



ANUMUKTI

A Journal Devoted to Non-Nuclear India

Volume 8 Number 5

April / May 1995

The Highest Duty

I do not ask for mercy. I do not plead any extenuating act. I am here, therefore, to invite and cheerfully submit to the highest penalty that can be inflicted upon me for what in law is a deliberate crime, and what appears to me to be the highest duty of a citizen.

Mohandas K Gandhi (Statement in the Great Trial of 1922)

Your Honour, the Douglas County Jail is not a comfortable place to be

.....especially for someone of my age and disability. I am 68 years old and blind. I can no longer read books or magazines, or newspapers or even the mail that comes to me from friends and family. I can no longer play the chess games and card games that help to while away the days and weeks and months in jail.

But I did not come to Omaha to seek comfort. I did not come to Offutt Air Force Base and to jail in search of relief from pain and suffering that is largely of my making. And I have not come to this courtroom today to negotiate a return to the comforts of home.

I came to make a point I came here to say with my body what I have been saying with words for almost

half a century. I came here to alert

this courtroom to our government's preparations for waging nuclear war.

I could have gone to any district in the United States to make the point. Sadly, our government's design, manufacture, testing, transportation, deployment, command and control of nuclear weapons permeates every part of our land. But I chose to come here because Offutt Air Force Base is headquarters of the US Strategic Nuclear Command, which controls the targeting and launching of many thousands of nuclear warheads, some more than 100 times more powerful than the bomb that destroyed Hiroshima. And I chose to come here now because, contrary to public opinion and despite the end of the cold war, our government has not relinquished one iota of its capacity for waging nuclear war. and it has no intention of doing so.

Under international law it is a crime to point weapons of mass destruction at defenceless cities. Under international law, it is the duty of every citizen to do everything possible to prevent such crimes. Many international laws are also the law of our land, having been ratified as treaties by the Senate of the United States. I have done my best to uphold the law. Now it is the responsibility of this court.

Your honour, you have seen the evidence in this case and rendered your verdict of guilty. So be it. If this is the time for me to express regret and beg for mercy, I do so readily.

I regret that I did not succeed in penetrating the legal thicket of this case to apprise the court sufficiently of the clear and present danger in this district. I regret that, like the good judges who looked the other way in Nazi Germany while Hitler was preparing his holocaust, you

could not bring yourself to take appropriate action while there is still time, I regret that you did not seize this opportunity to declare Strat-Com a global public nuisance, a threat to the world, a crime against humanity.

I beg for mercy - not for myself, but for the many millions who may some day perish under the mushroom clouds of nuclear weapons launched, in effect, from this very district I pray for mercy for the children, the old and the sick, the disadvantaged and the disabled who suffer daily, even in the absence of nuclear war, because public funds that should be spent for them, rather than siphoned into the coffers of corporations and military services that profit from preparations for nuclear war. And I beg for mercy for the earth, suffocating and dying bit by bit under its mounting burden of permanent, deadly, radioactive poison.

Finally, Your Honour, I beg you to reconsider your verdict. Not for my sake, but for the sake of all I have mentioned. If you cannot do this, then I welcome whatever prison term you propose. Please know that as a matter of conscience, I cannot accept any probation that would keep me away from Offutt, or any other military or nuclear installation. On the other hand, if you find that you cannot in good conscience enforce a law that exonerates Strat-Com while criminalizing me, I invite you to come down from your bench and join me and my friends at the gates of Offutt Air Force Base. We need your help. Thank you.

*Sam Day from The Inside
Word*

From the Editor's Desk

Nuclear Non-Proliferation Treaty (NPT) has been in the news lately. We have previously stated the Anumukti's position on this treaty in clear terms. We remain unambiguously opposed to India or anybody else for that matter, signing this treaty since we feel that no self-respecting person or nation can sign the treaty. The treaty seeks to perpetuate injustice in international relations and rewards those who have wilfully harmed their own unsuspecting citizens besides all other beings. The nuclear haves have no intention even now of foregoing the power acquired through possession of these weapons and are in fact in the process of 'refining' these and other newer tools of death. Even the blood money that these nations are prepared to pay to other nations for observing nuclear celibacy is paid in the false coin of 'peaceful nuclear technology'. A bad bargain for all concerned.

However, our opposition to the NPT does not in any way imply support for those in India who want to ape the wicked and make the bomb. In this issue we have a number of articles from Sam Day—a previous editor of Bulletin of Atomic Scientists who continues to oppose his country's nuclear madness not only through words but by laying his body on the line. Some day I hope I shall have the same courage.

Survey cit Kakrapar: Volunteers Needed

From May 20th onwards, we intend to do a health survey of people living in the vicinity of Kakrapar Atomic Power Station. The plant has been in operation for just two years. A team from South Gujarat University at Surat had done a base-line health survey of the population. This survey had been funded by the Department of Atomic Energy and has received a lot of co-operation from the nuclear authorities. The findings of the survey have yet not been published. There is a rumour that an interim report has been submitted to nuclear authorities, but the public has no access to it

We strongly feel that information regarding their own health and surroundings is the public's right. The main purpose of our survey would be to restore this right to people around Kakrapar. We intend to publish our findings as soon as the analysis is over, hopefully before the end of this year.

A training camp for volunteers would be held in Vedchhi from May 20 to May 23, following which everyone would proceed to do the survey. Amongst the volunteers, an ability to speak in Gujarati or Choudhry or Gamit would be a great asset, although we also need people who can help with computer data entry.

Wrong Turns At Every Crossroad

NPT: A Northern Antinuclear Perspective

In the half century since a bomb of unimaginable fury ushered in the atomic age, three events stand out as pivotal in the long and losing struggle to prevent the scourge of nuclear war by somehow stuffing the genie back into the bottle.

