

# ANUMUKTI

## A Journal Devoted to Non-Nuclear India

Volume 9 Number 1

August / September 1995

*"All I ask is that, in the midst of a murderous world,  
we agree to reflect on murder and make a choice."*

Albert Camus

Neither Victims Nor Executioners

### Fifty Years of US Nuclear Resistance

In August 1945, the mushroom clouds over Japan revealed to Gordon Maham the purpose of his secret government engineering job. He resigned from the Manhattan Project in protest, thus losing his draft exemption. Refusing post-war conscription, Maham was arrested and jailed for three years as a conscientious objector.

In California, conscientious objector Bent Andersen was at the Civilian Public Service camp in Minersville doing alternative service, when he heard about the atomic bombs dropped on Hiroshima and Nagasaki. He left the camp and hitchhiked across the country, distributing leaflets as he went, which read in part, "Now is the time for the people of America to cry out that the first

atomic bombs in history shall be the last! That war be waged no more! Anything less is moral and physical suicide." He was later arrested and imprisoned.

These acts of conscience ushered in the first 50 years of anti-nuclear civil disobedience.

Organised non-violent resistance began in 1955, when Catholic Workers and other pacifists publicly refused to co-operate with civil defence drills in New York city. From this action a series of civil disobedience campaigns blossomed in the late 1950's. People were arrested at nuclear test sites in Nevada, the Pacific and Africa; missile bases in Cheyenne and Omaha; missile submarine shipyards in Connecticut;

and California's Lawrence Livermore Laboratory, where the H-bomb was developed. Prison terms of six months were not uncommon and resisters were subject to public harassment and redbaiting.

Civil disobedience for nuclear disarmament faded along with the Ban the Bomb movement after above ground nuclear tests were banned in 1963. France's refusal to join the ban, and continued atmospheric testing in the Pacific, gave birth to the group Greenpeace in 1970. Like the Golden Rule and Phoenix voyages of the late 1950's, Greenpeace ships sailed into the South Pacific to disrupt scheduled French tests, and protest US nuclear tests in the Aleutian Islands.

Mass nuclear disarmament actions paralleled the growth of anti-nuclear power civil disobedience in the late 1970's. Nuclear power plants from Scabrook, New Hampshire on the Atlantic coast to Diablo Canyon in California on the Pacific were sites of civil disobedience actions large and small. Participatory organising styles for non-violent direct actions featuring decision making by consensus were developed building on and moving beyond the practices of the civil-rights and the anti-war movements.

In 1978, organisers of the first national demonstration at the Rocky Flats plutonium processing plant near Denver planned a symbolic blockade of the railroad tracks to follow the legal demonstration. With participants from around the country, the action spontaneously grew into more than a year of resistance that overwhelmed local courts with hundreds of arrests. The encampment of the railroad tracks that served as springboard for repeated blockades preceded a wave of such resistance-oriented peace camps on both sides of the Atlantic in the 1980s.

Civil disobedience campaigns and faith based resistance communities were re-emerging on both coasts and in the missile fields of the mid-west. By the time deployment of Cruise and Pershing missiles in Europe was punctuated with the "winnable nuclear war" rhetoric of the Reagan administration, a widespread network of such communities and campaigns was active.

Since 1980, this movement of conscience in action has resulted, in the United States, in some 47,000 anti-nuclear arrests during at least 1,800 actions at more than 250 different sites. Resisters have been jailed for entering military bases, sitting-in at corporate and government offices, praying at nuclear weapons laboratories; blockading trucks and trains, nuclear power plants and nuclear dump sites; damaging weapons

## *From the Editor's*

### CON-fusion prevails

Recently it seems, on one of his periodic visits abroad, Prime Minister Shri Narasimha Rao visited a fusion research laboratory and was suitably impressed. Taking advantage of his "good mood" a proposal for fusion research in India was mooted to him and grants worth Rs. 750 crores, sanctioned

The real horror of this story lies not in the fact that obscenely huge amount of money is being wasted; (it definitely is and not only in such esoteric activity as fusion); but that the scientific community considers this darbari style of functioning as perfectly normal and there is not a whimper of protest. Perhaps they feel that let the nucleocrats get away with their loot. Our time too would come. Even self-interest, which would dictate that the country's research kitty is by no means unlimited, and Rs. 750 crores not chicken feed, seems absent.

It is another issue altogether that the nucleocrats who have performed this fabulous heist have a long record of sterling non-performance when it comes to actually delivering what they promise. Even a cursory look at the operational record of nuclear power plants in the country would bear this out.

Fusion research is special, for it is not only our nucleocrats but everybody else's as well who love it since this black holes just gobbles huge amounts of resources and no energy ever need come out. Even countries with a fifty year tradition of fusion research, have nothing to show for their years of effort except futuristic labs to impress gullible visiting Prime Ministers. The present long term projections of the US Department of Energy regarding an operational commercial fusion reactor predict the possibility not before 2040. University of Maryland physicist, Robert Parks observes: "For years, we joked that fusion was 30 years away and always will be. Now most scientists say it is 50 or 60 years away."

components and deployment systems in biblically-based "Plowshares" actions; and infiltrating test sites to impede actual nuclear weapons tests. Thousands have been imprisoned for a few days, hundreds for a month or more and dozens for one or more years.

As the nuclear age passes the half-century mark, direct action for nuclear disarmament continues, targeting advanced weapons and first-use strategies. A resurgence of resistance at nuclear power plants has also begun in mid 1990s, as ageing plants show risky signs of wear. The industry's production of irradiated nuclear

fuel rods, the most dangerous of radioactive wastes, has begun to exceed safe storage capacity at many plants in the US and other countries, spurring citizen action and concern at sites across the country.

As we look to the challenges of the next 50 years, it is with great appreciation and respect that we remember the actions of so many people who have paved the way before us, showing us with their examples and their lives an active and conscientious response to the nuclear age.

*The Nuclear Resistor July 7, 1995*

# Fire Derails Japanese Fast Breeder

On December 8, the Fast Breeder Reactor at Monju in Japan had an accident involving a leak of sodium coolant. Approximately four tones, of sodium leaked from the secondary cooling system. No leak of radiation was detected. This was the largest leak ever recorded from the piping of operating reactor anywhere in the world.

On December 11, the Fukui prefectural officials and later STA (Science and Technology Agency) officials along with PNC (power Reactor and Nuclear Fuel Development Corp.) staff surveyed the room where the leak occurred. They concluded that the leak's source was a defective weld in a temperature probe attaching it to one of the 55 cm main secondary lines. The welding had been done in 1991 during remodelling of the whole loop due to a design fault.

Video pictures show the extent of the damage. Sodium oxide and sodium hydroxide deposits were found mostly under and around the area of the defective tube but also throughout the room as well. This suggests that the sodium-water reaction was vigorous and lasted for hours spreading the reaction products everywhere.

Some steel structures showed evidence of melting, indicating that the sodium had caught fire reaching temperatures in excess of 1500 degrees centigrade. The video pictures of the room together with theoretical considerations strongly suggest that it was a spray fire, one of the most feared types of sodium reaction. This runs contrary to PNC's initial statement to the effect that; "a minor leakage in the secondary sodium loop caused some fumes."

In the course of the accident, the operators deviated repeatedly from standard operating procedure and

were dangerously slow in reacting. Despite clear evidence of a leak, the operators took twelve minutes to respond. Even then, they slowly coasted the reactor down rather than implementing an immediate shutdown as standard operating procedure requires. On the second day after the leakage, PNC team entered the room and took video pictures. But the pictures released to the press showed only a corner of the room with intact pipes and a small amount

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## Sodium and Air: A Dangerous Mix

*Nuclear experts like liquid sodium as a coolant due to its high conductivity and low neutron absorption properties. Sodium in contact with either air or water causes an explosive reaction. Instead of abjuring industrial scale use of such dangerous materials, nucleocrats feel that the sweetness of the technological challenge is well worth the risk of blowing up whole populations.*

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of leaked sodium. This was a blatant attempt to play down the seriousness of the accident. In reality the damage was extensive with melted steel structures and reaction products spread throughout the room. This only came to the light after the prefectural survey team took and re-

leased the video pictures two days later.

