through a realm of black humour and mystical coincidence.

Because the effects of radiation take decades to reveal themselves, almost all the stories in this book are current, even though some of them begin in mid 1940s. In this context information develops its own half life - the amount of time it takes for the official truth to leak out of the canisters in which it is contained.

There is a new geography here, with a new set of significant points and a complex network of inter-connections. Nuclear material is constantly on the move around the globe, it is stacked in caverns deep in the earth, and dumped in deep-sea trenches. Above our heads nuclear powered satellites produce high resolution images of nuclear navies.

Souvenirs of our journey round this planet might include sand alchemically transformed by the heat of a nuclear blast, a belt buckle from a drowned Soviet submariner, an irradiated restaurant table leg, a nuclear warhead dropped by accident in someone's back garden.

The route runs from Alamogordo to the Z-9 buildings at the Hanford reservation, via desert test sites on the edges of Mongolia, Pacific coral reefs, the Antarctic, a Swiss cave, the Himalayas and the inner reaches of outer space.

The stories in this book bear witness to the daily risks we are running and the night time dangers inherent in the nuclear dream. They lift the shroud that cloaks an enormous industrial enterprise designed to defend rival ideologies: an atomic Papacy of Byzantine splendour and colossal scale with deep and historic institutional roots and a secretive bureaucracy.

Against this are ranged the unborn, the innocent and the unsuspecting. The widows of the ex-servicemen who happily posed for pictures in the Pacific sunshine on board irradiated battleships in 1947, and collected a cancer along with their discharge medal. The children of Kiev, who were not evacuated until after their traditional May day parade had been dusted with radiation. The Navaho shepherds, the Mexican steel workers, the Marshallsc islanders the Australian Aborigines - all have been on the receiving end of this invisible threat.

Operation Hat

If some nuclear accident stories read like scripts for Hollywood disaster movies, then the story of Operation Hat reads like a script for a spoof spy caper.

Operation Hat began shortly after China's first nuclear bomb test in 1964. The US CIA, with the

cooperation of the Indian government, planned an expedition to the Himalayas to plant a nuclear powered monitoring station on the summit of the 26000-ft- high Nanda Devi, from where it would eavesdrop on the Chinese nuclear test programme in over-the-border Xinjiang Province.

The Agency recruited several top US civilian climbers who, together with four of India's best climbers from the 1962 Everest expedition, formed the cadre of the ill-fated Operation Hat. Far from succeeding in eavesdropping on the top-secret Lop Nur nuclear test site, Operation Hat was destined to threaten one of the world's great rivers with plutonium contamination.

The US climbers and their Indian colleagues set out up the south face of Nanda Devi in the autumn of 1965. A squad of porters carried the disassembled monitoring station, together with its SNAP power pack, on their backs.

the SNAP - Space Nuclear Auxiliary Power - generator was a nuclear battery originally developed for the American civil and military space programme. Shaped like a cone, SNAP was fuelled by between one to eight lb of plutonium, was small enough to be carried by one man, and would power the monitoring station till its task was completed. The CIA would then send a second expedition to recover the monitoring station, SNAP and all.

Operation Hat ran into the first of its many difficulties when the expedition encountered severe weather and rock conditions. 2,000 ft from Nanda Devi's summit, the climbers decided to turn back, but not before they had cached the monitoring station which would await their return - when the conditions improved.

The climbers ventured back up Nanda Devi in the spring of 1966, but were dumbfounded to discover that winter avalanche had swept the spy station from the mountainside. The vital SNAP generator, and its plutonium were now entombed under a mound of rock and snow the size of a Giza pyramid.

The CIA and the Indian government were in a quandry. The southern slope of Nanda Devi, where SNAP lay buried is a major source of headwater for the Ganga. A holy bathing place for pilgrims was just a few km downstream from the SNAP site. If SNAP were to break open under the weight of the avalanche, there was a real risk that the hallowed waters of the Ganga would be polluted with deadly plutonium, and both the Agency and the government would face the wrath of millions of people.

Over the next two years, expeditions to locate and recover the SNAP returned empty-handed. Eventually, after water sampling of the Ganga revealed no contamination, the decision was made to abandon

SNAP in the hope that it would remain intact and that Operation Hat would remain a secret.