In 1948, an effort to put atomic energy under international control, taking it out of the sovereign states, foundered on superpower rivalry. The US refused to relinquish its sole possession of nuclear weapons and the Soviet Union was determined to break that monopoly.

In 1963, forced to deal with a worldwide uproar over radioactive fallout from nuclear weapons testing, the nuclear governments of that time, (the US, the USSR and Britain) preserved their testing capability by agreeing to limit it to deep holes under the ground. The result was that field testing of new warheads, one of the keys to nuclear weapons development, continued unabated and the arsenals grew enormously.

In 1970, when advances in nuclear technology threatened to spread nuclear weapons throughout the industrialised world, the five nuclear weapons powers sought to stem the tide by negotiating the United Nations Non-Proliferation Treaty. The NPT bought off the "have not" states, by offering them nuclear power technology in exchange for their pledge not to produce nuclear

weapons. In turn, the "have" states promised to cut back their arsenals, leading to nuclear disarmament. Yet, despite surface appearances, the nuclear arms culture continued to flourish.

In each of these instances, human aspirations for freedom from the fear of nuclear destruction were systematically and cynically thwarted by machinations of what has become a deeply entrenched nuclear-military-industrial establishment.

Today, as in the past, the nuclear lobby is at work outflanking, confusing, and even infiltrating the forces that still place their hope in a reasoned and non-violent end to the nuclear arms era. Sadly, these corrupting influences can be seen at work in the current efforts of the "arms control" community, in support of a Comprehensive Test Ban Treaty (CTB) and a strengthened Nuclear Non-Proliferation Treaty.

Late in January, in what appeared to be a move toward final termination of nuclear weapons testing, President Clinton announced that the US would no longer hold out for an "escape clause" in the CTB now being negotiated in Geneva by the major nuclear weapons states. Since US hesitance had come to be a key stumbling block in the negotiations, the apparent policy switch paved the way for the long sought CTB.

But, as in 1963, when the nuclear states agreed to banish testing from

the oceans and the atmosphere, there is a loophole that would leave the nuclear establishment free to conduct business as usual. In 1963, the loophole left the nuclear weapons laboratories to test underground. In 1995, the loophole is the sanction to continue testing *in the laboratory*.

While arms control advocates have long pinned their hopes and put congressional muscle behind closing the underground loophole, the nuclear weapons elite have been preparing a fall-back position in their laboratories at Los Alamos, New Mexico, and Livermore, California. Their success in achieving this was confirmed last fall when the US Energy Department announced plans to build a \$ 1.2 billion "National Ignition Facility" at the Livermore lab.

The function of the new facility would be to simulate the unique conditions (heat, pressure, and radiation) which are necessary for the testing of newly designed nuclear war-heads and their components which are necessary for the testing of newly designed nuclear warheads and their components. Its purpose and effect is to facilitate the continued forward thrust of nuclear weapons development without the need for new field explosions that are expensive, dirty, detectable and politically burdensome.

Continued reliance on the NPT as a way of shrinking nuclear arsenals and confirming their spread also is

fatally flawed. This will become even more evident when the 170 signatory states gather on April 17, to consider whether to extend, modify, or scrap the existing 25-year old agreement

Many NPT critics will be attempting in New York to pressure the nuclear weapons states into deeper cuts by agreeing to a limited extension of the treaty. But this would only defer the unresolved issues underlying the NPT:

If the signing of the CTB leaves the loop-hole of laboratory testing for technologically advanced nuclear "have" states, why should the new treaty be taken as evidence of their intent to give up their advantage? Surely, NPT should not be extended without a ban on the testing in the laboratory as well as in the field, and without international monitoring to ensure compliance.

What about the problem of clandestine nuclear weapons production by states that refuse to sign the NPT and thereby avoid the international inspection of their nuclear facilities? Notable amongst such rogue states are India and Pakistan and Israel. Surely, NPT should not be renewed without the provision of economic and diplomatic sanctions against NPT-1 non-signatories.

What about the wisdom of continuing to promote nuclear power in the Third World as an incentive for staying away from nuclear weapons production? Iraq and North Korea, both NPT signatories, have shown how international inspectors can be hoodwinked. The leading industrial states now pushing nuclear power on the Third World have already encountered the ruinous health, environmental, and economic effects. Surely, NPT should not be further extended without a fresh assessment of the global impact of nuclear power.

Not surprisingly, the nuclear establishment in the US, having infiltrated and seduced much of the liberal arms control community, is pushing hard for a Comprehensive Test Ban Treaty - excluding laboratory testing - and for renewal of the Non-Proliferation Treaty with no strings attached. They argue now, as they did before, that this is the most we can accomplish at this time.

For those who have learned to live with the bomb, and to depend on it and profit from it, 1995 promises a renewed lease on business as usual of the kind secured in 1948, 1963 and 1970. For the rest of us it could bring still another lost opportunity to usher out the atomic age short of atomic war itself.

Sam Day, in Nukewatch

NPT, A SOUTHERN PERSPECTIVE

The NPT has not been much of a success either in promoting disarmament or in promoting nuclear non-proliferation. Even while the United States and Russia have made a modest beginning in reducing their nuclear arsenals, they continue to press for an indefinite continuation of the NPT. This would allow them to maintain nuclear weapon arsenals forever.

The three other nuclear power signatories to the NPT - France, Britain and China - remain free to

upgrade and modernise their nuclear weapons. And despite being signatories to the NPT, Iraq and North Korea have managed to develop their own clandestine nuclear weapons programmes.

