



ANUMUKTI

A Journal Devoted to Non-Nuclear India

Volume 5 Number 1

August/September 1991

Living Without Hope in Dungardih

It was hot and humid. Typical monsoon weather, but there had been no showers. After the long walk I was feeling very thirsty. In the distance was a farmer taking out young rice saplings for later transplantation. "Could I have a drink of water?" I asked. "You will have to go to my home," he answered. "Anyway, I am almost through here, come on, lets go."

We walked down the side of a large pond. Almost a lake. Lovely lush green scenery, There were some cattle grazing the grass growing on the banks of the pond at one end. "You can't drink the water of this pond. It is poisonous, gives you T.B. if you drink it. It is lucky that you have come here after the rains. During the summer the water dries up and the dust blows in the hot winds. It is terrible. One feels thirst all the time. Also it is very painful."

Just by the side of the pond is a small village. Some twenty, twenty five houses. I find that its name is Dungardih. I spy a well and advance towards it. "No! no. Don't drink water from there. That is also poisonous. The only water you can drink here is tap water supplied by the company (Uranium Corporation of India Ltd)."

"What about your animals? What water do they drink?" I enquire. "What can the poor creatures do?"

They drink the poisonous water from the pond."

Most of the men have gone to work. Work out here means employment with the company, either in the various mines or in the mill where the uranium ore is crushed and treated and converted to 'yellowcake'. Farming is not considered as 'work'. Only the "unfit" and the unemployed do it.

Some children are playing in a field. I join them. They all look very weak to me. Thin almost emaciated hands and legs. Sanatan Mardi better known by his nickname Daman, studies in the second standard. He has been born with no fingers on either of his legs or hands. His mother calls me over to her hut. "I have lost five children. They were very weak. All died within a few days of birth. My only hope and support is Daman."

A twenty-five year old youth Mohan from a neighbouring hut tells me, "I am 'unfit'. I worked for just three months. My younger brother still works in the mill. It is the air. That is what makes us unfit. My father died three years ago after being declared unfit"

"How do you know that your younger brother won't get unfit?" I asked. "Our health is bound to become bad. But what are we to do? One has to eat. We know that it is more

dangerous to work in uranium mines than in other mines. Look at Ghasia Majhi. He has this tumour in his neck. And there is my neighbour HodingMajhi. Sitting for the last five years at home after being declared unfit. His toes have had to be amputated. He still had fourteen years of service left. But why look at this village alone. Go to any village where there are uranium mines-Bhatin, Surdha, Narua, Rakha, Bhusabani-everywhere you will find the same thing. Skin diseases, Pain in the stomach, T.B., cancer, pain in the joints, terrible weakness and pain-that is our lot."

"What about a hospital? Where do you go for treatment?" "There is a hospital run by the company just near the mill (at Jaduguda). But there is no government hospital. This one is only meant for the employees. Some local people also go there. But it is very expensive. Most of us go to the government hospital at Tatanagar (40 km away)."

In the morning I had taken a lift in a truck to get to Bhatin mines. True to Narayanbhai's description in the song (see page 3-Editor) it was an open truck which drove right underneath a loading shed. Loading was done by automatic loaders. You press a button and a huge load of broken rock descends from the roof into the

From the Editor's

truck. It does this trice before a truck is full. Sometimes small lumps of the ore fall by the side. The driver or his 'cleaner' just pick them up and toss them over into the truck. Nobody wears any gloves or protective clothing. I ask a worker about this.

"The company does give uniforms but we can't wash them everyday. Some leave them in the changing rooms while others take them home. Masks are available but not for everybody."

Next to the Bhatin mines is a tailings pond. Waste water from the mines and the mill after uranium extraction is poured here. There is no "security." Not even a barbed wire fence. The tailings have become hardened, like stone. I meet another youth walking nearby. He shows me around. He says, "Many people come here. We talk to them. We tell them our sorrows. They take photographs. They go away. But there is no change in our condition. Is anyone working for that? Can you do anything to change our miserable lot?"

On my way back to Tatanagar I kept thinking of his words. They reminded me of one of Narayanbhai's songs:

"There is a struggle going on today between the forces of death and the powers of life."

The terrible situation faced by the poor Adivasis of Jaduguda—a situation not of their making—is a problem of survival for them. But is this a problem that they have to face and solve alone? Is it not a problem of the entire human race?

*"When will justice come to Athens?"
They asked Thucydides.*

And he answered,

"Justice will not come to Athens until those who are not injured are as indignant as those who are."

Suren Raut
Sampoorna Kranti Vidyalaya-
Vedchhi

Before we can talk about the bomb we have to talk about where the bomb comes from. It comes from the land, from the people. Before they build a bomb they have already destroyed the Indian people. They have destroyed their water and their fishing before they have destroyed people with the bomb. We have got to get to where it is happening, right here in the back yard of our own country.

Brian "Banjo" Ratt

Recently I met Rajmohan Gandhi in Bombay. Glancing over a copy of *Anumukti* he exclaimed, "What! You have been bringing it out for such a longtime."

He probably meant that all that could have been said on the nuclear issue must have already been said and there was no point in stretching this harrangue any further. Needless to say that I don't agree with him, though I do feel that *Anumukti* ought to be in also Hindi and in other Indian languages for it to have any impact. All of us here at Vedchhi intend to make every effort to have a Hindi *Anumukti* out before the next year. The main bottleneck in achieving this is the absence of a computer at Vedchhi and if any of our readers has a computer to donate we would be most grateful.

I am in this wishes were horses mood because this is *Anumukti's* 25th issue. We have decided to make it a special by focussing our attention on the root of the problem—the front end of the nuclear fuel cycle—the issue of uranium mining.

The mining issue is really three interlinked issues rolled into one. The health problems of uranium miners and their families

- The contamination caused by the wastes generated during the milling process
- The disregard for the rights of the indigenous populations of uranium mining areas

Canada, U.S., Central Europe, France and French Africa, Namibia, Australia and South Africa are the major uranium producing areas of the world. India, fortunately does not have much uranium, though it has spent almost as much as the major producers in desperately exploring for ore.

Except for some high grade deposits found only in Canada, uranium ore usually contains only a few tenths of a percent uranium. All the rest of the rock is considered waste. Hence Uranium mines produce enormously huge quantities of waste known as 'tailings' Although the uranium extraction (milling) processes are able to remove almost 90% of the uranium they remove very little of the other radionuclides present. Thus tailings contain about 85% of the total radioactivity of the rock. The Jaduguda mines are specially bad since the quality of the ore being mined is probably the worst in the world. East German mines (where the uranium content was three times greater than that found at Jaduguda) were closed last year since they were hopelessly uneconomic. However, we not only continue to mine and mill at Jaduguda but are in the process of constructing another bigger mill nearby at Turamdih to process even worse quality ore. And the Uranium Corporation of India makes a profit. Such are the wonders of "self reliance" in the nuclear field.

Getting to know about the consequences of uranium mining from all over the world, only a single conclusion can be reached—the motto of the world-wide movement against uranium mining:

LEAVE URANIUM IN THE GROUND

The Price Jaduguda Has Paid

*Go to the mines of Jaduguda
From where come the uranium loads
See how it is carried in open trucks,
and falls in middle of roads.
Go to the reactors of RAPP
How radiation has spread!
Look at the workers of Tarapur
How they have been misled.
Very Frightening, very frightening, very frightening indeed
Is the Maya of atomic energy*

Narayan Desai

There was a time when Jaduguda used to be a place of scenic beauty. Dense green forests, low mountains, small villages surrounded by hills, hardworking people, playful and ever-smiling children, open air, flowing streams; everything was once here!