The secret of the lost SNAP was kept until May 1978 when the US journalist Howard Kohn revealed the existence of Operation Hat in the *Outside* magazine. In a masterly worded non-statement to the Indian Parliament, Prime Minister Morarjee Desai tried to defuse the danger of SNAP: "The indirect evidence so far is that the safety precautions built into the nuclear powered power pack may be as effective as claimed and, if so, pollution effects may not take place in the future." (The Times 18.4/78)

In 1967, Operation Hat finally scored a success. A second SNAP- powered spy station was placed on, and eventually recovered from the slopes of the nearby Nanda Kot mountain.

The first SNAP is still there, entombed under thousands of tons of rubble. Many nuclear experts disagree with Morarjee Desai. They say that the SNAP generator will eventually corrode and disintegrate, releasing plutonium into the headwaters of one of the world's great rivers.

Western Middle Powers and Global-Poverty : The Determinants of the Aid Policies of Canada, Denmark, the Netherlands, Norway and Sweden
Ed. Olav Stokke
The Scandinavian Institute of African Studies, Uppsala 1990

The 20th century is coming to a close. The future perhaps lies in what Ivan Illich - a pastor, a reformist, a seeker of alternative ways says, "During the next several years I intend to work on an epilogue to the industrial age. I want to trace changes in language, myth, ritual and law which took in the current epoch of packaging and of schooling. I want to describe the fading monopoly of the industrial mode of production and vanishing of the industrially generated professions this mode of production serves. Above all I want to show that two-thirds of mankind still can avoid passing through industrial age, by choosing right now a post-industrial balance in their mode of production which the hyper industrial nations will be forced to adopt as an alternative to chaos" (*Tools for Conviviality*).

Is someone listening? Listening to the woes of the poor, to the cries of the malnourished and diseased women and children of the third world? The study gives an answer with respect to five countries viz. Canada, Denmark, Netherlands, Norway and Sweden. It analyses all the official data available.

Giving aid to a poor country is not simple. A poor country does need support, but of what kind? Will giving capital investment for industry be helpful? Would "know-how" by itself be sufficient for creating positive change? Would a project of health care

and family welfare help to remove the main causes of poverty and help the people solve their own problems? Would financial support not turn them into seekers of doles and subsidies? Besides the commercial interests of the donor nations do not want to suffer. These are aspects of "aid giving".

The study documents in great detail with the help of many tables the efforts of the donor nations. All the five countries have tried to reach the goal of "One Percent" of the GNP in spite of the fact that other developed countries as a whole have lagged behind in their efforts. Norway stands out and it has continuously maintained a high profile aid programme.

Major aid has flowed from these countries through UN agencies, yet there has been an attempt to provide bilateral aid. There is also a recognition of the role of NGO's. But this study does not provide any details on receiving countries except their geographical locations. The impact of the aid and its implications to both parties do not fall in the purview of this analysis. This reduces its usefulness. It does give an insight into how donor countries behave and why they behave that way but it is not bothered about what happens to the receivers of the aid. It is centered on the interests of the five countries, in international affairs, aid policies, and commerce and their altruistic ideals.

The introduction of new environmental and consumer standards in the EEC, the report predicts, will increase environment pollution in the Third World. For example, EEC manufacturers unable to meet the high environmental standards at home after 1992 will transfer the "dirty" stages of their production to developing countries where regulations are lax or non-existent...

The report regrets there has not been sufficient research to estimate overall trade costs and benefits to particular countries. The community needs to take positive steps in the key area of trade, debt and aid to assist poor countries to adjust to and benefit from single market."

Excerpt

"While the future may contain unforeseen changes in the domestic and external environments, one observation about past performance is of particular importance: the aid policies of the five countries have shown a high degree of continuity and a low degree of change, despite the substantial changes which have taken place both in the domestic environment of the five donor countries and in the international environment, particularly in the Third World. The continuity of the main patterns of their aid policies covers a relatively long period of time 15-20 years. This implies that few dramatic changes may be expected in the basic patterns of their aid policies." (page 3/3)

"The main determinant as far as the large multilateral aid components are concerned, has been the systematic policy interest of middle powers in peace and stability and in a global system for the maintenance of these international common good concerns. The five countries have considered a large multilateral development assistance component an instrument to this end." (page 3/4) This augers well for the future. Effectiveness of multilateral agencies to the avowed aims will determine the aid programme.