The non-nuclear nations view the NPT as an unequal and inadequate treaty. They are justified in thinking that an indefinite extension of the NPT means an indefinite postponement of universal nuclear disarmament. As it is, the five declared nuclear powers have no time frame

within which they plan to eliminate their nuclear weapons arsenals. The US does not even support Geneva negotiations for a treaty to outlaw the first use of nuclear weapons against non-nuclear states, Russia has retreated from its 1978 no-first-use pledge. China still continues to test; and of the other four who have accepted a voluntary ban on testing, it is still not clear how long France will adhere to it. and there is pressure even in the US to continue with hydro-nuclear testing or laboratory level testing.

If the important long term goal of the NPT is universal nuclear disarmament, then it is difficult to see how the non-nuclear nations can be convinced that this goal can be achieved through an indefinite and unconditional extension of the NPT.

The treaty has no teeth. It does not place reasonable obligations on the declared nuclear powers to move towards disarmament. There is no time-frame in the treaty for disarmament, no markers for progress towards that goal and no censure, sanction or punishment for failure to disarm. It is any wonder then that Article VI of the treaty, its general link with the goal of disarmament, has become a major rallying point for the non-nuclear signatories to the treaty?

Because the NPT didn't aim towards universal nuclear disarmament in a meaningful way, it was not able to bring in nations which wanted to keep their nuclear options open - although it is quite possible that even if the NPT were an equal treaty, countries like India and Israel might still have kept out of it.

The NPT is a contradictory treaty in several respects - its objective is to prevent nuclear proliferation by the Haves while prohibiting horizontal proliferation the Have Nots; it actually promotes commercial nuclear technology and materials that can be used in weapons programme; and it justifies peaceful nuclear explosions whose benefits are yet to be demonstrated but whose disastrous environmental consequences are all too apparent. There are several other inadequacies in the arrangements associated with the treaty - inefficient safeguards, the unresolved

confusion between civil and military weapon and dual-use potential of nuclear technology, no clear definition of a nuclear weapon,, the dual-role of the IAEA as both a promoter and controller of nuclear technology etc. These have been discussed endlessly by experts.

No doubt the various shortcomings of the NPT can be discussed in detail to counter the arguments of those who want to extend the treaty indefinitely in its present form. The political point, however, is that from which perspective and with which goal are these shortcomings being pointed out. Is the perspective one of meaningful progress towards disarmament and non-proliferation or of merely maintaining a moral high ground while simultaneously creating a space for maintaining a nuclear option. The question is one of tendency - which way is one moving while making the right noises?

The question may have been resolved in the case of South Africa, which has dismantled its nuclear weapons and joined the NPT. It is not of much significance in the case of Argentina and Brazil because they have taken definite steps in the direction of bilateral and regional agreements on disarmament. But it assumes a special significance in the case of the undeclared of de-facto nuclear notions outside the NPT - i.e. Israel, India and Pakistan. By saying that in the Middle East the NPT alone cannot prevent local wars, Israel is only defending its undeclared nuclear status. And when India criticises the NPT as not promoting global disarmament and being discriminatory, we know only too well that these are self-serving arguments for keeping the Indian nuclear weapon option open.

Defendants of nuclear weapons in the undeclared of de-facto nuclear states are using a number of devious arguments to justify not giving up their nuclear weapons capability. The use of the racial metaphor of maintaining a balance between the white and the non-white nuclear and nuclear capable powers, the argument for achieving self-reliance and strategic autonomy through proliferation and claiming that NPT cannot resolve regional conflicts are all part of the same bag of arguments.

Here is a sample of the racial argument from an Indian strategic analyst who sees a desirable balance emerging between the first four nuclear powers - the USA, the USSR (now Russia), Britain and France and the late entrants like China, Israel, India and Pakistan. He writes: "Today we have a situation where as against the four white nuclear weapon nations there are four non-white nuclear weapon/nuclear capable weapon nations, corresponding to four civilisations - the Sinic, the Jewish, the Hindu, the Islamic...Today there is a balance between four white and four non-white nuclear weapon/nuclear capable weapon nations. There is no reason why this balance should be disturbed in favour of the white nations by reducing the non-white representation."

The argument is not only racist it is also patently dishonest, there can be no disarmament by legitimising the nuclear proliferation of Israel, India, Pakistan or China.

Even the end of the Cold War is used by the defenders of nuclear weapons in India to argue for proliferation. It is suggested that the bipolar world through its system of alliances

permitted an "external balancing" which obviated the need for developing nuclear weapons by several other countries. However, since this has become impossible with the collapse of the Soviet Union, they argue several middle ranking developing countries feel the need to acquire their own nuclear capability- a sort of "internal balancing" to maintain their strategic autonomy and independence.

Yet another argument is that since some nuclear proliferation has already taken place, why not shift the focus - from preventing nuclear proliferation to "managing" it. Thus an Indian bomb analyst has suggested that a supplementary agreement to the NPT be signed to create what he calls "an Equal Opportunity NPT" which would help bring the nuclear hold-outs against the treaty into the regime, without undermining it. This, it is suggested, could be followed with an arrangement, prohibiting all further nuclear-weapon related activity world-wide, and which would ban all future manufacture of nuclear weapons, impose a comprehensive verification regime on all countries. The long and short of these arguments is that as long as nuclear weapons continue to be seen as a potent currency of power internationally, there would not only be proliferation, but also many arguments to rationalise their spread.

Clearly, the alternative to a discriminatory non-proliferation treaty would be genuine and complete nuclear disarmament through credible ways leading to the elimination of nuclear weapons. Disarmament can only be promoted by actually disarming and not by proliferating even if in a limited manner. The end of

the Cold War has knocked out what ever basis there might have been for nuclear weapons. And although there is a long way to go towards a nuclear weapon free world, elimination now appears to be a realistic and necessary goal.