PNC and STA now plan to drain the sodium and investigate the cause of the accident. But draining the sodium is not an easy job and nobody knows how long the clean-up work will take. All the welding will need to be checked. This can take a long time. Besides, Fukui Prefecture Government and other local governments will probably resist the restart of Monju. Tukio Kurita, the governor of Fukui Prefecture, has lodged a protest with Prime Minister Tomichi Murayama demanding that the government suspend its plans for Monju.

This fiasco has further corroborated what the anti-nuclear movement had been saying particularly against Monju and Japan's plutonium policy.

Jinzaburo Takagi: Citizens'

Nuclear

## Implications for India

As it happens, India's uranium reserves are sparse and usually of poor quality ore. The Indian (pie in the sky) nuclear programme is, and has always been, predicated to the proposition that fast breeder reactors would work and produce large quantities of plutonium in the near future. Thus, the repeated failures of fast breeders in both France and Japan, are of special concern to Indian nucleocrats who can see their dreams of continued government largesse slowly dissolving. It is perhaps for this reason that they have of late become more interested in fusion rather than fission. Since, nobody anywhere has got any working model of a fusion power generator, one can safely work in this 'frontier' area, crores can be spent, with no awkward questions asked regarding

performance.

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# Memories of Hiroshima

I was sixteen years old in the summer of 1945. In June, I had completed grade ten, and would enter grade eleven in September. I remember well the invasion of Normandy and the end of the European War. A young girl who lived two doors from my home had married her childhood sweetheart, a young neighbourhood boy in April 1945, and he was sent overseas almost immediately with the US army. His first battle was the invasion of Normandy, and he died on the beachhead. His young pregnant wife was devastated by the news. The pain of invasion could be felt throughout the neighbourhood, as we saw the build-up towards the invasion of Japan. Remember, we had heard horrible stories of the fighting in the Pacific Islands, most recently at Iwo Jima and Okinawa.

Then on 6 August 1945, the President announced that the US had dropped a new and awesome bomb on Hiroshima, and this might make it unnecessary to invade Japan. On August 9, a second bomb was dropped on Nagasaki. We were told that Japan's military ship building was the target. Then Japan surrendered and there would be no second bloody invasion to end the Pacific War. Everyone went crazy with celebration. My brother went to our Church and he, together with another boy, rang the Church bells for twenty minutes straight, until they were both exhausted. All of the Church bells in the city were ringing, and the people were out in the streets singing and laughing with joy. The boys were coming home. The war was over!

During the war there were many patriotic demands made on us, like rationing of food in short supply or needed by the troops. We also wrote letters to boys in service. I took on a slightly different type of letter writ-

ing. I wrote to boys who were conscientious objectors, who refused to kill. This was a very patriotic war and conscientious objectors were treated like dirt in the military. They had to put in their time in the service, but were given the most disagreeable jobs the military could find. I undertook to support them and try to keep up their morale. Killing, and what I understood as "bully power" merely biased the post-war negotiating process where the real decisions which carved out future relationships were made. The strongest, not the most just, got to "lay down the law." This merely set the stage for the next war, as the loser tried to build up the power to confront his oppressor.

On August 15, 1945, as all the neighbourhood was celebrating, my mother was strangely quiet. As she prepared the supper, I watched her stir the soup and keep repeating: "They should not have done it. They should not have done it." These words still haunt me. They were correct, but I do not know how my Mother knew, because the propaganda was so strong at the time.

My father served on the Financial Advisory Board of our Church. During the late 1940's, when there was a boom in the uranium mining industry, the Church wanted to invest in God's Lake Uranium Mining Company in Canada. My father strongly objected to this, and I heard him talking about it at home. Eventually, the Church withdrew its proposal and did not invest in the industry. There were no nuclear power plants at the time, so, as I now know, the only use for that uranium was bombs. Again I do not know how my father knew this or why he so vehemently opposed this industry. He was a business man himself, the President of the Standard Mirror Company, which produced most of

the automobile mirrors used in the Detroit car industry.

My mother was right 50 years ago. They should not have done it. My father was right when he said to leave uranium in the ground! I think that I am now right to call for an end to the lying and destructiveness of this industry which would steal from us the future life and health of our planet!

*Dr. Rosalie Bertell*

At the time, I was a ten year old living on the other end of the nuclear chain reaction in the federally planned city of Richland. Richland was home to the workers and families at the Hanford Engineering Works, a plutonium making facility 30 miles up the Columbia River.

We were elated when we heard the news of the bombing. People came out into the streets and raised a cheer: kids jumped around, did cartwheels, shadow-boxed each other. We had finally taught those Japs a lesson!

Trinity test bomb and Fat Man—the bomb which was dropped on Nagasaki—were plutonium bombs; therefore my dad's fingerprint's, so to speak, were on both.

Mervyn Witherup, my father, died on May 12, 1988 aged 77. He died of prostrate cancer that had spread to his bone marrow. The prostrate is one of the organs that collects radionuclides. I have no doubt that Hanford killed my father. However, this is an issue which divides our family. My mother is very sure that work at Hanford did not cause her husband's cancer.

A pollster would find that most citizens in the area around Hanford, do not think that the radioactive and

chemical wastes pose any problems to health. These communities have lived basically off the government teat for fifty years—and where you draw your paycheque shapes your politics. Richland High School is home to Richland Bombers whose logo is a mushroom cloud.

Although it would be political suicide for President Clinton to apologise in the name of the American people for these acts of technological murder, the fiftieth anniversary of the atomic bombings provide a good opportunity to do so. The President would grow in stature and become a true statesman, and it would have a real psychological effect on nuclear disarmament.

*Bill Witherup*

*from The Bulletin of Atomic Scientists*

**M**y parents and two older sisters were in Hiroshima's Minami-machi area, two kilometres from the epicentre, when the atomic bomb was dropped. My eldest sister was three years old, and the next was born in February of the following year, which meant she was exposed while in the womb. My mother's parents, who lived about a kilometre away, died instantly amidst the roaring conflagration. I was born in 1949, four years after the bombing, and another four years after that, in 1953, my father died.

Although my mother had burn scars from her back up to her shoulders, she raised the three of us alone and in her weakened condition. She's now 83 years old. A few years ago she broke a bone and is now confined to a wheelchair. Her life alternates between a senior citizens' home and my home.

So, I am a second generation Hibakusha. The hibakusha's perspective on today's society is coloured by their hellish experience. Just as it colours my father's death and my mother's life for me. I sometimes wonder that if the bomb hadn't been dropped maybe my father would still

be alive, and my mother would have been spared so much suffering. Now that I am a father myself, I am not completely free of fear for the health of my own children, who are third-generation hibakusha.

Hiroshima has always been a good argument against the atomic bomb. But although the Cold War has supposedly come to an end, there are still many nuclear weapons throughout the world. Due to nuclear weapons' testing and accidents in nuclear facilities, many people have become hibakusha.



A look at the area around Hiroshima shows that we're surrounded by war preparations. There is the US military base at Iwakuni, the Self-Defence Force bases at Kure and Kaita, US military ammunition dumps in several places and more. How can Hiroshima be the fountain-head of world-wide peace campaigning surrounded as it is by all these military installations? Living here in Hiroshima, I have seen its reconstruction and growth into a huge city, but it worries me that the Genbaku Dome now looks smaller both literally and figuratively.