But they had one more thing—uranium in the womb of mother Earth. Exploring man got to know of this. And then atomic man had to grab it at all costs. The bowels of the Earth were torn open and digging and ever more digging was done to get the uranium out. The hunger of nuclear reactors for uranium was satisfied but the people of neighbouring 1200 villages have become both hungry and naked.

People whose sustenance was the forest, became dispossessed. Jungles got destroyed, the hills became barren and the people became powerless.

Prohibited Area

Fact about the uranium being in the ground was known in 1950s itself. But it was in 1967 that uranium mining and processing equipment came to the area. Along with the equipment, operating workers came, mining scientists came, officials came—all of them came from outside. Buildings were built, houses were built for them to stay. Those who had come without houses now had homes, but those who had home and lived here for long, became homeless. Some went into distant hills, some to Naroana, some wandered around—they are wandering still.

This green self contained Adivasi (aboriginal) village in the Singbhum district of Bihar became part of the mainstream of development. Automobiles and vehicles started plying to and fro from Rakha Mines station to Jaduguda. The environment became smoke filled; clean Gura river became dirty—1200 villages were consumed and Jaduguda became an industrial township. Today this place provides the uranium for all the Indian reactors with the exception of Tarapur.

Those villages and people who refused to be displaced in the beginning are now slowly being squeezed out. Radioactive pollution is increasing rapidly. However, as yet, even after 24 years, there is no instrument to measure this pollution.

Waste water has spread far and wide. A population of nearly 5,500 people is suffering this water pollution. Chati Kocha, Rani Kocha, Durgardih, Lakhi, Talaitand and other villages are dependent on the waters of a lake which carries a signboard in English — "**Prohibited Area.**" The villagers do not understand English but they do understand and know that when they breathe, drink and eat, the air they breathe, the water they drink and the food they eat are all poisonous.

An Epidemic of Deformities

The village in the immediate vicinity of the tailing pond is Chati Kocha. A little farther is Rani Kocha. The total population of both these villages com-

bined is around 500 of whom 100 are children. A survey found that two children are not able to see at all, six are able to see dimly, four are hearing impaired while eight are mentally retarded. Half the women complained of white discharge while 47% complained of early and frequent menses. In the last five years, eight women have given birth to deformed children who have died within a week of birth. In these five years there have been more than 30 spontaneous abortions. And all the women complain of fatigue, weakness and depression.

Half the men too complain of tiredness and depression. The amount of lymphocytes in the blood of 54 per cent of the people are quite high indicating a disposition towards cancer.

The condition of the children and the plant workers is terrible. Seven year old Manoj has both his legs turned outwards below the knees. He cannot walk properly. Eight year old Mani's left hand comes only till the elbow. Eight year old Shiv is a patient of thalassaemia and requires frequent blood transfusions. Nine year old Tulsi also suffers from the same disease. Munna, who is twelve years old suffers from megacolon. He can neither speak, nor walk nor do anything with his hands.

Elders of the area say that earlier it wasn't like this. Those families which have had deformed babies had not seen a case of deformity for at least five generations. Thus, the general public opinion in the area feels that all these illnesses and deformities are

due to uranium mining and processing.

Official Claims

Uranium Corporation of India Ltd (UCIL) says that radioactivity is spreading very slowly and is well within internationally accepted "safe limits." According to officials, the amount of uranium found in the ore here is only 0.04 to 0.06 per cent.

The waste remaining after uranium processing is taking from the mill through a long pipe to the tailing pond. This pond covers an area of 3.6 square kilometers. The pipe is broken in a number of places and the water keeps leaking. Adivasi women from surrounding villages use this water for all domestic purposes from drinking to bathing and cooking.

The administration officials claim that once uranium is extracted from the uranite, the remaining portion of the ores are not radioactive. The wastes contain only 0.005 milligrams per litre of uranium. Water after use is thrown into the Gura river which goes and meets Subarnarekha and

tias the pollution from Jaduguda spreads all over Singbhum.

At the time of UCIL planning the planners had given a clear warning that the wastes should not be exposed

The Next Sacrificial Spot

A major deposit of uranium has been found at Domiasiat, 140 km south-west of Shillong in North-East India. It is claimed that the deposit is "the largest, richest, near-surface and low cost sandstone type uranium deposit discovered in India so far."

The ores are spread over a 10 square kilometer area at depths varying from 8 to 47 meters from the surface. Six layers of varying dimensions with grades up to 0.41 per cent uranium oxide have been delineated by drilling.

Indian Express 13 August 1991

untended and neither should they be released to the rivers. Till now the UCIL administration has been lying that the radioactivity posed no risk at all but now plans are afoot to set up an effluent treatment plant at the cost of Rupees One crore. This is being done after an investigation by central authorities and the International Committee for Radiological Protection. It is due to this pressure

that attempts are now being made to separate the effluent waters from reaching the Subarnarekha.

A Dump for Outside Waste

Radioactive waste from the Nuclear Fuel Complex at Hyderabad and the Variable Energy Cyclotron Centre at Calcutta is also dumped here in the pond. Earlier this waste used to be kept in Hyderabad, but in 1982 four workers died while working in midst of this waste. At the time there were strong protest from neighbouring residents against waste storage in the vicinity. It is only after that that this waste has started coming to this Adivasi area bearing its deathly sting.

While the UCIL management doesn't accept the fact that radioactivity has in any way been harmful to either people, animals, trees or plants, the high officials have made arrangements for their own food to come from a government farm some 44 kilometers away.

*Ms Manimala
Dharmayug 4 March, 1990.
(Translated from Hindi)*

A Primer on Uranium Mining

- Why leave uranium in the ground?

No matter how uranium is mined, there will be radioactive contamination of the environment. Uranium deposits exist today because of their isolation from air and water over geological time scales. In its natural state, uranium, other radioactive materials, and heavy metals are in the form of solid rocks and therefore only tiny amounts if any can escape to the surrounding environment.

- Why are the products of uranium mining dangerous?

Uranium being radioactive keeps constantly changing into other substan-

ces, (uranium daughters) most of which are also radioactive. Thus, uranium contributes a very small percentage to the total radioactivity of the ore. After milling though most of the uranium is separated, more than 85% of the radioactivity of the ore lands up in the tailings. Since some of these daughters are especially long-lived, the tailings constitute a radiological hazard essentially for ever.

- What are the most dangerous uranium 'daughters'?

Radium-226 and Radon-222 are especially dangerous. Radium because it accumulates in the bone and is harm-

ful to life-forms at very low concentrations. (See *Anumukti* Vol.4 No.5 April/May 1991). Radon, is most dangerous because, being a gas it is the only uranium decay product that can be breathed into the body. It also emits the most dangerous form of radioactivity—a radiation—which causes greater damage to lung tissue than other forms of radioactivity. Thirdly, radon decays rather rapidly and radon daughters decay faster still. Thus radon in the lungs just means a rapid burst of radioactive showers on the surrounding tissues. Accumulation of radon in underground tunnels is the reason why

more uranium miners die of lung cancer than other miners.

•What happens at the uranium mill?

The rock is crushed and ground to a fine sand and mixed with large amounts of water and chemicals. The chemicals are either acids or bases, depending upon the pH of the ore. In India, acidic leaching is done using sulphuric acid. The solution is filtered, concentrated, purified and uranium is precipitated in the form of magnesium diuranate commonly known as 'Tellow Cake'. Two types of wastes (rejects in nukespeak) are generated, solid wastes or tailings and liquid wastes. Uranium tailing pose the greatest long-term threat, while leaks, spills and groundwater pollution by liquid wastes constitute the major short to medium term impact.

•Is radioactive pollution the only hazard of uranium mining?