Within the overall context of the end of the Superpower rivalry, several factors have made it conducive today to push the agenda for elimination of nuclear weapons. The successful adoption of the Chemical Weapons Convention is one such factor. The inability of the declared nuclear powers to push through an indefinite extension of the NPT is another. The movement forward on a Comprehensive Test Ban Treaty and on fissile material cut-off is yet another factor that shows that the disarmament and non-proliferation agenda can be pushed on several complimentary, converging and mutually reinforcing tracks.

The crux of the matter is to unequivocally repudiate the security doctrines and policies which justify the development, possession and use of nuclear weapons, and to make a commitment to the objective of eliminating nuclear weapons. Once this is done, several approaches are possible to meet this objective.

One such approach in *the* West Asian and South Asian contexts is that of proposing the setting up of Nuclear Free Zones. Such zones are good transitional mechanisms to global disarmament. At the same time they represent a principled and yet realistic framework for nuclear restraint in a region.

The proponents of nuclear weapon free zones argue that there is a pow-

erful political case for nuclear weapon free zones because they address the issue of security without sacrificing national sovereignty of legitimising the possession of nuclear weapons by a handful of states. While they are a potent contribution to nuclear disarmament, they do not at the same time negate a larger global effort

It is difficult to see how the path to nuclear restraint and disarmament either in West Asia or South Asia can go via the NPT. Any restraint must not single out some governments for disarmament while the declared NWS (and Israel) continue to possess nuclear arsenals. Thus, for example, in mid-February, in Cairo, the Arab league members - to "make the Middle East a zone free from atomic, biological and chemical weapons." The draft is to be presented, according to news reports, to the Arab League foreign ministers for ratification in March in Cairo.

The idea of a Nuclear Weapons Free Zone has been mooted in the South Asian context too - by Pakistan and by peace activists even in India.

Analysing India's options for example, one such activist has argued that in the absence of a coherent nuclear doctrine, India's nuclear choices are painfully limited. The choice of closing the nuclear weapons option seems politically unfeasible given the hype and jingoism over Pakistan's nuclear capability. Implementing the nuclear option and announcing that India has nuclear arsenal could be even more problematic as it would elicit a similar response from Pakistan and at the same time provoke China into a nuclear-adversarial relationship which would

result in an unequal nuclear arms race.

But the option for India - engaging Pakistan in a bilateral dialogue to establish a nuclear weapons free zone in South Asia - actually provides a workable alternative to the discriminatory nuclear non-proliferation treaty while supporting genuine disarmament.

To quote, once again, an advocate of the South Asian Nuclear Weapons Free Zone: "As transitional steps, the two governments should agree not to deploy missiles, to freeze fissile material production, and not to test or use their nuclear weapon capabilities, as well as take confidence building measures. This will lay down the ground for involving other South Asian states and the nuclear powers in negotiating a Nuclear Weapons Free Zone agreement - prevent the manufacture or deployment of nuclear weapons in the region, the targeting of such weapons at it, or their transportation through it."

However given the existence of weak governments in both India and Pakistan at the present juncture, such a regional initiative is not possible without global measures towards nuclear disarmament. Perhaps this is true even of West Asia.

Some Nuclear Weapon States such as the US have tried to push through the Nuclear Weapon Free Zone idea in South Asia. But they are bereft of any moral legitimacy in arguing for such an initiative unless they themselves are seen to make proportional nuclear disarmament commitments.

Thus peace activists in South Asia, for example, have been arguing that global agreements such as CTBT, no first use and fissile production cut-off are a pre-condition for a South Asian Nuclear Weapon Free Zone initiative. They are necessary pre-conditions but not sufficient. The argument is that to be effective in breaking the South Asian Impasse, CTBT, no first use and fissile material production cut-off must be followed by (a) deep cuts in strategic nuclear weapons of the five Nuclear Weapon States; (b) an universalisation of the INF Agreement; (c) a substantial reduction of strategic missiles; (d) quick elimination of battlefield tactical weapons; and (e) progress in verification agreements.

Needless to say that if the NPT is extended indefinitely this April it would become so much more difficult to take these major steps to eliminate the bulk of the world's nuclear arsenals.

Indeed, even strategic analysts in the nuclear weapon states realise that unless some genuine progress is seen to be made in this direction, the NPT cannot be extended unconditionally and indefinitely. At the last count the US needed 15 to 20 more votes than it now has out of the 169 signatories to the NPT to get it extended indefinitely by even a simple majority. The prospects of a decisive majority are little.

Writing in the New York Times on Feb. 15 1995, Selig Harrison, a fellow of the Carnegie Endowment for International Peace, suggested that: To rescue the non-proliferation treaty, the nuclear powers should take two immediate steps to demonstrate their recognition of their Article VI obligations.

First, the US and Russia should begin negotiations on a Third Strategic Arms Reduction Treaty (START III) that would set a timetable for a gradual decrease of nuclear weapons below the level of 3,500 each negotiated by the Bush Administration in the START II agreement of 1991. The timetable should project progressive and balance reductions down to 600 nuclear weapons...Second, the START III dialogue should be accompanied by five-power negotiations on the 'treaty of nuclear security and stability' proposed by President Yeltsin in the UN in September. He envisioned 'further steps' to limit Russian and American strategic nuclear weapons, together with a cap on further increases in French, Chinese and British nuclear arms while the US - Russian build down progresses."