The major challenge to the children of atomic bomb victims is how to use the Hiroshima experience to counter any repetition of past mistakes. This year I would be sitting down with my mother and listening carefully to my mother's stories of that time. It will be a source of spiritual energy that will guide me the rest of my life.

*Shaji Kihara*

*NUKE-INFO Tokyo*

**I** wasn't even born when the atom bombs were dropped fifty years ago. And yet I too have some thoughts to share since in a strange way my birth is linked to Hiroshima.

My father was a doctor of medicine specialising in radiology, who joined the British Indian Army since his private practice wasn't working too well. Within six months he was sent to Singapore where he became a prisoner of war of the Japanese at the fall of Singapore in August 1942. My mother had no news of him for more than three years. As prisoner of war, my father wasn't treated any worse than others. In fact being a doctor, he wasn't required to do the hard manual labour on the trans-Malaya railway, which proved a graveyard for many of his colleagues. Yet, by the time he returned after the Japanese surrender following Hiroshima, he was, I am told, just bare skin and bones having lost twenty kilogrammes in weight and had forgotten names of even his children. Under my mother's loving care, however, he recovered and then went on to do pioneering work in establishing radiology in India.

I believe that my parents had decided to have no more children long before I was born, but their delight in having survived the war made them change their minds. Would my father have survived without the atomic bombing of Hiroshima and Nagasaki? One never can tell about survival, but I personally doubt it.

In September 1981, we were returning to India after a two years stay in the United States and took a short holiday in Japan and went to see Hiroshima. Today, Hiroshima is a modern city—a symbol of resurgent Japan. But underneath the surface there are scars of the misery the Bomb continues to inflict. Not even my father's life and my very existence I feel are worth that suffering.

*Surendra Gadekar*

# French High-handedness on the High Seas

*George Orwell points out a strange fact regarding behaviour of colonial masters. The violence needed to maintain the relationship of oppression ate away their own innards like a cancer so that the sufferers of colonial oppression were not only the colonised but also the colonisers. The recent 'troubles' in France reminded me anew the truth of this observation. Would the French state of Jacques Chirac behave in such a high-handed manner at home if it was not indulging in the same behaviour in Polynesia?*

**O**n July 10, ten years to the day after France bombed the *Rainbow Warrior* and killed photographer Fernando Pereira, some 150 French commandos gave a repeat performance, surrounding and storming the ship as it sailed into the nuclear test exclusion zone. Tear gas canisters were thrown on board; doors and windows were smashed.

The raid happened just as the new *Rainbow Warrior* had entered the 12 mile exclusion zone around Mururoa nuclear test site at 5.00 A.M. local time, attempting to delay preparations for the French nuclear test. The *Rainbow Warrior* was rammed by a large tug, causing damage to its bow, before being towed to a mooring point inside the lagoon. Three out of four Greenpeace inflatables—launched outside the 12 mile exclusion zone at 2 A.M. and 3.30 AM local time succeeded in entering the lagoon and reaching the drilling rig, belying French claims that they had sufficient resources to repel Greenpeace. Two activists scaled the rig and occupied it for more than 20 minutes. The inflatables were then boarded by commandos after a two hour chase through the lagoon.

The 23 crew from both the inflatables and the *Rainbow Warrior* were transferred to Mururoa and held and interrogated by military police for more than 15 hours. Crew identified themselves as "Fernando Pereira".

"The best commemoration of Fernando's death we could offer was our action today" said Mills, one of the crew. "An end to nuclear testing now and forever is what Fernando would have wanted us to fight for."

## *International Piracy*

At 7.30 AM, on October 25, 1995 the *Altair* (59 meters long, 859 tons) entered the Mediterranean port of Brindisi along with four inflatables to block the French destroyer, *Dupleix* (139 meters, 4300 tons), which is armed with Exocet missiles.

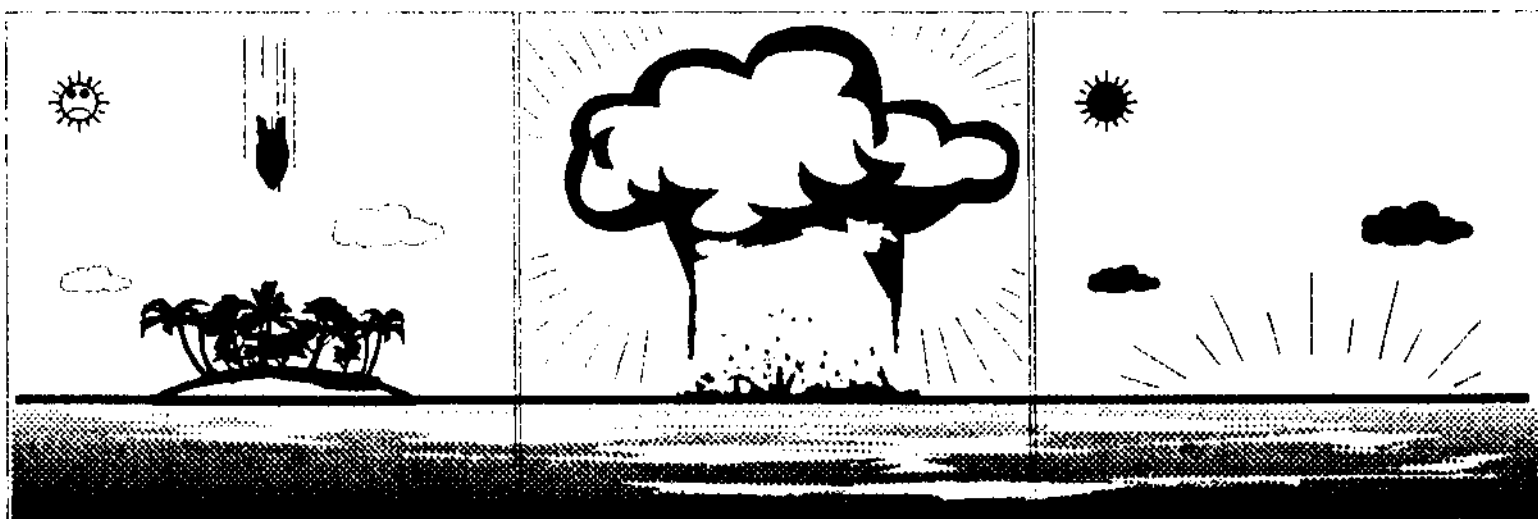
The *Altair* sent its inflatable with activists on board, who painted on the sides of the destroyer "Stop Nuclear Tests". In the meantime, four other activists chained themselves along the dock to the mooring ropes of the *Dupleix*. The crew of the *Dupleix* immediately shot at the inflatables with water cannon and started flooding the *Altair's* engine room.

At 8.40 AM, French Navy Soldiers armed with axes stormed the *Altair*, damaged the rudder and broke on the portholes. They threw tear gas into the engine room and forced the captain and crew members of the *Altair* to leave the ship. Having taken command of the *Altair*, the soldiers started the engines, put the gears into reverse and abandoned the vessel, which went full speed backwards into the harbour. The *Altair* nearly collided with other vessels (a speed boat of the Italian Financial Police and two Coast Guard speedboats) and then crashed several times against the dock. The fire brigade of Brindisi harbour intervened and managed to turn off the engine.

During the assault, one *Altair* crew member was injured and lost two teeth. "Greenpeace continues to work world-wide as a catalyst of international public opinion with peaceful demonstrative actions whenever possible to stop nuclear testing," said Captain Enever.

"The French assault is an act of international piracy," said Giuseppe Onufio, nuclear campaign spokesman of Greenpeace Italy.