No, tailings contain heavy metals such as lead, zinc, manganese, cadmium, and arsenic whose rates of release to the environment must also be controlled. These elements do not decrease in toxicity with time since there is no decay process. They simply last forever. Heavy metals poison-

ing is usually noticeable long before any effects of radioactivity. Huge quantities of process chemicals are used in the milling process and then dumped into the environment.

•Are there different ways of mining uranium and which one is better?

Uranium is mined in three ways and each method has its own unique set of environmental problems:

- **Open-Cut Mining**
This is resorted in places where there is high grade ore fairly close to the surface as in Canada, Australia, U.S., South Africa. The whole area is bulldozed, and roads, plant and dams to hold the tailings are built. Environmental problems result from the great amount of surface contamination caused. (See the stories on Canadian and Australian mines)
- **Underground Mining**
When ore is situated deep underground, then usually shafts are drilled and the mining is done underground as at Jaduguda. There have been a large number of reports from U.S. and Europe of mines being plagued by ventilation problems in the past, leading to excessive exposure of workers to radon gas. (See the stories on Jaduguda and on Red Rock in U.S.)

- **'In-situ Leaching'**
An acidic solution is forced through the ore-body itself to dissolve the uranium. This has been done in a number of places in U.S.A. and in what was formerly East Germany. The environmental problems here are obvious, with the ever present possibility that the solution of sulphuric acid, oxidizing agent, uranium and other toxic heavy metals would end up in somebody's drinking water. (See the report on the restoration problems in East German mines.)

•Can anything be done to mitigate the effects of uranium mining and reduce the contamination?

First and foremost, stop producing any more waste. Other steps include having physical barriers so that people, animals and birds do not come in contact with contaminated areas. Provide alternatives so that people and their animals are not forced to drink contaminated water or grow food on contaminated land.

Sources: Miles Goldstick's book "Voices from Wollaston Lake" (See Review in this issue, page 10) and John Hallam's article on uranium mining in Australia.

Bury My Lungs at Red Rock

Red Rock was one of the first spots where the U.S. Atomic Energy Commission and the post war uranium companies began prospecting for the radioactive fuel. Like many of the other problems stemming from industrial and mineral development on the indigenous reservation, the misfortune of the people of Red Rock had its origins in the community's poverty and the lack of education. The Government and the energy companies were willing to take advantage of that underdevelopment.

In New Mexico, the nuclear story began with the 1945 Trinity Test, which confirmed that an atomic bomb could be successfully exploded. Three

years later, the newly formed AEC began authorizing purchases of uranium to stockpile for its nuclear weapons arsenal. It started providing incentives to mining companies to find high-grade uranium deposits. It was during this period that Kerr McGee opened several shallow mines near Red Rock and set up a mill to process the uranium ore in nearby Shiprock, New Mexico.

When the mines uranium supply was exhausted in 1968, (the same year that Jaduguda mines started operation - Editor), they were abandoned, leaving contaminated build-up and more than seventy acres of uranium wastes. Also left behind

were several hundred Navajo miners who had been exposed to deadly doses of radioactive gases and particulates.

Then, as now, the reservation offered a profitable opportunity to companies like Kerr McGee. On the reservation there were no taxes, little regulation and cheap labour. "The company came around and said there were mining jobs opening up, but they didn't tell us a thing about the dangers of uranium mining," former miner Terry Light recalls.

John H Lee, who lives with his wife in a one-room unplastered home near the Red Rock area, worked as a miner for more than twenty years. He com-

plains of spitting blood and stabs of pain through his lungs — the signs of a developing lung cancer. "I now feel sick all during the day so I just sit back in the chair and rest," Lee says, noting that he had seen most of his co-workers die. He has no doubt that his illness comes from his mining work.

"It made us sick to go into those mines," Lee remembers. "The white men sat outside the mines and pushed us Navajos into those dusty mines right after dynamiting."

"They chased us in there like we were slaves." recalls another miner. "I remember that it used to be so dusty that we were always spitting up black stuff and how when we went home we all had headaches from breathing all that contamination.

The major killer in uranium mines is the radioactive inert gas, radon that escapes from the uranium ore. The dangers of radon had been known for at least fifty years before the mines were opened, but the AEC refused to admit that there was any danger at all present in uranium mining for over twenty years of nuclear energy development.

"Those mines had more than hundred times the radioactivity allowed today." says La Verne Husen, director of Public Health Service in Shiprock. "They weren't really mines, just holes and tunnels dug outside into the cliffs. Inside the mines were like radiation chambers, giving off unregulated and unmeasured amounts of radon. The problem was that back in the 1950s nobody was riding herd on the companies. It was a get-rich-quick scheme that took ad-

vantage of Navajo miners who didn't know what radioactivity was or anything about its hazards.

Husen says that the two main problems caused by uranium mining were lung cancer and pulmonary Fibrosis, where silica dust particles become embedded in lung tissue, eventually making it difficult to breathe.

"In the last twenty years, lung cancer rates amongst Navahos have increased by eighty-five times."

"The lung cancer comes from breathing radon gas," Husen adds. "It stays in the lungs and continues emitting radiation — sort of like walking

The Death of Rio Puerco

Navahos need safe drinking water. Instead, what they have got for last twelve years, are "studies"

Church Rock, New Mexico, would seem an improbable spot for a nuclear disaster. A dusty cluster of industrial machinery set in the arid mesas of the great Southwest U.S., its most distinguishing feature might be considered a large pond of murky liquid, unusual in such dry terrain. Church Rock also hosts a series of underground uranium mine shafts, a mill and a scattered community of Navajo families. A deep gully leads from the mine site into the Rio Puerco, which once flowed only when fed by spring rains. Now, it is wet year round, bolstered by water pumped from mine shafts to keep them from flooding. The 350 families who water livestock in the Rio Puerco rely on their small herds to eke out a meager existence. During the hot days of desert summer local children would play in the stream as their parents tended the goats, sheep and cattle.

In the early morning hours of July 16, 1979—just fourteen

weeks after the accident at Three Mile Island—all of that changed. The then brand-new Church Rock tailings dam burst, releasing a million gallons of acidic tailings and 1200 tons of solid tailings into the Rio Puerco river. The spill extended 40 miles downstream through the Navajo territory into the neighbouring state of Arizona. No one was killed in the actual flood. But along the way it left residues of radioactive uranium, thorium, radium, and polonium as well as traces of metals such as cadmium, aluminum, magnesium, manganese, molybdenum, nickel, selenium, sodium, vanadium, zinc, iron, lead and high concentrations of sulphates. The water of the Rio Puerco and of the wells near it was rendered unfit for consumption. It remains so still. Livestock from the area cannot be marketed.

Except for the bomb tests, Church Rock was probably the

biggest single release of radioactive poisons on American soil. Ironically it occurred thirty four years to the day after the first atomic test explosion at Trinity, New Mexico, not far away.

However, the spill was not an isolated incident of environmental abuse of Rio Puerco. For 18 years from 1968 to 1986 United Nuclear Corporation and Kerr-McGee mines continued to discharge uranium mine water into the river at the rate of 5,000 gallons per minute.

River contamination is still being "studied". According to a report issued by Robert Webb, a hydrologist for the U.S. Geological Survey, surface water of the Rio Puerco has sometimes between 10 to 100 times the maximum allowed level of radioactivity.

Sources: Killing Our Own and WISE News Communiqué.

around with an atom bomb in your lungs."

Lung cancer was formerly a rare disease amongst Navajos. In a seven year study completed in 1972, no cases of lung cancer were found in a review of 50,000 chest x-rays of Navajos. But the rates of lung cancers amongst Navajos have soared because of exposure to radiation. Dr Gerald Buker reported in a monograph entitled "Uranium Mining and Lung Cancer Amongst Navajo Indians." that the risk of lung cancer had increased by a factor of at least eighty five among Navajo uranium miners.