Then he suggests that getting down from the 660 to 0 would require a broadened dialogue embracing nuclear capable states such as India, Israel and Pakistan. And elimination, he says, will become a realistic possibility only if continuing progress is made in establishing secure safeguards against further proliferation. This certainly represents a way forward.

Only once the extension of the NPT is predicated on the specific movement forward on several complimentary, converging and mutually reinforcing nuclear disarmament tracks, does it make sense even to argue what kind of rolling extension of the treaty should be supported.

*Bharat Bhushan, in WISE
News Communique*

Military Experiments

It has now been admitted by the US Department of Defence that in the dawn of the nuclear age it undertook deliberate radiation experiments with children, pregnant women, prisoners, mentally retarded persons and the terminally ill. This was done during the same time period in which the US and other victor nations prosecuted Germany for the same crimes against humanity.

These types of crimes and duplicity appear to be still practised by the US military, as recently as in the Gulf War. It also appears to be part of the military policy underlying the HAARP project now underway in Gakona, Alaska, with planned implementation in 1997. This High Frequency Active Auroral Research Project (HAARP) will heat the ionosphere using powerful beams of non-ionising radiation. Potentially this will set the Earth into vibrations or oscillations similar to the Earth's axis wobble. The joint US Army and Navy project involves interference with the Earth's magnetosphere with unknown effects at the opposite magnetic pole near Australia and New Zealand. Professor Richard Williams has denounced the experiment as "irresponsible and dangerous". Alaskan Federal Aviation Authority (FAA) personnel, pilots, communications engineers and others have raised alarms about HAARP'S interference with radio communication. They were overruled by the national FAA which approved the project proposing that the problems be "mitigated". On the other hand, the military claims the transmission interference problems are too great to

allow for locating HAARP to close to any military facility. The capability of HAARP is greater than *the* total output of the more than half-a-million US ham radio operators using their maximum allowed power. Communication with isolated Arctic villages and bush pilots is often a life and death matter in the North.

The inventor of HAARP is Bernard Eastlund. He was hired by ARCO "to find a use for their Alaska Birth Slope gas deposits." Patents held by the ARCO subsidiary building HAARP describe an ionospheric heater capable of stopping missiles, changing weather and disrupting global communication. The HARP project appears to be an implementation of Eastlund's patents.

The Military has made increasing use of non-ionising radio waves, like the polarised pulsing transmissions planned for HAARP, in recent years as an electronic "fence" at Greenham Common and other military bases. According to *Defense News* an electro-magnetic pulse (EMP) weapon designed to mimic the flash of electricity from a nuclear weapon was an example of technology used in Operation Desert Storm. The Gulf War has been described as an "electronic battleaeld" with 14,000 electronic detectors each sounding up to three times daily during the war. This electronic environment may well be one of the triggers which left more than 16,000 veterans with Gulf War Syndrome. The preponderance of current research shows that non-ionising radiation can promote cancer growth, cause

disorientation and many other physical effects.

Certainly admitting to wrong doing in the past and making some attempt to compensate the victims is a step forward for the military. However, such action becomes hollow, dishonest and reprehensible if the gross violations of human rights continue under another guise.

Until the US ratifies the United Nations Human Rights Covenants and joins the international community of nations which recognise and uphold those rights, such purges of past mistakes will not be taken seriously. The right of all humans to life and health should be a constituent part of a genuine democracy. Experimenting with electronic zapping of the human body, disruptions of weather and wiping out of essential communication in the guise of national security constitutes a crime against humanity and perversion of both the Constitution of the United States and the Charter of the United Nations. It undermines the very notion of security.

References:

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2. *Williams, R. Physics and Society, April 1988.*
3. *Eastkind, B. Microwave News. May-June 1994.*
4. *Defense News, April 13-19, 1992.*
5. *USA Today, May 26, 1994.*

Dr. Rosalie Bertell

Letter Box

So Little For So Much

It has happened yet again. Every year the nuclear establishment manages to (mis) appropriate the lion's share of government funding for science and technology. One would have thought that in the post liberalisation, market driven economy the criteria of efficiency and minimum level of performance would be applied to nuclear industry as well. But no such luck. The gross distortions in our science policy which have favoured atomic energy projects, persist even today. A quick look at this year's budget allocations tell its own story.

Nucleocrats have managed to allocate themselves more money than the entire budgets of the Department of Science and Technology, the vast network of 29 CSIR Laboratories, bio-technology, and the Department of Non-conventional Energy Sources, combined! Of the energy budget, 85% goes to "develop" nuclear technology and all the so called non conventional energy sources are allocated the remaining crumbs.

Comparison of the atomic energy budget with the budget for priority sectors like primary education is equally revealing. Despite all the crocodile tears of the finance minister about the crucial importance of elementary education, the total allocation for primary education (Rs 651 crores) and secondary education (Rs 670 crores) is still less than the nuclear largesse.

Regular readers of Anumukti need not be told about the "achievements" of DAE despite the thousands of crores that have been pumped into it for decades. What is alarming is the fact that today, DAE is not in a position to make even false promises. It has already admitted that the uranium reserves in the country are sufficient only for about

Budget Allocations

Department	Budget in Rs (Crores)
Science and Technology	418.85
CSIR Laboratories	411.03
Bio-Technology	96.52
Non-Conventional Energy Sources	248.38
Atomic Energy	1402.15

10,000 MW of installed capacity. The Indian breeder development programme has been a disaster, like all the other such programmes in the world. The cost of developing any revolutionary reactor technology is mercifully ruled out. The writing on the wall is becoming more and more visible. Atomic energy has nothing to offer. So what is the money going into?

It would have been gratifying if the answer had been "for research into decommissioning and waste management aspects." Moral responsibility is not a word to be found in nay nuclear glossary, but the nucleocrats owe the society at least some effort towards cleaning up the mess that

they have created in the last four decades.