*Terrain August & November 1995*



Decolonisation: French Style

# Mysterious Army Activity at Pokharan

Some curious developments have been taking place since November at Pokharan. The site has been fenced off. Boards declaring the area out of bounds have sprung up. Across the fence, there are even signs to suggest that earth movers have been used for excavation work on the site. And though the government has emphatically denied repeated US assertions that it is planning to conduct another nuclear test at Pokharan, nobody has any explanations to offer.

Three kilometres ahead of Loharki village, which in turn is some 34 km from Pokharan and adjacent to the nuclear-testing range, a dusty sand trail breaks off from the main road to lead to the nuclear site where the country conducted its first test on May 18, 1974.

Six kilometres on foot into the desert, and over sand dunes, is the latest site, identified by a huge earth mound and shale rocks surrounding a crater. Twelve-foot-high concrete pillars support the barbed wire which fences off the site. The entire test site is surrounded by these pillars. A sign, freshly painted in red, prohibits entry into the area. An



Recolonisation:  
American Style

Army camp, a few kilometres behind the site, ensures people stay away from what could easily be described as the most sensitive patch of barren land on the map of the country.

Villagers of Loharki say the site was fenced recently and people were told not to venture near it. On close examination one can detect fresh bulldozer tracks, used for removing earth. One can also spot cement though no one has a clear idea of what use was it in the test site.

Villagers are puzzled why the government suddenly decided to fence off the test site in Range A, not used for anything after the 1974 test. Range A, demarcated by white pillars, located 200m apart, is spread over a huge expanse of undulating arid flatland pockmarked with sand dunes.

Another new edition to the landscape near the test site is a huge sand dune—the locals refer to it as a *tibba*—which was not a natural creation. Those allowed entry into the test range to collect shell scrap say they have not come across the signs of any fresh tunnelling activity. Yet they say the *tibba* is unnatural, suggesting that only some recent excavation work could have created this.

The massive Pokharan testing range complex is divided into four ranges. While Range A is to be used exclusively for nuclear tests, ranges B and C are used by the Army for weapons trials and desert exercises. Range D is used by the Indian Air Force.

Those living in Hagi Bali Mohammed village, just outside the nuclear test range, say there was intense Army activity in and around Loharki village in November and the entire area was fenced to ward off outsiders.

"We are even not allowed to enter into our farms ... this kind of large

Army deployment has not been witnessed by the villagers near Range A as far as we can remember," says Bhanwar Singh, former sarpanch of the Loharki village.

While there always has been routine firing of live ammunition and exercises in sectors B, C, and D by the Army and the Air Force, this is the first time in many years that top defence officials and a large Army presence have been seen inside Range A. Villagers such as Malka, just opposite the nuclear site, Kalan, Nautala, Etah, Palana, Hoparadi, and Tadama were abandoned as they were inside the test range. Though reports of Loharki being abandoned appeared at that time, old-timers in the village denied they had been moved out-

Range A today is just a sea of sand and the top brass and defence personnel teeming in the area only a month ago have all gone. While firing and test exercises and being conducted on ranges B and C, the command posts set up in and around Loharki have long been dismantled. Dust winds have covered the area which had been used as a temporary helipad for the top brass.

Although the Americans have been maintaining that spy satellites picked up signs of cables being laid, villagers say the only activity they saw was the installation of a six-kilometre-long water pipeline leading to their village. But even this pipeline has since been removed by the Army.

When the correspondent tried to check with the Army officials, they simply said, "Nobody will answer these questions." Nor is anyone posted locally to provide answers to sensitive questions.

*Shishir Gupta*  
*Indian Express*



# China's Broken Hearts

*At one level, there is greater political tolerance in India than in China. And yet, paradoxically, Indian intellectuals especially scientists, are more timid in speaking out their minds and trying to influence public policy. Even an outright stupidity like the grant of Rs. 750 crores for fusion research has not drawn any sustained public criticism. This massive wastage of research funds is going to ultimately hurt them (scientists and researchers) the most. Hopefully, the following article will strengthen the backbone.*

Ever since the massacre at Tiananmen Square six years ago, the scene that I saw with my own eyes has haunted me. On the morning of June 4, 1989, the blood of students was everywhere on the streets, and the name lists of hundreds of dead and wounded were hung on the gates of hospitals in Beijing. The deep wound in the hearts of the Chinese people will never be healed if the current Chinese Government verdict on it is not overturned.

Every year since 1989, as the anniversary of the massacre approaches, a few brave people petition the Chinese government to re-evaluate its verdict. On May 15, 1995 45 intellectuals asked the government in writing to stop regarding people of independent thought as "hostile elements." More broadly, the petition addressed to President Jiang Zemin and Qiao Shi, Chairman of the National People's Congress, asked the government to practice more tolerance toward dissidents.

Most of the petitioners are prominent old scientists, very senior and influential. They include, Wang Ganchang, 88, one of China's best known physicist and a key member of the team that developed China's first atom bomb, tested in 1964.

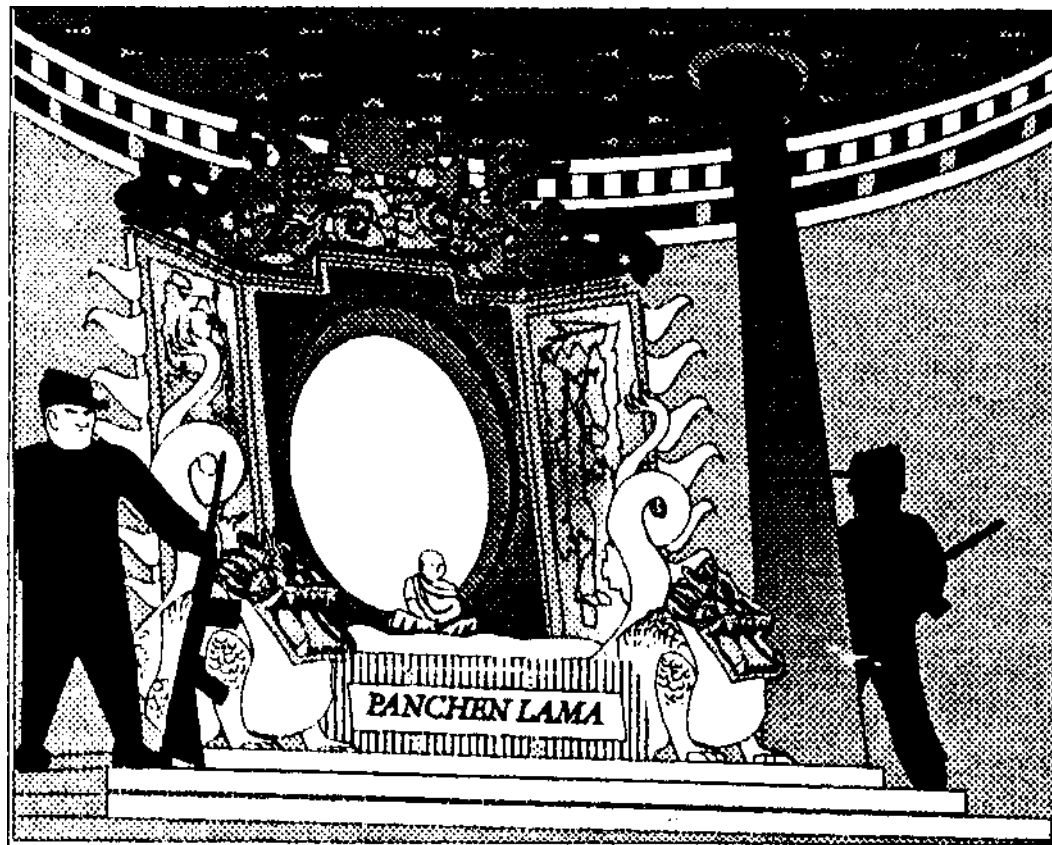
The petition called upon the Chinese government to live up to a U.