"It is pretty hard here." comments Ray Joe, a former uranium miner in the Red Rock area. It's like we have been having a war or something like that here — with so many of our men dead and dying or sick."

There are ten million tons of radioactive mess left on the Navajo reservation alone by Kerr McGee and other companies. The Department of Energy has estimated that it would cost \$20 million (1978) to clean up these tailing piles, which due to their proximity to community settlements, pose a serious risk to the health of the Navajos. For the last ten years since 1968, wind and water erosion have

spread radioactivity far outside the original perimeter of the uranium mills.

A two-year preliminary study amongst the Navajo found an unusually high number of birth defects, including hydrocephaly, microcephaly, downs syndrome, cleft lip, cleft palate and epilepsy among more than 500 babies born between 1967 and 1976. Earlier surveys had found a serious increase in bone, ovarian and testicular cancers among children living in the area of former uranium activity.

Like countless other tragedies in the history of Native Americans, this one remains lost in the dust of the vast, dry stretches of the reservations.

Postscript 1990

In 1979 U.S. Congress passed the Uranium Mill Tailings Radiation Control Act (UMTRCA). The purpose of the Act was to set up U.S. standards for the clean-up of uranium mill tailings, implementing:

- an impervious layer under the pile to prevent seepage to groundwater
- a protective cover of several layers to prevent erosion, seepage of rain-water into the pile and emanation of radon to the atmosphere

- provision of long-term environmental monitoring and maintenance funds

However, during the eleven years since the passage of the Act only 26 million tons out of the 175 million tons originating from the uranium milled for nuclear weapons have been reclaimed. Only three out of the more than twenty piles were moved to safer locations during reclamation. Thus, even most of the 'reclaimed' piles still present a long-term hazard to environment and health since they could not be lined with an impervious layer to prevent seepage to groundwater. For this reclamation to be carried out the U.S. Government has already spent over \$2 billion.

The major portion of the tailings originate from uranium mined for power generation purposes and has to be reclaimed by the uranium industry. This industry has repeatedly tried to weaken standards and to pass the cost of the clean-up on to others, so far unsuccessfully. But it has managed to delay the clean-up of these enormous piles.

Sources: Tom Barry's article "Bury my lungs at Red Rock" in "First There Was The Bomb ...and WISE News Communique 326/327, 9th Feb. 1990

Joyless in Japan

High incidence of deaths from lung cancer have been observed among miners and local residents living near former uranium mines in Tottori Prefecture, Japan. The mines were operated by the Power Reactor and Nuclear Fuel Development Corporation (DONEN) in the late 50s and early 60s. During 1957-61, about 150 miners worked in the mine. Kyodo News Service sources say that more than ten miners and residents in the vicinity have died of cancer. Of these seven had lung cancer.

DONEN claimed that there was no relationship between the uranium mines and lung cancer. Many resi-

dents, however, spoke not only about the high rate of cancer in the area, but charged that the corporation did not warn about the dangers of radiation before the miners began working. Nor did the corporation require the miners to wear protective masks. DONEN countered that it did provide the masks, but a promotional pamphlet issued by the company contains photographs of T-shirt clad miners working in the mine without wearing masks. (*Most Uranium Corporation of India Ltd promotional brochures contain similar pictures - Editor.*)

Japan Times reporting on the incident, noted that high occurrences of lung cancer of uranium miners had also been reported from U.S. According to a U.S. public health report, of the nearly 6,000 miners who worked during the 1940s to 1960s, 10 to 20 per cent had died or will die of lung cancer. Many groups would put these percentages even higher. According to Big Mountain Legal Office in the U.S., of the 150 miners working at Kerr-McGee mines, 38 were dead of lung cancer and another 95 had cancer and lung diseases by 1980. Other health problems include a high rate of extremely rare birth defects such as Kneist Syndrome.

Abuse of Aboriginal Rights

Three companies now control over half the entire world's uranium production, and more than two-thirds all uranium reserves. Two of these are government-controlled (France's COGEMA and the joint Federal Canadian /Saskatchewan provincial government's CAMECO). The third is the mainly British owned giant RTZ (formerly Rio Tinto Zinc), which is the world's most powerful mining company.

RTZ is the world's leading copper producer, its third most important gold producer, a crucial supplier of the strategic metal, titanium (used in aircraft industry), and on the top of the heap of western uranium producers.

Conzinc Rio Tinto (CRT) is the Australian subsidiary of RTZ. Its exploration lease in the Rudall River National Park in Western Australia has been described as potentially a three-act nightmare: a uranium mine, inside a national park, on Aboriginal land.

The 1.5 million hectare Rudall River National Park is the largest in Western Australia. The Aboriginal Martujarra tribe who are the traditional owners of the land, call it Karalamilyi. It provides one of the best examples of an undisturbed desert ecosystem in Australia and perhaps the world.

The nearest Aboriginal communities at Punmu and Pangurr are not legally recognised as landowners but have attempted since 1981 to establish viable settlements in the region. The story of last two hundred years has been one in which many Aboriginal people have lost access to their land and traditions, and have had their cultural and religious beliefs trampled upon.

This isn't the first time that CRA has mined uranium on Aboriginal land. CRA operated the Rum Jungle

mine in the Northern Territory between 1953 and 1971, initially to supply Britain with uranium for its weapons testing programme. In that time a tailings dam collapsed polluting the Finnis River with radioactive waste and heavy metals. It has been biologically dead for years now.

In 1962, CRA's subsidiary, Comalco,

Uranium was discovered in the western part of the park by CRA in late 1985. Australia has a "three mines" policy which does not allow a new mine to start operations. Ostensibly only involved in exploration activities, CRA has in reality established a small-scale mining operation in the mountainous catchment basin of the Rudall River. A conservationist who flew over the site in mid-1986, confirmed the existence of a permanent camp with 40-60 personnel and 4 drilling rigs operating inside the park. Convinced that other uranium deposits are to be found in the region, CRA has taken out exploration licenses on virtually the entire southern half of the park.

Strong pressure from Aboriginal people and the anti-uranium mining activists resulted in a statement in July last year from the Prime Minister saying that the Rudall River project

would not go ahead. However, the clout of the mining giants became soon apparent when in April this year the same government brought forth new legislation which would allow the mining to go through. Although there is wide public support for a complete ban on mining in national parks the new legislation bans mining in only 57 out of 60 sites. It allows for continued access to areas considered to be of particular economic importance and would 'compensate' the park for the land lost to mining by addition of equivalent areas from elsewhere. Needless to add that while bringing forth this piece of legislation the Western Australia's Labour Government did not consult the people most affected by this decision nor did it consider the rights, welfare and the interests of the Martujarra people.

Sources:

The Third Opinion & WISE News
Communique: 351,336,325,307,282

"But I have promises to keep ..."

The Promise

The environmental impact statement for the Roxby Downs uranium-gold-copper mine in South Australia predicted in 1982 that once the mine reached full production there'd be 10,000 jobs, \$18-28 million in royalties paid to the state, and a boost in state exports by 32 to 43 percent. In 1989 the mine reached its full production capacity.

The Reality

800 jobs, \$3 million in royalties paid to the state and exports of 4 percent. The \$3 million falls well short of the interest the government has to pay on the \$50 million it borrowed to build schools, roads and other community facilities for the mining associated town of Olympic Dam.

bulldozed Aboriginal houses and a church to end opposition to bauxite mining on Cape York. In 1980, CRA flew three of the 35 traditional owners of the Warmun community to Perth and inveigled them to sign their land over to diamond mining. Leaked documents from that time foretell the kind of treatment Aborigines around Karalamilyi may receive... 'If CRA... can resist moves to meet Aboriginal compensation claims ...its savings will be substantially greater than the proposed expenditure on the company's public relations programme next year.'