"If the main trend so far continues, it is likely that in the future, foreign aid will be even more strongly directed towards the international common good than in the past. Although social and economic development will remain the core objective, foreign aid is likely to increasingly used as a tool to attack more immediate threats to mankind, where the connection between objectives and means would appear immediate and direct." (page 3/7) And three possible threats are considered.

- The threat to the future of our planet earth and to our common destiny, caused by the pollution of the biosphere and environmental degradation.
- The threat to health.
- Crisis Management - debt crisis - threat to international economic system and the private sector (the banking system) of some major powers in the North.

Jyotibhai Desai Vedchhi

The Glow on the Greens

We golfers have had a tough time of it lately. Golf courses not only take up a lot of land, but they have begun to be identified as major polluters because of the run-off of pesticides and fertilizers used to keep those greens and fairways the way we like them. In some low-industry areas (and when was the last time you saw a golf course next to a steel plant?) a golf course may actually be a region's largest polluter.

But Atomic Energy of Canada (AECL) has really gone too far. AECL is attempting to develop the world's first irradiated golf ball. Seriously. AECL scientists apparently figured out that irradiating a golf ball can change the molecular structure of the ball's core, producing larger molecules that may result in an 8% increase in the liveliness of the balls.

Not only we do believe this is an appalling perversion of nuclear technology, and results in the most frivolous production of radioactive waste we can imagine, it is also entirely illegal. The U.S. Golfing Association will simply never permit it. After all, some organizations still do have standards - even if the ball does glow in the dark.

(The Nuclear Monitor, May 7, 1990)

11th April 1990

A Message of Solidarity from Japan

We sincerely congratulate you on the anti-nuclear convention you are having on 25th and 26th of April. We express our whole-hearted solidarity. Since it has been quite difficult to know about the nuclear situation in your country, it was especially delightful to hear about the growing antinuclear movement in your country. Japan is one country which is still going ahead with its nuclear expansion programme, even after the Chernobyl accident. Despite the growing concerns about safety and the effects on human beings and the environment, Japan is still continuing with its nuclear fuel cycle plan, which envisages the production of the most deadly substance - plutonium. This is bad news not only for Japan but for the whole world. It is of special concern to our neighbours in Asia since the Japanese industry may be planning to expand in whole of Asia. However, we are happy to say that due to the widespread antinuclear movements throughout the country after the Chernobyl disaster, nowadays more people are aware of the dangers of nuclear plants. We have succeeded in electing three antinuclear Diet members from Aomori Prefecture where the nuclear fuel cycle facility is planned and also the Mayor of the site has declared a freeze on this plan. We have collected more than 2.5 million signatures asking for a nuclear phase out law, which will be submitted to the Diet on the 27th of April, the first day of the three day rally commemorating the 4th anniversary of Chernobyl disaster. We are also holding a big nation-wide festival on these three days including a symposium, peaceful demonstrations and an antinuke concert, with guest speakers from USSR, Germany and Korea. Let us join hands across the world to stop all nuclear related facilities. Let us join hands so that we can exchange information to halt all nuclear industry's movements before they actually occur. Let us join hands so that we can create a peaceful and happy environment for our children.

From all the participants

4th Commemoration of the Chernobyl Disaster

No Nukes One Earth Festival

Tokyo, Japan

28th and 29th April 1990

Recently we received a copy of a letter written to the Nuclear Power Corporation of India by Sigma Equipments - makers of a wide range of ovens and furnaces. We are reproducing it in the full since we hope it is the forerunner of many such letters by other public spirited entrepreneurs and industrialists.