N. resolution that proclaimed 1995 as "The United Nations Year of Tolerance." It noted that China was a founding member of the United Nations and it holds a permanent seat in the security council. "China should conscientiously implement this resolution, so that this spirit of tolerance, a spirit with which our country is relatively unfamiliar, may take root and flourish in areas like our country's politics, thought, religion, culture and education."

The May 15 petition is not likely to change the attitude of the Chinese government toward the Tiananmen tragedy. On the contrary, they have detained some leading dissidents, put many of the petitioners under virtual house arrest, and they have continued to harass those who publicly voice their ideological differences.

As they punish outspoken dissidents, the Chinese government says that protests threaten social stability. But

history suggests that when repression overrides tolerance, there will never be lasting social stability. Repression can maintain surface stability for many years but never forever. Social stability can be realised only by adhering to the rule of law, permitting freedom of speech and by tolerating different political views and diverse ideologies. The current leaders are stubbornly blind to the fact that if the government fails



## Decolonisation: Chinese

The petition calls for a revaluation of the June 4, 1989, incident and the release of those people who remain in jail. Governmental leaders surely know that the longer the revaluation is postponed, the harder it will be for the wounds in the hearts of the Chinese people to heal and the more bitter will be their feelings toward the government.

to take the lead in reversing the official

Square, the force them to do so.

China is heading toward a democratic future. No one and nothing can stop that

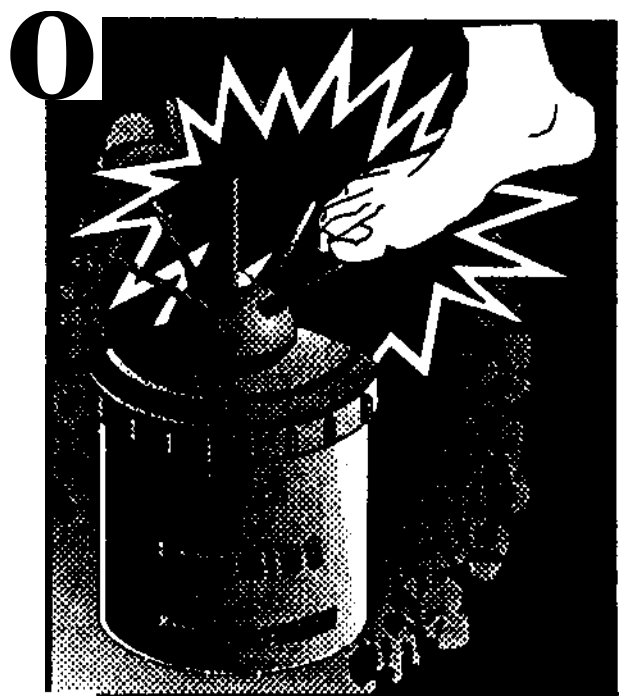
*Lee Zbee*

*The Bulletin of Atomic Scientists  
July/August 1995*

verdict on Tiananmen  
people will someday

# Hidden Killers

## The Landmine Scandal



One of the most dreadful pictures that I have recently seen was of a little boy covered in blood. The stump of one leg poked out from the rags covering him. He was the victim of an Afghan landmine and could not have been more than six or seven years old.

There could be many such pictures, for it is often the children who suffer. World-wide, landmines kill 800 people every month and maim many more. Since there are about 100 million unexploded mines in place in over 60 different countries, and another 100 million stockpiled, they will continue to maim and maim for many years to come. UNICEF estimates that for every 20 of the world's children, there is one active landmine. They have become the cheap portable weapons of terror, with civilians often the chosen target. Some are planted by ground troops; some scattered by artillery shells; and many, as in Laos, dropped randomly from planes.

Today these mines are tiny instruments of calculated cruelty. The M-14 American anti-personnel mine measures only 4 x 5.5 centimetres and is almost impossible to detect

visually. The Italian Valmara bounding mine 69 is a vile device which is hurled several feet up in the air before it explodes, firing hundreds of ball bearings or steel tubes out to a range of 30 metres. A new horror is the use of plastic shrapnel makes it undetectable by X-ray if any victim can get near an X-ray machine.

Oxfam has called them "weapons of mass destruction in slow motion." In Cambodia, where every citizen in 236 has had a limb amputated—compared to one in 22,000 in United States—landmines caused half the casualties in the twelve year civil war.

Today there are 19 million refugees in the world who have fled from their countries as a result of armed conflict and another 25 million displaced people. Landmines are undoubtedly the biggest impediment to refugees going home, because of the high risk in areas of recent con-

two options: take the risk of ploughing a field and be killed or have an arm or leg blown off, or stay out of the field and go hungry.

Where do these mines come from? Not from the countries where they cause destruction. Between 1970 and 1992, according to Pax Christi, 28 companies in Austria, Belgium,



lict. Poor farmers in places like Cambodia or Mozambique have

Britain, France, Germany, Greece, Italy, Portugal, Sweden, Spain and Turkey produced several million landmines.

There are, however, substantial signs of hope. A one year moratorium on landmine export declared by the United States in 1992 has been extended. President Clinton has

written to over 40 countries which produce landmines asking them to halt exporting for three to five years. In November 1993 the General Assembly of the United Nations called for a global moratorium on exports for three years. This proposal received an affirmative British vote but with an explanation which effectively emasculated it: "Anti-personnel

mines directed at military targets are a legitimate form of self-defence...If self destructing or self neutralising, they do not pose grave dangers to civilian populations." It is generally agreed, however, that the failure rate even with self-neutralising systems is at least ten percent, and could be much higher.

The coalitions  
opposing

## The Convention to Outlaw Landmines Self-Destructs

*The Inhumane Weapons Convention Review was held in Vienna. After three weeks of discussion it ended in a stand-off. At the beginning of the review conference, amputees presented the delegates with 1.7 million signatures from people in 53 countries calling for a complete and total ban. Yet the delegates did not concent themselves with the humanitarian cost of 100 million landmines contaminating 64 countries around the world. They were more interested in finding exemptions for their mine systems.*

*States from the South especially India, Pakistan and China would not accept the Western technological solution of self-destructing and self-deactivating mines which would inevitably cost a great deal more than "conventional" mines. The Western block in turn would not agree to inexpensive transfer of technology needed to manufacture such "smart" mines. And nobody agreed to a simple suggestion of holding the next review meeting in a mine infested territory to gain first-hand experience.*

*In the three weeks while delegates talked and discussed, more than 1600 people around the world were killed or maimed by landmines.*

dier in the British Army for 17 years. His experience in clearing mines in Afghanistan for the United Nations in 1988 led him to found this remarkable charity in 1990. The group now has a team of over 600 workers clearing mines in Kurdistan, Cambodia, Laos, and Angola. Most of those trained for this dangerous work are natives of the countries concerned. One worker has been killed by a mine and another in northern Iraq murdered. But in the five years since it was founded, the group has succeeded in removing thousands of mines.

Such humanitarian work is beyond praise. But alongside it must go the effort to build the structure of a genuine global community.

Just-war theorists and promoters of non-violence can on this issue unite in efforts to make war and its ghastly consequences at least less likely.