Rudall River is known for its strong dust storms around the beginning of the cyclone season. The Western Desert Land Council says local Aborigines are aware of radiation sickness and are worried that increased mineral exploration will destroy plants and animals in the park.

Undoing is Not Easy

Uranium Mining in German Democratic Republic

Uranium mining began in East Germany in 1946. The uranium was used for Soviet weapons production. The mining operation was carried out under the auspices of a joint Soviet-East German company SDAG 'Wismut'. By the time mining operation ceased in 1990 with German unification, GDR was the third largest uranium producer in the world after Canada and U.S.

The main reason for the closure of the mines was the fact that with the collapse of uranium prices during the 1980s, mining had long become terribly uneconomical, since the ore left was generally of poor quality (0.1%-0.09%). For comparison's sake, Canadian ore is ten to six hundred times richer in uranium. (The ore now being mined at Jaduguda and from which Uranium Corporation of India Ltd claims "profits" year after year, is just 0.03%—0.04%. Wonders never cease! - Editor)

The main mining area is in the south of the country in the Gera-Ronneburg region. This region is known as the "uranium province", and is now in deep economic recession with the closure of the mines. Wismut used to employ over 40,000 people till late last year.

The whole area has become an ecological disaster zone. Ore with too little uranium for extraction, along with wastes from the mines and mills is stored in enormous piles of tailings, covering an area of several square kilometers. Rain water washes the tailings away, endangering the ground water. Radon gas from inside the mines is simply pumped up to the ground and the pipes bringing the radon can be found in the middle of farm land still in use.

Data available on radiation levels in the whole area is still very poor. In some homes in the city of Schneeberg, radon levels above 30,000 Bequerels/cubic meter have been recorded. ("Acceptable" levels are just 250 Bq/cubic meter. In the U.S., the acceptable limit for radon in homes is just 150 Bq/cubic meter.) The levels

found in homes in Schneeberg are considered unacceptable even for uranium miners. They have probably been caused by former silver mining activities in the Erzebirge mountains.

▪ *Radon levels found in homes in Schneeberg are considered unacceptable even for uranium miners.*

A study conducted by an East Berlin doctors' collective and sponsored by the Lutheran church, found that rates for leukaemia and other cancers are significantly above average in this region. The study also found above average incidence of hair loss among both miners and other inhabitants, cases of impotence and testes cancer among miners and miscarriages and birth defects in miners' families.

The Schmirchau mine is the largest in the Gera-Ronneburg area. Four thousand seven hundred workers used to work there. Originally it had an open-pit mine with a depth of 240 meters; this has been partially refilled and mining was then continued up to 500 meters underground.

The uranium was milled at Seelingstadt uranium mill. Its annual capacity was approximately 3 million tonnes of ore. Its tailings pile is one of the largest tailings pile in the world and contains a total of 86 million metric tonnes of solid mill tailing and 51 million cubic meters of liquids in two ponds covering an area of 2.5 square kilometers.

The mill formerly used an acid leach process, but since 1990 it has used an alkaline leach process to achieve some neutralization in the tailings pond. The tailings contain an average of 11 Bq/gram of Radium-226 and a total of two million tons of pyrite. Radium-226 decays to produce radon. It also

presents a health hazard on its own by seepage into ground water and rivers. Pyrite when mixed with air and water creates sulphuric acid and is thus lethal to plants downstream. It also helps in the migration of heavy toxic metals. The pyrite problem can persist for hundreds of years.

Now, a major effort is being made to reclaim and stabilize all the piles to reduce the health hazards. Under this plan for Schmirchau, 43.2 million cubic meters of material from different waste rock and low grade ore piles will be dumped into the former open pit mine there. After the end of all reclamation work, ground water will no longer be pumped out. Water will fill the whole underground tunnel system as well as the open pit being backfilled. Thus all materials now being dumped into the pit are expected to be in contact with groundwater for an indefinite period of time.

Western ecologists have criticised the plan. For one thing it is being executed without observing the legal procedure necessary under the new unified German law. The most serious cause for worry is however the persistent rumours that hazardous materials might have been dumped into the pit in earlier years under the previous government. However now it is probably impossible to remove parts of the backfill to confirm these suspicions.

The costs estimated by Wismut for the clean-up are DM 5 billion. However, this has been disputed by a study conducted by Oko Institute in FRG and the Southwest Research and Information Center in New Mexico who believe that the costs shall rise to DM 15 billion. Needless to say that neither the GDR government nor the Soviet Union had made any provisions for dealing with these costs.

Sources: WISE News Communiqué Nos. 346,341,340,334,324/323,299

Voices From Wollaston Lake

Resistance Against Uranium Mining and Genocide in Northern Saskatchewan

Miles Goldstick

Earth Embassy and WISE 1987

Saskatchewan province in the west of Canada is the "Saudi Arabia of the uranium mining industry". The extra-ordinarily rich deposits—usually 100 to 1000 times richer in uranium than those being exploited in India—found there have made Canada the largest producer of uranium in the world. The same callous disregard for the environment and for the rights of the local population (usually indigenous people) that characterize uranium mining in the rest of the world including India, hold in equal if not greater measure in Saskatchewan too. Yet I have not separately included a 'story' about uranium mining there in this issue of *Anumukti*. The reason I have not is

because this book "Voices From Wollaston Lake" says it all in an eloquent and moving manner. The book is available with the author and he would gladly send it to activists for just the shipping costs.

WISE Uranium Special

WISE plans to publish a special edition on uranium shortly. The purpose is to provide support for local resistance to uranium mining. Protest and support groups are urged to send their contributions (particularly information on their needs and local campaign updates) to Miles Goldstick Box 1633, S-742 91 Osthhammar, Sweden

The book can be divided into three parts. One part tries to present the contrast between two diametrically opposed world-views - that of the local indigenous people who are

trying to live in harmony with their surroundings verses the dominance and the destruction of the land caused by the uranium mines. Another part of the book presents information on uranium mining, the 'uses'(abuses) of uranium, effects of mining on the environment and on people's health, while the last part of the book is the story of the struggle waged by the Chipewyan and people against the destruction of their land from 1972 to 1985 and especially the story of the unprecedented blockade of mining operations in June 1985. This action was the first coordinated nonviolent action against uranium industry in Canada.

Today it often seems as if Gandhi is no longer relevant to 'modern' India, what with "freeing the shackles on Indian industry" and the dire necessity of IMF loans for development. Echoing from the other side of the world, one of the voices which beckon from Wollaston Lake is the voice of Gandhi. It makes the book doubly relevant in India.

German Pollution Fears

The Koenigstein mine near Dresden started operation as a conventional underground uranium mine in the 1960s. Underground leach tests were first performed in 1969. In 1984, conventional mining was completely replaced by underground leach technology.

In-situ leach mining is a process where a liquid leaching agent is pressed through a deposit and the liquid caught on the other side. Uranium and other minerals are then removed from the liquid in a recovery plant. The purified liquid may then be reinjected into the deposit.

The process is only successful under rather special geological conditions. The uranium must be located in a layer of permeable sandstone confined between impermeable layers. At Koenigstein, uranium was mined from an aquifer at a depth of 150-280 meters below the surface. Unfortunately, mining activity has connected this aquifer with the one above it which is used to supply drinking water to a densely populated area. Separating the aquifers is one very difficult part of the restoration programme.

800,000 cubic meters of leach liquid circulated between the ore zone and the recovery plant. Over 1,000,000 cubic meters of the liquid are still present in the ore. As the ore zone aquifer is not impervious, there was inflow of water into the leach liquid circuit. Therefore waste water had to be treated before being released into the Elbe river. This treatment produced enormous amounts of sludge that was dried and stored on waste piles. Besides this, water flowing into the underground tunnel system had to be pumped out of the mine and treated before being released into the Elbe. The total amount of treated water released in 1989 was 5.3 million cubic meters. Also released with this water was 1.7 billion Becquerels of radium-226 which was dissolved in the water.