Sanjay Havanur

Against Toxic Dumping in Mysore

I am receiving my copies of *Anumukti* regularly and enjoying every one of them. The recently introduced *AERB Column* is, in my opinion, something of a victory for our movement I hope that people within the nuclear establishment get to read *Anumukti* and especially the *AERB Column*.

You are probably aware that the Kar-

nataka Raitha Sangha is agitating against the dumping of toxic waste in the vicinity of three villages in the Chamaraja Taluka of Mysore District. The agitation is being led by Sri Mallesh, the secretary of the Sangha. I have written to him and to *The Star of Mysore*, a local English newspaper expressing my support. I feel that the toxic waste which is now proposed to be dumped cannot but include some waste from the uranium enrichment plant at Ratnahalli which is just 4 kilometres outside Mysore.

Asha Vombatkere
New Delhi

Tragic Consequences of Ignoring Sakharov's Warnings

After the success of an extremely powerful test of a Hydrogen bomb in 1955, Andrei Sakharov began to worry about its biological effects. Animal studies conducted with his biologist colleagues indicated that the ingestion of strontium 90 would cause both immediate and delayed damage to the immune response, and he calculated that each atmospheric test with a 50 megaton yield could cause a million premature deaths world-wide.

In 1958, Nikita Khrushchev was eager to reach a testing moratorium with the Americans and permitted Sakharov to publish his concerns. And indeed, neither the United States nor the Soviet Union conducted any above-ground tests in 1959 and 1960, much to Sakharov's satisfaction. But in 1961, after a fruitless, heart-breaking meeting in Vienna between Khrushchev and newly elected President John F. Kennedy, Sakharov was devastated to learn that Khrushchev had ordered the testing of hydrogen bombs of nearly unlimited explosive power - equivalent to 25,000 Hiroshima bombs - powerful enough to accelerate the death of several millions, according to Sakharov's calculations. When Sakharov questioned Khrushchev at a meeting later that year, he was denounced as "politically naive" and was thereafter banished from the Soviet nuclear establishment.

There is now considerable evidence of the remarkable prescience of Sakharov's predictions and the tragic consequences of ignoring his warn-

ings. For example, in 1992 the Canadian physician R. K. Whyte demonstrated in the *British Medical Journal* that atmospheric fallout caused extraordinary increases in neonatal mortality and stillbirths in the United States and Britain after 1950, thus validating Sakharov's fear that there would be immediate as well as delayed harm to those born during the bomb testing years.

But Sakharov also predicted that man-made radiation would accelerate the mutation of all micro-organisms, leading to the inference that baby boomers born after 1945 with weakened hormonal and immune systems would eventually encounter newly mutated and therefore more lethal strains of bacteria and viruses, sexually transmitted as in the case of AIDS. In a 1990 article in the *American Journal of Public Health*, the Atlanta Centres for Disease Control affirmed that, because of AIDS, the mortality rates of men in the 25-44 age group has started to rise in the 1980s, for the first time ever. And we now know that the organisms responsible for many infectious diseases, including tuberculosis and those associated with the AIDS syndrome, are mutating so rapidly as to resist traditional antibiotics, creating an unprecedented public health crisis.

Finally, mortality data broken down by age and published annually in the United Nations Demographic Yearbook indicate that in the 1980s, the baby boomer's mortality rates deteriorated in all the major nuclear nations except Germany and Japan (cited in *International Journal of Health Services*, April 1994).

Meanwhile, in the 1980s, the mortality rates for 25-44 year olds - the

most productive group in the labour force - continues to decline in Germany and Japan. Thus we are left with the ironic speculation that because those two countries lost World War II, they were precluded from exposing their progeny to emissions from the manufacture and testing of nuclear weapons, and may therefore be said to have won "World War III".

The lesson to be learnt from the history of the atom bomb is that both the Western world and the former Soviet Union have paid a great price for ignoring the warnings of such great scientists as Albert Einstein, Niels Bohr, Linus Pauling, and Andrei Sakharov.

*Jay M Gould in
Bulletin of Atomic Scientists
January/February 1995*

Letter from Eastern Europe

What do greenies and anti-nukes do with their holidays - or what they fondly imagine will be holidays? Generally it seems, we turn them into workdays, if not by coming to Vedchhi to write articles like this one, then by going to places like Eastern Europe and getting roped in (willingly I must admit), to fight with plans by the European Bank for Reconstruction and Development (EBRD), Slovensky Energeticky Podniky (SEP) the Slovak electricity producer, Electricite de France (EDF), Seimens and Bayernwerke, to complete the construction to western standards of two Soviet-designed VVER nuclear plants in Slovakia. Two-three months solid

work that ended with the Polish Ecological Club (Polski Klub Ecologiczny) and the author all over Polish TV and newspapers.

Wait! This is getting ahead of myself. It all started innocently enough, when my spouse Mishka (who is Polish by birth) and I toured Poland and Czechoslovakia for about two months in November/December' 1994. It seemed natural in the course of our other activities, to call in on various environment groups in Poland and Czechoslovakia. We spoke in our travels to activists in the Green Federation and the Green Foundation, and the Council for All beings and to Tomasz Terlecki in Polski Klub Ecologiczny in Cracow, the medieval city that is the cultural heart of Poland. Tomasz indicated that he might have something up his sleeve to work on in the shape of a nuclear reactor in Slovakia called Mochovce', and gave me a file of material relating to it. We then spent a week with Hnuti Duha, a radical grass-roots group in the city of Brno, in Czechoslovakia - also an interesting medieval place, but quite different from Cracow. Hnuti Duha just happened to have extensive files on the safety of Russian-design nuclear power plants, which naturally, I raided, since Mochovce was a Russian-designed plant.