*Bruce Kent  
The Catholic Radical  
Dec 1995/January 1996*

greatly strengthened treaty which would ban production as well as export, cover the civil wars which are almost the norm today, and oblige suppliers and users to fund major clearance and recovery programmes. Granted the increasing disgust at the continuing slaughter of civilians,

some of those aims may well be achieved

Meanwhile, support is needed for one very effective non-governmental mine clearance operation. The Mines Advisory Group was founded by Rac McGrath, who served as a sol-

## Are Atomic Bombs Legal?

### The International Court of Justice About to Give Its Verdict

Fifty years after atomic bombs devastated Hiroshima and Nagasaki, the International Court of Justice, is preparing to make a landmark, though non-binding, pronouncement on the legality of nuclear weapons, as the United Nations' main judicial body, the court has been asked by the World Health Organisation and the U. N. General Assembly to deliver an advisory opinion on the issue.

This is supported by the World Court Project, which is an international alliance of citizens' groups. It was founded in 1992 with the aim of bringing the legality of nuclear weapons before the International Court of Justice at The Hague. The co-founding organisations are the International Peace Bureau (IPB), the International Association of Lawyers Against Nuclear Arms (IALANA) and International Physi-

cians for the Prevention of Nuclear War (IPPNW).

The court is now considering whether the use or threat of use of nuclear weapons is permitted under international law. It is expected to make its ruling early in 1996.

Peter Weiss, one of the lawyers working for the World Court Project, believes that nothing but good can come out of this historic hear-

in "If a majority of the court says that nuclear weapons are legal, there will be a tremendous push to get a convention outlawing them like the treaties abolishing biological and chemical weapons. If a majority says that they are totally illegal, that will give a strong impetus to the movement to implement the court's decision.

The World Court Project believes that clarification of the law by the International Court of Justice is a vital step towards the global abolition of nuclear weapons.

43 states, a record number, have made written submissions to the World Court on the question of whether the threat or use of nuclear weapons violates international law. Oral proceedings were held from 30 October, to 15 November, 1995 which were open to the public.

The advocate for World Health Organisation gave a sober and detailed account of the special nature of nuclear weapons, stressing their radiological effects which are impossible to contain either in space or time.

France argued that nuclear weapons are not fundamentally different from other weapons. When the use of armed force is legal, there ought not to be any prohibition on nuclear weapons. Germany and Italy, both members of the NATO nuclear alliance, supported nuclear legality, arguing that disarmament negotiations might be endangered by a Court ruling. Since the only negotiations un-

derway concern the Comprehensive Test Ban Treaty and control of fissile materials, it is difficult to see how this argument applies.

Russia followed the line of other nuclear weapons state, arguing that there are no specific treaties on nuclear weapons and that humanitarian law does not apply in this case.

However, Egypt, Mexico, Iran, Indonesia, The Solomon Islands, Samoa, Australia, New Zealand, San Marino, The Marshall Islands, Qatar, Malaysia, Costa Rica, The Philippines and Zimbabwe produced strong antinuclear arguments, presented with great coherence. Mexico and Iran warned of their potential withdrawal from Nuclear Non-proliferation Treaty should the nuclear weapons states fail to fulfil their disarmament objections. Malaysia called on the court to reject the nuclear domination of the big five and rule in favour of the vast majority of countries supporting the illegality of nuclear weapons. Australia, in a stunning reversal of its previous support to US nuclear policy, argued that self-defence is not a justification for genocide or for indiscriminate attacks on the civilian population. Foreign minister, Gareth Evans concluded that "it is illegal not only to use or threaten to use nuclear weapons, but to acquire, develop, test or possess them." In a direct challenge to the nuclear weapons states he declared that they must "within a reasonable period of time, take systematic action to eliminate completely all nuclear weapons.

Japan, in spite of heavy US pressure, argued that nuclear weapons are clearly contrary to the spirit of humanity that gives international law its philosophical foundation, but stopped short of concluding that the weapons are illegal. The ambassador then presented the mayors of Hiroshima and Nagasaki emphasising that their testimony was independent of the government's view. The mayors reminded the court the mind-numbing damage these weapons brought to their cities.

Co-ordinating their presentations, Samoa, and the Marshall and Solomon Islands, expressed their outrage at nuclear testing and the suffering it had caused.

On the final day, UK and USA insisted that the court should refuse to give a ruling. United States defended nuclear deterrence by claiming that it had preserved peace for the last fifty years and the UK said that calling it into question would be profoundly destabilising. Both states argued that since the nuclear states have built up large arsenals and no treaty specifically prohibits nuclear weapons, the court cannot rely on an international consensus of illegality.

Besides the government presentations, the court received over 3 million declarations, which citizens all over the world had sent in against nuclear weapons.

*Colin Archer*

*WISE News Communique 443*

## The Cold War's Continuing Casualties

**S**ince the Manhattan Project, the United States has spent more than \$4 trillion and employed more than 500,000 workers to develop and produce nuclear weapons. As nuclear weapons production workers confront thousands of lay-

offs, they are concerned that occupation-related health problems are a low priority for the government

The preliminary results of health assessments of nuclear weapons production workers conducted by Eliza-

beth Averill Samaras for the Alice Hamilton College of the Oil, Chemical and Atomic Workers International Union (OCAW) reveal worker concerns about future health problems, inadequate health insurance and high levels of exposure to

substances such as ionising radiation, beryllium, asbestos and carbon tetrachloride.

The US Department of Energy (DOE) is spending \$6.5 billion every year "remediating" sites contaminated with nuclear waste. Ironically the department is not spending anything on remedial activities for workers who have been contaminated. These nuclear veterans have a statutory entitlement to medical surveillance and exams that have never been funded.

### *Beryllium Boom and Bust*

In the mid-1950s, the Atomic Energy Commission awarded the Beryllium Corporation of America a five year \$23 million contract to produce 500,000 tonnes of beryllium — a strong but malleable metal used extensively in nuclear, electronics and aerospace industries. Beryllium Corporation came to Hazelton, Pennsylvania in 1957 and brought with it a welcome economic stimulus and a source of steady employment. More than 1200 people worked in the factory till it closed down in 1980 and refined thousands of tonnes of beryllium ore into metal. But now, almost 40 years later, all that remains of the enterprise is a legacy of occupational disease.

At the time the Hazelton beryllium plant was designed, scientists already knew about the dangers posed by exposure to beryllium dust. Workers confronting high exposure levels commonly develop acute symptoms similar to bronchitis or pneumonia. Lower exposure levels can cause chronic beryllium disease (CBD) — characterised by lung inflammation and scarring — including granuloma, the growth of tumour like masses of capillaries on the lung surface. CBD can sometime take several decades to develop. When it does show up, it can become a seriously disabling disease with such symptoms as shortness of breath, coughing, chest pain, fatigue, loss of appe-

tite and weight Most CBD victims are able to control these symptoms with drugs, though the disease can be fatal without early detection and treatment

Air quality standards for beryllium dust were set by the Atomic Energy Commission in 1950, seven years before the beryllium plant came to Hazelton. In 1993, a local newspaper, Wilkes-Barre Times Leader, uncovered AEC documents that revealed that a 1958 air sample taken at the Hazelton plant found beryllium dust levels that were 330 times the maximum allowed. Air samples were taken at the plant at least twice a year. These samples exceeded the regulatory standard in 15 reports uncovered by the Times-Leader though the company had installed new air filtration equipment in 1958.

### *AEC's exit*

After the expiry of Hazelton Plant's government contract in 1962, the company's chief customers became private industries. As a result, regulatory responsibility for the health and safety of the plant workers shifted from the ABC to the Pennsylvania state Department of Health. In the mid-1960s, the Hazelton beryllium plant was bought by Kawecki-Beryl-co., which sold the plant to the Cabot Corporation in 1978.

In 1970, the workers at the plant unionised with the Oil, Chemical and Atomic Workers International Union (OCAW). Company doctors told workers — many of whom had previously worked in coal mines — that the symptoms they were describing were 'miner's asthma.' Upon learning from the workers about conditions inside the plant, the OCAW brought in doctors and an industrial hygienist. Independent medical consultations led to the diagnosis seven cases of beryllium disease amongst employees who had already been cleared by company doctors.