The mine reclamation plan hopes to neutralize the leaching liquid in the ore zone by injection of limewash for at least the next ten years and by then allowing the mine to flood. However, there has not been extensive research on this subject to prove whether this would work in the long term. Attempts will also be made to prevent unequal settling of the rock layers by blasting the remaining pillars in the mine but the effectiveness of this step is also questionable.

The Peril in Peringome

Nuclear Power Corporation has finally selected the site for the proposed nuclear power station in Kerala. Successive State Governments—both the present United Democratic Front (UDF) as well as the previous Marxist led Left Democratic Front (LDF)—have been giving full cooperation in this proposal regardless of the wishes of the people.

Peringome is situated just 12 km from the thickly populated municipal town of Payyanur. The place will be shortly taken over by Nuclear Power Corporation according to a statement made recently by Department of Atomic Energy chief, Dr.P.K.Iyengar at Thiruvandapuram.

In the early eighties, even before the great tragedy at Chernobyl, the Government of Kerala had to retreat from an infamous attempt to construct a nuclear power plant at Bhoothathanakettu in Ernakulam district. There had been stiff opposition to the move from the people, and just before the 1984 elections the ruling party had made a public statement to the effect that the move was being abandoned in view of the strong public opposition.

Awareness about the ecological, socio-political and other aspects of the nuclear issue has been gaining momentum in many parts of Kerala, thanks to the ceaseless efforts of environmental groups, antinuclear activists and intellectuals. People's protest has grown along with awareness.

Strangely enough, the nuclear establishment seems to be in no mood to give up its pursuit to extend their empire even to the most densely populated state of Kerala. It appears as though the nuclear monster needs to be settled at one place or another within Kerala. During last one year, members of the Nuclear Power Corporation's Site Selection Commit-

*In the name of the thousands who died in Hiroshima, and those who are still dying, we pledge:
We will be constantly vigilant against nuclear power.
Three Mile Island, Windscale, Kyshtim, Chernobyl —
In the name of the victims of these disasters
which turned acres of fertile land into a vast expanse of dead desert,
We won't allow the use of nuclear power
We are obliged not to pollute our air, water and the Earth,
while bequeathing them to our children, humanity,
We shall not be unfaithful to this obligation
We uphold our belief in the innate goodness of humanikind
We cannot allow any one to let loose the mysterious and uncontrolled evils of nuclear power.
What they told us — that nuclear energy is for electricity
We now realize to be a big lie.
We are against bombs and wars,
And the silent wars of reactors
We won't throw our children in a sea of radiation.
Forgetting all our petty differences,
And joining hands we vow
To fight against this nuclear monster
And defeat it at all costs.
On this the Forty sixth anniversary of Hiroshima
This is our solemn oath*

tee visited many places throughout the state. Despite the secrecy surrounding these visits, the nucleocrats were greeted with loud protests by the people of the respective places viz. Peringome (Kannur district), Bela (Kasargod district) and Kothamangalm (Ernakulam district). The nuclear lobby was provided every help and facility by the then Chief Minister, Electricity Minister and other concerned officials inspite of the fact that the government kept insisting that no power station would be built against the wishes of the people.

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Against this background, hundreds

of public meetings and discussions were initiated by several environmental groups throughout Kerala. As a result antinuclear forums and groups have sprung up in several

towns and villages of the state. Chernobyl Day is being observed in various places and in 1990 a state-level convention was held in Thirissur. Conventions and rallies have

been organised in a sequence at Kozhikode, Kottakal, Pavvanur, Triampur, Peringome and Bela in which prominent antinuclear activists from outside the state also participated.

August/September 1991

Anumukti 5.1

Meanwhile, the previous L.D.F. government sacked an eminent scientist, Prof. R.V.G. Menon from the directorship of Agency for Non-conventional Energy and Rural Technology. (See *Anumukti* Vol.4 No.1-Editor.) The action was obviously a measure of vengeance for his publishing an article about the hazards of nuclear technology. The fact that the government action against one of the most popular exponents of the people's science movement coincided with the intensification of the propaganda regarding the indispensability on nuclear energy, clearly exposed the anti-people nature of the developmental policies followed by the government and the uncritical acceptance of this developmental model by the L.D.F.

Nucleocrats in India have been arrogantly marching forward with their killing technology totally disregarding the immense amount of new information that has been pouring in

about the hazards involved in mining, processing, transportation, and use of uranium. They are still trying to sell the big lie that nuclear power plants are meant for generating electricity. The proposed plant at Peringome will incur an expenditure of Rs. 2,500 crores and will produce electricity for mere 25 years. Considering the fact that the construction of the plant would take several years and during operation it will shut down frequently due to 'leaks', during which time it would consume enormous amounts of electricity supplied from outside, the claim that the plant will solve the chronic problems of Voltage crisis' of Northern Kerala, ring hollow.

People of Kerala are now engaged in a bitter struggle to oust the nuclear monster. Hiroshima Day, 6th of August 1991 was observed as Peringome Protest Day. All the State Government and Central Government offices were brought to a standstill in and around Peringome.

Around three thousand people, with hundreds of women with babies in their arms courted arrest while picketing government offices at various points. At the end of the token strike, people from all walks of life took the oath to fight the nuclear monster with all their strength. (See box on previous page.)

There were solidarity rallies and fasts organised throughout the state, in which prominent intellectuals, writers, scientists and religious heads actively participated.

We request environmental groups, antinuclear activists and all peace loving and democratically minded people throughout the country to express their solidarity with the people's struggle at Peringome.

*Dr Surendranath
Antinuclear Forum
Peringome, Payyanur, 670332
Kerala*

Workshop on Nuclear Power at Ruia College, Bombay

The workshop was part of a series of workshops being conducted every fortnight in different locations in Bombay and was held on Saturday, the 3rd of August, 1991, from 10.15 in the morning till 5.00 in the evening. About 100 students and staff members attended the workshop. The workshop was conducted by Shri R Ashok Kumar of the Bombay Sarvodaya Mandal and Ms Aradhana of the Sampurna Kranti Vidyalaya, Vedchhi and was held under the

auspices of Science Association of Ruia College.

The main points raised during the workshop were:

- The health consequences of continued widespread use of nuclear power would be the death of all forms of life. Leaving uranium in the ground is infinitely better than bringing it up and exposing life to its lethal affects
- The nuclear enterprise consumes more energy than it produces

- Radioactive waste produced cannot be recycled and waste storage for thousands of years is impractical

Nuclear power plants are very complicated and the number of possible malfunctions which can lead to disaster are innumerable. Thus safety of these plants can never be assured.

*R. Ashok Kumar
Bombay Sarvodaya Mandal
Nana Chowk, Bombay-7*

Nuclear Energy Awareness Programme in Gujarat

The spate of problems besetting operation of nuclear power plants in the country are too well known for enumeration. Despite these horrendous problems nucleocrats are blithely going in for further expansion. Narora-2 and Kakrapar-1 are ready and can become critical any day now. Kakrapar-2 is also nearing completion. Work on Kaiga -1 and 2 and Rawatbhata -3 and 4 is going on

apace, while despite great public opposition, Department of Atomic Energy seems determined to site reactors in Kerala.

In view of this, Sampurna Kranti Vidyalaya, Vedchhi has organised an intensive nuclear energy awareness programme starting from Hiroshima Day and lasting up to Gandhi Jayanti on the 2nd of October. It is envisaged that most of the Gandhian post basic

schools of South Gujarat and a few in North Gujarat would have had some exposure to the perils of nuclear energy by then.