M/s. Nuclear Power Corporation of India Ltd
. P.O. Anumala
Via Vyara 394651

We have received your tender enquiry (No:CMM/KAPP/4920 Due on 30.4.1990). We manufacture a wide range of ovens and furnaces. But as a matter of principle we do not deal with organisations concerned with atomic energy generation. Our stand is based on the following facts:

- Nuclear energy is the source of one of the most dangerous kinds of pollution. Radiation at any level is harmful to life and the environment.
- As radiation cannot be measured by ordinary means nor can be sensed by the people, atomic energy experts have succeeded in keeping the population in the dark.
- The harm that the radiation can cause may not be felt in the near future but can be passed on to the coming generations in the form of damaged genes.
- This subtle violence against life and nature is irreversible.
- There is no method yet devised to safely decommission a reactor after its short life of 25 years or so is over. This is a totally unjustifiable liability we thrust upon generations to come.
- For perpetuation of the evil of nuclear energy its various agencies are controlled by the power of the state. In countries where people could have a say, the dream of nuclear energy has evaporated.
- There is always the possibility of a major accident like that of Chernobyl as even for the most perfect machinery the human factor cannot be wholly eliminated.
- Nuclear power generation is a big drag on the progress of a poor country like India. With the same amount as sunk in this large scale ego trip, a lot more power can be generated in a decentralised and safer way.
- The cover-up provided by the government to the nuclear energy establishment in the form of the Atomic Energy Act is contrary to the spirit of democracy.
- The nuclear establishment has kept alive the option of a nuclear bomb which is madness of the highest level.

In view of the above considerations we have no option but to blacklist your organisation.

Kersi Sabawala Baroda

Along with this letter I am sending some cuttings. They are from the newspaper of the IEEE (The Institute of Electrical and Electronics Engineers) called 'The Institute'. I collected these cuttings due to my interest in nuclear issues as an electrical engineer looking into alternate energy research. As these articles are written extremely equivocally someone who can read between the lines on such issues needs to go through them. That is why I am sending them to you: maybe you can find something about the trends and attitudes regarding nuclear issues in the U.S.A. and use the material in *Anumukti*. I have been reading *Anumukti* for the past year or so. *Anumukti* is doing very valuable work. Its only limitation is a low circulation - can you send in some of your material to more widely read newspapers and magazines to educate a wider public about your stand?

Johara Shahbuddin,
14 Janpath,
New Delhi 110001

I am a member of the research team at the Centre for Industrial Safety and Environmental Concerns and I have been working in the field of high natural background radiation. This letter is to inform you that a group has been formed called "Women Against Nuclear Energy" (WANE).

We feel that till now other women's groups in Kerala have not considered nuclear issues seriously. Thus although we are concerned with other environmental and women's issues as well, we feel that prime importance needs to be given to nuclear issues. The present situation in Kerala is bad enough; we are having the country's first commercial food irradiation plant; a nuclear power plant is in the works; and there is very high natural background radiation in the coastal regions of Kollam.

At present we have six active members. Membership is not restricted to Kerala women only. In the future we plan to have a national network. We would love to hear from other groups and individuals interested in this idea. We are also planning to have a documentation system and exchange materials with others in this field.

All India Women's Conference is scheduled in December 1990 in Kerala and one of the themes of this conference is "Nuclear Energy and Women".

Ms. Nandini K Nair
WANE, X-526, Koyickal House,
Kottayam 2 Kerala

On 26th April, we had organised a seminar here at Calcutta. Physicist, Dr. A.L. Mukherjee presided over the meeting. Among other noted speakers were Prof Sushil Mukherjee — ex VC Calcutta University, Playwrite Badal Sirkar and Prof Sujay Basu. On that day our new journal *Safe Energy and Environment* was released.

Dipankar De 28, A.V.L. Street, Calcutta

Native peoples tell us that uranium should stay in the ground - but their voices are lost in the wind. Tribal peoples possess the knowledge of the past that could help heal and restore the earth - but their views are in conflict with the nuclearized, neo-colonial mindset of the multinational energy corporations. It is time we listened to the native peoples of the earth. Before corporate wealth capitalizing on our ignorance, wipes out their cultures. Their wisdom may hold our last chance.

The World Uranium Hearing will see to it that no one can say: "I was never told."

During the late spring of 1991 for one week in Copenhagen, Denmark, the Hearing will provide a forum for those indigenous peoples who have been victimized by our nuclear energy policies - together with those whose lives have been jeopardized by testing of nuclear weaponry - to make their grievances public. For more information please write:
The World Uranium Hearing e. V.
Praterinsel 4
D-8000 Munchen 22 West Germany

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