OCAW also fought to obtain records of air sampling conducted by the Pennsylvania Department of Health. Some of these records were eventually released indicating high levels of exposure to beryllium dust at the Hazelton plant

### *Beryllium reaper*

Former workers and their families blame more than 90 deaths on the elevated beryllium levels. Jim Leonard, son of a former worker and an advocate for their cause contacted the OCAW in 1992, in response to the rising number of illnesses amongst former plant workers. Leonard's father, Albert, worked at the plant from 1960 to 1973. "Almost from the beginning of his employment my father was sick," says Leonard. "It started with skin rashes. Then he developed a cough. As he was coughing, a clear liquid would come out of his lungs. He just never felt right or normal after that" Albert Leonard died from beryllium disease in 1986 at age 58.

Premature deaths of workers could and should have been prevented since the government and the doctors knew about the hazards of beryllium exposure. After exposure, early detection and intervention — which can often control the symptoms of the disease — is vital to the lives of remaining workers. Medical screening — which costs \$300 per worker — can help monitor the symptoms of the disease. Once detected, treatment can begin.

Amongst former Hazelton plant employees facing increased risk of beryllium exposure disease, nearly 1200 are still alive. Because beryllium disease can take 20 years to surface, workers often experience the health consequences of their jobs long after Pennsylvania's six-year statute of limitations on worker's compensation runs out

Lawsuits to get medical help to workers have failed. The courts have

ruled that workers cannot prove that their employers intentionally injured them. The corporations have argued that, once excessive exposure levels were detected, workers were issued respirators. Plant management also took yearly chest X-rays to detect beryllium disease and installed safety equipment in 1970s.

Although the courts have ruled that Cabot Corporation has no legal responsibility for the health of former workers, it has also held the plant responsible for environmental damage and ordered the corporation to spend \$4 million to clean up the site. "Millions of dollars will be spent to cover or bury the shit left over,

yet they won't spend a few thousand on the workers," a former worker said at a meeting organised by OCAW.

### *Reluctant DOE*

Denied medical assistance by the owners of the beryllium plant and state workers' compensation programme, former Hazelton workers sought DOE relief. Given that the beryllium processed at Hazelton supplied US nuclear weapons fabrication facility at Rocky Flats and Oakridge, and also the fact that there already exists health monitoring of past and present workers at both these facilities, The workers' union

appealed to energy secretary Hazel O'Leary to include them in this government programme as well. After an eight month delay, there appeal was turned down on the ground that "there is no apparent legislative authority." However, after intense lobbying by supporters including members of the House of Representatives, DOE has indicated that an award of \$400,000 will soon be announced to fund a programme of beryllium medical research and surveillance. The award is expected to include medical screening of at least some former Hazelton workers.

*Katherins*

*Issac*

*Multinational Monitor October 1995*

## Potatoes Were Guarded Better

On November 27, 1993, at about 1.00 a.m., Capt. Alexei Tikhomirov slipped through an unprotected gate and into the Sevmorput shipyard near Murmansk—one of the Russian Navy's main storage facilities for nuclear fuel. The 35 year-old deputy chief engineer then climbed through one of the main holes in the fence surrounding the "Fuel Storage Area 3-30", sawed through a padlock on the back door, and pried open the door with a metal pole he found next to the building. Once inside, Tikhomirov located the containers of fresh submarine fuel, lifted the lid off container No. 23, and broke off parts of three assemblies for a VM-4-AM reactor core. Stuffing the pieces (containing 4.5 kilograms of enriched uranium) into a bag, he retraced his steps.

Outside the shipyard he was met by an accomplice, former naval officer Oleg Baranov. Baranov dropped Tikhomirov off at his home, and then drove to the nearby town of Polyarny, where he hid the nuclear material in his garage.

The third man behind this operation was Dmitry Tikhomirov, Alexei's younger brother, who at the time of the theft was chief of the refuelling division at the shipyard. He had briefed his brother about security at the site, the holes in the fence, and the design of the fuel assembly.

None of the conspirators had a prior criminal record. They also lacked contacts for selling the stolen

material, for which they hoped to receive \$50,000. According to the official record of the investigation, they waited six months before they began to search for customers. But when Dmitry Tikhomirov told a fellow officer about the theft and asked for help in selling the stolen merchandise, the conversation was reported to authorities. In late June 1994, the three conspirators were ar-

### **Tempting Targets**

Enriched uranium is the standard fuel for propulsion reactors used in both Russian submarines and surface ships. The level of enrichment varies depending upon the type of vessel from 20 per cent to weapon's grade (90 per cent). Soviet Union built over 250 nuclear power vessels. Most of these vessels have two pressurised water reactors which, under normal operating conditions require refuelling every seven to ten years. The cores of these reactors hold typically between 200 to 300 fuel assemblies, each containing several fuel rods. If this fuel has been enriched to 90 percent or higher, about 10 fuel assemblies could supply enough uranium for a bomb.

Huge stocks of fresh fuel are stored in five main storage sites. Shipyard No. 35 at Sevmorput near Murmansk, the "Sevmash" Shipbuilding Plant at Severodvinsk, the naval base at Zapadnaya Litsa west of Murmansk, and two "technical repair bases" near the Gorniyak Shipyard at Krashennikova

rested and the stolen goods recovered.

The theft itself was discovered only 12 hours after it occurred. Carelessly, Alexei Tikhomirov had left the back door of the storage building open. Two guards on patrol noticed the discarded padlock and the broken door seal, and a prompt search revealed the broken fuel assemblies.

### *Holes in the fence*

According to Mikhail Kulik, the special investigator for the Northern Fleet Military Procuracy—and the chief investigator of the Sevmorput diversion—potatoes were guarded better than radioactive materials at the time of the theft at Murmansk. "On the side of the shipyard facing the Kola Bay, there is no fence at all. You could take a dinghy, sail right in—especially at night—and do whatever you wanted. On the side facing the Murmansk industrial zone there are holes in the fences everywhere. And even in those places where there aren't any holes, any child could knock over the half-rotten wooden fence boards."

Kulik reports that some security improvements were made after the discovery of the theft. The number of guards were increased and they were issued walkie-talkie sets. Planks were nailed to cover some of the holes in the fence. More sophisticated security systems, although proposed were not put in place because of cost. Reportedly, there still are no surveillance cameras around the perimeter, and the integrity of the fuel containers is checked by sight only. According to Kulik, the first and last time the contents of most of the containers was checked was at the fuel-fabrication plant. He believes the diversion at Sevmorput "could have been concealed for 10 years or longer," had the open door of the storage building not attracted the guards' attention.

The case highlights the difficulty of guarding against the "insider threat", which is the greatest security danger, according to Russian nuclear safeguards officials. The current crises in Russia has eroded human reliability. A combination of factors—the end of Cold War, the accident at Chernobyl, the contraction of Russian defence and nuclear sectors, and the

inability of the state to subsidise previously privileged workers in the nuclear industry and the military—has resulted in tremendous economic and social upheaval. Moral standards have eroded. As a result the primary threat to nuclear safeguards in Russia today is a knowledgeable and corrupt insider (or group of insiders) who have access to nuclear materials and may attempt to steal them for profit, for political reasons, or because they are coerced by a criminal organisation.

At the time of this writing, Alexei and Dmitry Tikhomirov and Oleg Baranov were standing trial in Murmansk for their involvement in the theft of naval reactor fuel from the Sevmorput shipyard. The hole in the fence that Alexei climbed through to gain entry to the storage facility is said to be patched shut. But the underlying gaps in the Russian safeguards system remain.