The programme began in a remote Adivasi village school of Samba by singing of antinuclear songs and talks by Ms Aradhana and Shri Suren Raut. The same evening there was a slide-show in the Ashram-school at Vedchhi. Functions have already

taken place at several village schools including Kalamkui, Vyara, Golan, Rupan, Patal and Samba.

An interesting sideshow was provided by the officials at Kakrapar. Every year since 1986, August 6th is the Gujarat Police Reunion Day at a site some three kilometers from Kakrapar Atomic Power Plant. They gather at this site in their hundreds with all the paraphernalia including buses, trucks, horses, radio-equipped jeeps, etc., since in 1986 on Hiroshima Day there had been a strong protest against the plant. However as preparation, they make it a point to send a constable or two to

Sampoorna Kranti Vidyalaya every day starting from the first week of July. However, by the beginning of August we have invariably been blessed by visits from higher officials including the plant supervisors at Kakrapar.

This had been the unfailing pattern. However, this year more than half of July passed off and there was no sign of the cops. We started feeling somewhat lonely. As the song goes, we had grown accustomed to their face! So we wrote a letter to the plant authorities that as part of the Atomic Energy Awareness Programme we would like to have a slide-show in the plant and

could they please arrange for the transport. And lo and behold, our old friend, the sub-inspector from Vyara promptly turned up on the third day and asked us the very same questions that he had last year. Of course the plant authorities have not yet deigned to send us any reply to our letter, but this year the "show of force" at Kakrapar was so impressive that even some normally sedate Gujarati newspapers felt constrained to utter a mild reproof.

*Sanghamitra Desai Gadekar
Vedchhi, 394641*

On Being One in a Million

The 'Science' of Risk Assessment

If your best friend says you are one in a million, take it as a compliment. If a scientist hired by the incinerator industry says it, it might just mean that you are going to die prematurely. Hundreds of people, all "one-in-a-millions," die each year from the pollution from incinerators and toxic waste dumps. To quiet the bereaved and turn this tragic toll into a form of publicly sanctioned Russian roulette, the government and industry are turning to a sham science called risk assessment.

What risk assessment provides is a number—"six additional cancers among 100,000 most exposed individuals," for example, as a result of having 25 truckloads of dioxin-contaminated industrial waste burned each day in the incinerator next door. The number is often accompanied by a comparison - "you take a greater risk from radiation received during a long plane flight." This one-two punch is designed to disarm the opposition. After all, what kind of a wimp wouldn't accept that small risk in exchange of myriad benefits-jobs and "security"-that such an incinerator would bring to the community.

Well, me for one. And here's why. First of all the numbers that come out

of a risk analysis depend on the accuracy of the numbers that go in. To put it bluntly, the people that plug in these numbers don't know what they are talking about. Incinerator emissions contain close to 100 different chemicals, only a few of which have been analyzed for their effect on humans. These analyses, always controversial, are continually being revised. As for the rest of the chemicals, science draws a blank. And what impact these different poisons might have when combined is anybody's guess. Such Combined effects have never been studied.

The other question that needs to be asked is this: what risk is being assessed? Usually it is cancer-a grim and unpleasant threat, to be sure-but cancer is not the only hazard out there. Among the many other health effects caused by the murky soup of environmental pollution are birth defects, immune system damage, developmental disabilities, organ damage and a host of other sub-lethal impacts that are far less well-documented. And the standard member of the public these assessments are designed for is a 30-year-old-white male. Granted, there are lots of them, but they are the least vulnerable to toxic assaults on their health. Left

out are infants, notoriously more sensitive to pollution, the aged and the already sick.

With all the uncertainties one ultimately finds that a risk analysis can be made to produce almost any conclusion. As one wag put it, risk assessments are like political prisoners-torture them enough and they will say anything. The essential variable it turns out, is who pays for them. The U.S. Environmental Protection Agency (EPA) discovered this fact in the mid 80s when it decided to let private corporations do their own risk assessments of toxic waste dumps on their premises. Suddenly, sites you wouldn't fly over were deemed suitable for picnics, with all the evidence packaged in neat and convincing scientific papers. Shortly thereafter, the EPA quickly took back its assessment responsibility-private analyses, one regulator declared delicately, proved "hugely optimistic."

Politics and uncertainties aside, however, the use of risk analyses as a means of crafting public policy raises larger social questions. Is it right, for example, to permit one segment of society to impose "risk" on another? Why should a scientist hired by a corporation have the right to declare

10 cancer deaths in a community "acceptable," while baiting the victims with the promise of jobs? And is it not my right to voluntarily accept the risk of the small dose of radiation received during a long plane flight, but not accept the risk imposed on me, even if some scientists tell me it is smaller,

to have a nuclear waste dump next door?

Science serves us when it is devoted to improving our lives, not when it is used to hide bad environmental policy. After all, which would you rather have—a \$100,000 risk assessment telling you that the \$30 million municipal incinerator proposed for

next door will kill only one of your neighbours each year, or a \$1 million recycling programme that will make that incinerator unnecessary?

*Andre Carothers
Editor Greenpeace Magazine
Source: E The Environmental
Magazine May/June 1991*

Czechoslovakian Contamination

The MAPE uranium mill at Mydlovary near Ceske Budejovice has been the cause of severe radioactive pollution dating from the early 1960s. Up to 80 percent of the cattle grazing in the neighbourhood of the facility died in 1962/63 from leukaemia or deformities because of an accident which took place in the early 1960s but has been kept secret till now. The only precautionary measure the authorities took at the time was to close down a drinking water well without informing the people as to the real reason behind the move. Another spill occurred at the same site in 1964 and there have been several instances of malfunctions thereafter. News of the second accident was made public by Ministry of Agriculture officials in a Prague newspaper *Mlada Fronta*, just two days after Greenpeace released information regarding the first accident.

The catastrophic situation created by the first accident was only discovered after the increases in the cases of leukaemia and mutations were monitored with cows in the vicinity of the plant. The area around MAPE is used intensively for agriculture and livestock breeding, mainly cattle, geese, fish and hops. In 1962/63 officials from the regional slaughter house commissioned veterinarians from the Veterinarian Institute in Budejovice to find out the reason for the sudden increase in leukaemia and mutations. The results clearly indicated that only radioactive contamination from MAPE could be responsible. Documents relating to the investigations were immediately declared top secret.

Pollution continued during the succeeding decades, through the "normal operation of the mill." Between 1965 and 1985 radioactive waste water of the mill was released directly into the Vlatava river. Since 1985, radioactive tailings and waste water have been released into former open-pit coal mines right next to the mill. Greenpeace, which is demanding an investigation of the situation and is conducting a campaign in surrounding cities and villages, has received official analyses from the Czech Institute for Hygiene between the years 1979-81: the eight control points located in a circle of eight kilometers around the plant showed significantly higher measurements of radioactivity. The official reaction: four control points where the largest readings were recorded were shut down.

Since the mid 1989 the MAPE uranium mill has also treated the uranium ore from the West German Menzschwand uranium mine. This deal was made after the closure of the only West German uranium mill at Ellweiler, for excess radon releases. Questions raised by the Greens in the West German Parliament on radiation standards of the Czech uranium mill were answered by the statement that the West German Government supposes that the Czechoslovakian Government was observing international standards...

Eight control points showed significantly higher measurements of radioactivity. The official reaction: four control points where the largest readings were recorded were shut down.

On 21 January 1990, some 500 uranium miners gathered at Pribram, which is one of the mining centers in Czechoslovakia. They were demanding disclosures of the dangers posed by radiation to their own health. They had no confidence in the administrative staff of the mines and the health department which have remained unchanged since before the revolution.