Hnuti Duha is strongly involved in opposition to the Temelin nuclear power plant, as well as with the already operating Dukovany nuclear plant, which just happens to be the same kind of plant as the Mochovce plant: a Soviet-designed WER213/440. Temelin is a Soviet-designed WER-320/1000 plant, which is due to be completed by another western consortium of which the main player is Westinghouse.

As well as its nuclear concerns, Hnuti Duha is also very much concerned with uranium mining and waste issues, energy, and animal rights.

Uranium Mines: The Spearhead of the Assault

Nuclear power plants run on uranium, and while we were with Hnuti Duha, they took us to see the uranium mine that supplies the Dukovany nuclear plant with fuel. Dukovany has a contract with a local Czech firm named Diamo for its 56t/y consumption. Diamo operates a very costly and messy mine at a place called Rojna, 40 km Southwest of Brno, and a meeting was set up for us to talk to local people.

The locals showed us a monster tailings dam containing 1.1 million tonnes of tailings and 17 million tonnes of 'sludge'. They showed us a smaller tailings dam in what used to be a pretty valley consisting of sludge and piles of waste (including we were told, cyanide waste) that reflected the setting autumn sun in interesting shades of toxic green.

Later, they took us to a local meeting hall, not 300m from the big tailings dam, where they entertained us with limitless home-cooked food and Czech beer (brewed since 1326) and with tales of the mining company and their so-far fruitless struggle to get rid of it. The contrasts and the similarities with our situation in Australia were startling: Rojna was a smaller, yet a much dirtier operation than anything I had come across in Australia. Maybe it resembles mines in India. These people lived, not 500 or 100 km away from it as they do in Australia, but 200-300m away from it. The dust from the dried tailings

sludge dusted their crops, their animals, their children, and them.

Radon measurements were not even taken by the company because it was said that measurements done at another mining centre were 'enough'. Soil sampling had turned up thorium - a decay product of uranium. The mining company said it had 'come down in the rain'. Thorium is not a component of fallout either from Chernobyl or from testing, so there is no way it can have come down in the rain. Cattle deaths had increased fourfold in the 1990s, and illnesses amongst schoolchildren had risen by 100% in one year.

What upset people most however, was the attitude of the company and the authorities. According to the leader of the local agricultural department, I'm not drinking milk, so I don't care'. The mining company simply maintained that the concerns of local residents were being stirred up by nasty environmental activists like Hnuti Duha.

I *Now that the place is already spoiled, we might as well use it for a dump*

Indeed, while the company maintained on the one hand that there were no problems from its operations, it argued on the other hand that the area had already been 'spoiled' and should be used as a kind of 'national sacrifice area' for the disposal of various toxic wastes, an unappetising prospect for the locals.

As we took the train from Brno to Rojna, we observed dense forests, narrow valleys, a covered medieval bridge, a castle on a crag, and ancient churches and villages. Just the place, the folks from Hnuti Duha

Cold us, for a nuclear waste dump for the Dukovany reactors. The villagers had told us that they were indeed, a 'candidate site' for a national nuclear waste dump. After ah, they had mine tailings and toxic waste, so why not a nuclear waste dump?

A major theme for every Eastern European environment group is energy. This picture is completed by the major nuclear concerns in the Czech Republic and Slovakia - concerns which, if Mochovce and Temelin successfully reach completion, may ripple out to affect unfinished nuclear plants in Poland also. Also critical to the Eastern European energy picture are the activities of the multilateral development banks such as EBRD, Eximbank, and the World Bank, and programs such as Phare and Tacis.

I *The Worst of Both Worlds*

While these agencies are supposedly funding 'sustainable' and 'least-cost' energy strategies, they are in fact heavily involved in promoting projects which are imposing the worst aspects of Western development, while retaining the worst aspects of the old Communist structures. Meanwhile, those things that the Communist regimes got more- or-less right (such as the heavy emphasis on rail transport and on cheap public transport in general) are dismantled or downgraded.

Current government policies in Poland and the Czech Republic reinforce this trend. The Czech government for example, now considers the excellent train and tram system that it has inherited from the Communists, a system that would be the envy of supposedly advanced Australia, and which compares fa-

vorably with the German one with fares at about 1/5th the price, to be 'superfluous', it explicitly intends to run down the rail system in favour of massive investments in roads funded by multilateral development agencies whose charters include commitments to 'sustainable development'.

Meanwhile, the Temelin nuclear power plant, consisting of 2-1000Mwe VVER-320 plants which was being built with Russian help up to 1990, is to be completed with money from Eximbank and the help of Westinghouse. Never mind the fact that in 1990, Western governments were saying that Russian-designed nuclear plants in Eastern Europe were/are accidents waiting to happen, and that the only sensible thing to do was to close them down. Never mind the fact that Austria, whose own historic capital, Vienna, is not so far over the border, and who sensibly abandoned nuclear power in 1978, is strongly opposed to the completion of Teme in. Never mind the fact that the local population are utterly opposed to it, and that civil disobedience actions (coordinated by Hnutí Duha) have already taken place, and that the previous Prime Minister of the Czech Republic has declared his opposition to it. Never mind the \$USi-2 billion cost of trying to complete the plant to 'western' standards. This is one Communist inheritance that the powers-that-be think must be preserved and built on at all costs.

A similar situation holds in Slovakia, whose Mochovce nuclear plant has become a major European issue, with the Austrian government and a network of environment groups in Austria, Germany, the UK, Slovakia, Poland, Hungary, and the US opposing the project.