*Edited from an article by Oleg Bukharin and William Potter in Bulletin of Atomic Scientists May/June 1995*

## **Book Review**

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*With Hiroshima Eyes : Atomic War, Nuclear Extortion and Moral Imagination*

Joseph Gerson

New Society Publishers, 4527 Springfield Ave. Philadelphia PA 19143 USA

First a few quotes to set the scene.

*"When you have to deal with a beast, you have to treat him as a beast."*

*President Truman in a letter to Council of Churches of Christ in America just two days after the atomic bombing of Nagasaki*

*"The United States dropped the bomb to end the war against Japan and thereby to stop the Russians in Asia, and to give them sober pause in eastern Europe."*

*William Appleman Williams in The Tragedy of American Diplomacy 1962*

*"The consensus among scholars is that the bomb was not needed to avoid an invasion of Japan. It is clear that alternatives to the bomb existed and that Truman and his advisers knew it."*

*The official historian of the US Nuclear Regulatory Commission, J Samuel Walker*



*"No one expected the invasion of Japan to be anything but a slaughter. Before the Japanese mainland could be secured, American casualties would amount to as many as one million men; and the Japanese were expected to sacrifice twice that number in defence of their homeland. Then on July 16, the bright glow of the Trinity test raised hopes that the war could be ended without an invasion.*

*American Heritage Junior library*

*"It is my opinion that the use of this barbarous weapon at Hiroshima and Nagasaki was of no material assistance in our war against Japan. The Japanese were almost defeated and ready to surrender. In being the first to use it, we adopted an ethical standard common to the barbarians of the dark ages."*

*Fleet Admiral William D. Leahy,  
Chairman, Joint Chiefs of Staff for  
US, during the Second World War*

*We don't know anything about*

*my younger brother. He was six years old. Even when people were burnt to death, you could usually find the bones and at least say, this is my house, so this must be them, but we found nothing. They must have been blown away somewhere.*

*Yasuko Kumura*

## **O** Was Japan Always the Target?

*Urgency to build the atomic bomb was most felt by scientists who had fled Europe fearing Hitler. But was Hitler's Germany ever the target? New research suggests otherwise.*

*The first targeting discussion—insofar as can be determined from declassified documents and Manhattan Project histories—seems to have occurred during a meeting of the high-level Military Policy Committee on May 5, 1943. According to Gen. Leslie Grove's summary of the meeting:*

*"The point of use of the first bomb was discussed and the general view appeared to be that its best point of use would be on a Japanese fleet concentration in the Harbour of Truk ( in the Pacific, north of New Guinea). Gen. Styer suggested Tokyo but it was pointed out that the bomb should be use where, if it failed to go off, it would land in water of sufficient depth to prevent easy salvage. The Japanese were selected as they would not be so apt to secure knowledge from it as would the Germans."*

*"Always the Target" Arjun*

*Makbijani*

On August 6th—Hiroshima Day—Sanghamitra was giving a talk on "the implication of the Bomb for us today," at a local college. Immediately after the talk the Principal of the college got up. He was livid. "You say that the atomic bomb was not necessary to end the war! That Japan was already willing to surrender! Well, my information is different" and he proceeded to harangue the poor students regarding how the Bomb helped prevent millions of deaths in a prolonged war.

This incident is a small illustration of the pervasive effect of propaganda. Lies about the use of the bomb have been broadcast with atomic force so that today it is difficult to disentangle the truth from self-justifying myths. Considering that such is the situation in a small village in India—effectively a bystander in the conflict 50 years ago, the strong reaction amongst militarists in the US to the Smithsonian

Institutions small attempt to educate the public becomes understandable. Debunking erroneous official versions of history is not an easy task.

It is for this reason, that Joseph Gerson's book "With Hiroshima Eyes" is doubly welcome. The stated aim of the book is to emphasise three points:

- \* Nuclear weapons have always been targeted against human beings.

United States practice of nuclear extortion has been an essential element of the maintenance and expansion of its global sphere of influence.

Politically engaged hibakusha are an undervalued moral and political exemplars for all people.

It is the third point mentioned above which the book brings out brilliantly. Hibakusha through their

suffering and resilience are indeed *"testimonies to the possibilities of human courage, compassion and a life-affirming future.* Fifty years after the event, the Hibakusha are slowly dying out. Soon there would be nobody with a first-hand experience of nuclear holocaust. The book brings out vividly the urgency in the statement of Masanori Ichioka, *"The hibakusha feel that they must not die until the abolition of nuclear weapons is realised"*

All US administrations since the Second World War have claimed that the nuclear arsenal was needed to maintain nuclear deterrence. This book shows that the nuclear umbrella, served an even more important function: it allowed the US unhindered access to Third World resources. However, sections of the book dealing with this role of nuclear weapons in preserving US hegemony and control are unfortunately not as well delineated. Although

Gerson, gives a list of 26 incidents of nuclear extortion from 1945 to 1993, the list omits some glaring instances of nuclear extortion. For instance, the notorious 'tilt' in US policy during the Indi-Pak conflict of 1971 and the sending of the nuclear armed aircraft carrier "Enterprise" to Indian Ocean is conspicuously absent

An important point which the book fails to address deals with the fact that *all* nuclear weapons powers and even other states which believe in nuclear weapons as a currency of power, have used the concept of national "sacrifice zones" whose populations have been knowingly subjected to radioactive assaults. Native Americans of the Southwest, Pacific islanders, Australian aborigines, Algerian

and Tibetan nomads, Kazhakistanis, Eskimos of the Soviet Arctic, the people around Pokhran—all are hibakushas. In fact, there is no need to fall into the artificial atoms for war atoms for peace divide. The victims of nuclear power madness run into millions all over the world.

These reservations are mere nit-picking on my part. This is a fine book which needs to be read seriously in India especially now as we too seem inclined to join the gang.

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## Letter (Box)

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A nuclear free India will not materialise out of default, nor will it evolve from knee-jerk reactions from activists hungrily awaiting to pounce on every verbal contradiction of nucleocrats—nor from uncovering reasons proving economic unviability nor the hazardous nature of nuclear pollutants.

However sincere the efforts are, unfortunately, they are still in the realm of reactions. Historically and logically, these exercises arise AFTER the establishment acts—a dome collapses or Tarapur leaks. Perhaps activists should devote their time to energy alternatives that make ecological and economic sense.

Here, in the northern hills of Kerala, there are vast areas of lush greenery and sparkling streams. Electricity, as usual, goes to the urban centres, resulting in voltages as low as 10-15 V in Alakode! Amidst these oasis of almost pristine splendour, if a capital intensive, ecologically disastrous project were to arise, funding would flow from "tourism". And, of course, one more protest group, along with its newsletter, will be born.

Perhaps, if your journal can devote some space to realistic alternatives in energy generation, we could send you documented cases of communities attempting to solve their energy needs. In the meanwhile, we are totally with you in your devotion to a nuclear free India.

*Peter Patrao The PEdal & Turbine Energy Research Trust*

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Rs. 30/- per year (6 issues) (within India)  
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Rs. 500/- for life (only within India)

Demand drafts should be drawn on the State Bank of India, Valod (Code: 0531) For cheques and drafts drawn on other banks, please add Rs 10/-  
Subscriptions, donations and enquiries regarding circulation should be addressed to:

Editor Anumukti  
Sampoorna Kranti Vidyalaya  
Vedchhi, 394 641 India  
Tel: 02625-2074

*Graphics: Sumesh Chandran*

*Anumukti Team: P. Sabadevan, Peter Patrao Satyhamitra and Surendra Gadekar*

*Published by S. Gadekar for Sampoorna Kranti Vidyalaya and  
Printed by him at The Parijat Printrty Ahmedabad.*

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