There are about 30,000 people employed by the Czechoslovakian uranium mining industry. About half of them work in underground mines and mills. It is known that although many workers came to the mines because of the high wages offered there, prisoners have been forced to work there. Working in the mines (for ten years) is also offered as an alternative to conscientious objectors to avoid compulsory military service.

After 3200 working shifts (somewhere between 15 to 17 years) underground, workers are employed on the surface—but this is also dangerous since high levels of radiation have also been recorded in some of the offices and in parts of the mills. Workers retire at the age of 55.

A former uranium miner who had worked for thirty years beginning in 1947, said, "We were a group of eighteen. Seventeen of us died of lung cancer. I am the only one who survived." Another miner was quoted as saying, "When they found a radiation induced disease in my blood, they did not tell me the results of the investigation. They made false diagnoses to prevent recognition of an occupational disease."

Greenpeace Indicts French Nuclear Industry

The French nuclear power programme, upheld throughout the world as an epitome of success by the nuclear industry, has come under scathing criticism in a new report from Greenpeace International. The 136-page report, written by economist and political scientist Dr Francois Nectoux, focuses not on safety issues-though they are peripherally addressed-but on what is supposed to be the French industry's pillar of strength: the economics of the programme.

According to Nectoux, Electricite de France (EDF), the nation's nuclear utility, suffers from the world's largest private debt, which Nectoux places at \$38 billion (other reports have put the debt at over \$40 billion). Nectoux sees little chance that EDF will recoup the debt, and indeed points out that France currently has substantial over-capacity (about eight large reactors worth), even while EDF considers ordering several new large reactors in an effort to

preserve its scientific infrastructure. Since 1974, Nectoux argues, EDF has shown losses of 30.2 Billion French Francs and profits of only 2.7 Billion Francs.

Nectoux also points out that French electric rates, while cheaper than Germany and Italy, are more expensive than Denmark or the Netherlands, and are comparable to the U.K. once artificial trade barriers are discounted. Moreover, Nectoux argues that the rates would be even higher without the presence of a significant portion of very cheap hydropower.

Two other issues of great interest to U.S. (also to India - Editor) are also brought up in the report.

The first is that EDF has been unable to maintain its 1970s construction schedule of five years for completion of a large reactor, casting severe doubt on the ability of the much less centralized U.S. industry to build reactors in a similar time frame. The

U.S. industry argues it can complete reactors in five years, which is essential to its ability to provide nuclear power in an economical manner.

The second lesson is France's experiences with its standardized reactor designs; essentially France has two designs, a 900 MW Pressurized Water Reactor and a 1300 MW Pressurized Water Reactor. But as critics have frequently pointed out, flaws in a standardized design affect not just one reactor, but all of them. In France's case serious steam generator problems have plagued both of its designs, leading to costly repairs and a greater risk of accidents.

For more information on the report contact:

Greenpeace,
1436 U Street NW,
Washington DC 20009, U.S.A.

Source: *The Nuclear Monitor* July 15, 1991

LETTER BOX

I am undertaking some research work on the Indian nuclear fuel cycle and would like help with some specific information.

- In the July 1991 edition of *Anumukti*, there is an article "Chernobhata", relating health effects from the Rajasthan Atomic Power Plant on the surrounding villages. Do you have any further evidence of health effects relating to this or other plants in India?
- In many countries with nuclear energy, the nuclear industry is undertaking a large public relations exercise in order to try and convince the public that nuclear power is an important energy source. Has the industry in India started any public relations exercises like this?

Antony Froggatt

Greenpeace

Canonbury Villas, London N1 2PN

U.K.

As you may be already aware, we have started direct struggle against Peringome Nuclear Power Plant. We understand that the site selection committee has recommended this **place as one of the best possible sites in the world.**

On Hiroshima Day, thousands of people courted arrest while picketing various government offices in Peringome. We are also getting full support from renowned editors, writers, intellectuals and even political party leaders, both from the right and left of the political spectrum.

New, though not unexpected, developments include the recent stand taken by the Communist Party of India (Marxist) (CPM) State Secretariat which has for the first time come out openly against the struggle and has denounced it as "ill-motivated". Though CPM secretariat has lost much of its bureaucratic

teeth in recent years, there is no doubt that many of the people in and around Peringome do owe allegiance to that party. There is no doubt that the tone of gross callousness and insensitivity reflected in the statement will not go unnoticed by the people and the stand taken on just this single issue alone may spell disaster for the party. A noteworthy point about the action on August 6th was the fact that it was inaugurated by a veteran CPI leader, K.V.Surendranath, Ex MLA and the struggle is being led by mainly members of SFI and DYFI (both CPM oriented organisations).

K.M.Venugopalan

Annur, Payannur 670 332

Kerala

The struggle against the proposed Peringome nuclear power plant will be an uphill task since there are no evacuations involved here.

Thousands of acres of government land is available. The fact that all the major political parties, whether of the left, right or center are in favour of the plant's construction, presents one of the biggest hurdle to the agitation. At the same time Dr P.K.Iyengar, the head of Department of Atomic Energy, seems determined to establish the plant as a 'gift' to his home state. The government and the Kerala State Electricity Board are all for the establishment of the plant and anyone who speaks against nuclear power is dubbed anti-national. It is against such heavy odds that we have to fight here, as elsewhere.

*K. Ramachandran
Payyanur, 670 332 Kerala*

In Alabama and U.S. Southwest in general, also in the Southwest, we too are working very hard on the nuclear issues. In the U.S. we are very concerned that "obsolete" missiles are discussed for dismantling but simultaneously new, far more accurate and destructive missiles are being produced and loaded onto nuclear submarines in Bangor, Washington and Kings Bay, Georgia. This is the Trident II or D-5. We are very active on this issue as well as on the transshipment of hazardous nuclear wastes. The only thing to do is to stop now all the production, shipment and deployment of nuclear weapons. It is unfortunate that this trip I am not so free to be able to move around much. Otherwise I would dearly love to come and visit your institute at Vedchhi again. It has really been the inspira-

tion for the development of our tiny project in New Mexico.

*Dr Jane M Christian
Centre for Applied Linguistics
University of Hyderabad
Hyderabad AR 500134*

SAHAJA, a women's group here, is conducting a two-day seminar on "Energy and Women". Our group, Women Against Nuclear Energy is presenting a paper entitled, "Nuclear Issue is Also a Women's Issue". The seminar will be held in the last week of August. We shall welcome any comments, so that they can be circulated amongst the participants.

The study being carried out on the genetic effects of high background radiation in Kerala is almost finished and we hope to have it published within a couple of months. The preliminary work on the study of cancers in Kanyakumari has already begun.

I am planning to work on a project, "Environmental Issues and the Judiciary". It will be for a period of two years. If you have any materials related to this topic, for example, the legal struggles here and abroad, please send me a copy.

*K.Nandini
CISEC Kottamukku,
Kollam 691 013
Kerala*

Koodankulam is going ahead in Tamil Nadu. There is no organised resistance, no one really understands that we are importing our own Chernobyl. The local people have no clue what atomic power is. We need a concisely written article explaining it so we can produce from it a leaflet in Tamil with a brief English summary. I can find some local funds to print and distribute it. Also, can some whiz kid design a good, imaginative, hard-hitting anti-nuke sticker — we could print Tamil and English versions. I will raise part of the money do do a run of 5-10 thousand. We may not be able to do much, but we can't sit quietly by!

*Rom Whitaker
Madras Crocodile Bank
P.O.Bag 4, Mamallapuram 603104
Tamil Nadu*

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Editor: Surendra Gadekar

Subscriptions, donations, manuscripts, inquiries regarding circulation, etc. should all be addressed to:

**Editor Anumukti
Sampoorna Kranti Vidyalaya
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