Mochovce is an earlier (and hence, according to the Western nuclear industry in 1989-1990-91, a more dangerous) VVER440/213 plant. Construction on Mochovce 1&2 was suspended in 1990 due to lack of money, and the EBRD and EDF/Bayemwerke/Seimens have offered to complete it to 'western' safety standards.

The EBRD has at least, due to its own guidelines for project assessment, been forced to insist that the project sponsors, SEP and EDF, issue a complete environmental impact statement, least - cost analysis, and safety documentation. It was this that I was asked by Polski Klub Ecologiczny to critique.

Meanwhile, back in cultured and medieval Cracow, where baroque and Gothic churches front onto narrow, supposedly car - free streets full of bookshops and cafes where the dissidents used to hang out, and where every third person seems to be wearing a clerical garb of some kind, a few activists also struggle with green issues.

Cracow itself was presented in the 1950s by the Communists with a vast steelworks at Nowa Huta, in an attempt to proletarianise the place. The attempt failed spectacularly in the 1970s as the steel plant became a hotbed of strike activity and massive demonstrations round the only church permitted in the area, demonstrations that succeeded in toppling the regime. But the steelworks has created a permanent greyish brown pall over the city.

I *Automobile is King*

Meanwhile, now that Communism has gone, the push is on to give more

and more space to the private car which apart from the steelworks has become the main source of pollution and of course, to downgrade the once excellent tram and bus systems. Cracow is lucky in that it does have a strong bicycle lobby and it and the green federation are engaged in an effort to rid the old city of cars, and make it an area for cycles and pedestrians. An attempt has already been made to rid the medieval city of cars, but implementation is less than wholehearted. Cars still manage to clog the footpath next to the 11th century church of St Anne and the 16th century church of St Peter and Paul and the University Library.

I *Dhanbad of Europe*

Not-so-sunny and not so medieval, polluted, grubby heavily industrial Katowice and Chorzow, where Mishka was bought up are not so far from Cracow, though ail-too -radical surgery has been done to the timings of the trains that used to make the trip between the two cities so easy. Katowice represents much of what is problematic in today's Poland.

Katowice became an area of mines and factories as long ago as the 17th century, and developed after the partition of Poland under the Austrians and the Prussians and then under prewar and Communist Poland into a major industrial area that produced 10% of the world's black coal, and much of the global output of greenhouse gases. It is a vast conglomeration of genteely decaying 19th century apartments whose facades turn an interesting shade of dark green/black because of the pollution, of vast monolithic Communist-era apartment blocks, gigantic and decrepit mines and steelworks, railways, and elephantine piping.

Katowice has been described as 'the most polluted place in Europe'. I do not know that this is any longer true: The sheer volume of what used to be the dominant form of pollution, industrial pollution, has been slashed by the massive closure of many enterprises, as well as the fitting of some pollution control equipment. To the naked eye at least, Ostrava in the Czech Republic resents a more appalling vista, with vast clouds of smoke and steam belching from an old steelworks. And India certainly has much more diabolical industrial landscapes (for example around Dhanbad) as well as more choking auto-pollution, especially in Delhi.

But Katowice has massive soil and water pollution, and big problems with mine wastewater. And the public transport situation is much worse than in Cracow, where there is a pro-public transport lobby. As in Cracow, pollution from motor vehicles is fast becoming the major source of air pollution. Plans exist for massive superhighway construction round Katowice, which are held up only by the lack of money.

While the public transport services deteriorate further, fares are raised continually, and the regional government last year (1993) actually *apologised* for being unable to get rid of the trams - the mainstay of the public transport system - until sometime past the year 2000. The urgent need is of course, to upgrade and extend, rather than get rid of, what was once an excellent tram system. To keep things in perspective however, it must be said that the system in Katowice would have to deteriorate much further in order to reach the abysmal levels of public transport in Australian cities.

At a national level, this deterioration in public transport manifests in the continual cutting back of 'ordinary' train services, while more up-market 'intercity' and international trains costing ten times as much continue to be promoted. This is a phenomenon that will be familiar to Indian readers.

I *Striding Toward Energy Inefficiency*

The problems of which Katowice is the main example go to the heart also of Communist-style Polish and Eastern European energy-use. Communist-style industrialisation meant the establishment of heavy industries with little or no regard either for the environmental impact of those industries or for efficiency in their use of energy. Poland, Czechoslovakia (now Czech Republic and Slovakia) and Hungary thus have one of the largest ratios of energy-use per unit of GNP. (This figure should be used with care, as GNPs expressed in \$US say more about what a country's currency is worth on the money market than they do about goods and services actually available to local people. Thus, incomes in Poland, and other countries expressed in \$US tell little about the real living conditions of people in those countries: - only that they are going to find overseas travel prohibitive.

This important point accepted, it is nonetheless true that massive opportunities exist for improvements in energy use efficiency, especially in the wasteful industrial sector. At the same time, those areas in which the right things were in fact done by the Communist regime, notably the widespread use of industrial waste heat for other industries and domes-

tic use (you can see the elephantine pipes all over Poland, especially round Katowice) - should be seen as things to build on and improve. The danger is that in the headlong rush to capitalism, they will be forgotten,

and the energy efficiency of the country may in fact deteriorate.

Nuclear power is one area in which governments and their western partners perversely do want to build on

and improve the Communist legacy. It is the one area where that legacy is most dangerous.

John Hallam.

The Arrogance of Resistance.

I listened attentively as a federal magistrate, explaining her guilty verdict, lectured me on the "arrogance" of people like me who place their beliefs above laws democratically arrived at by elected representatives of the people.

Was it arrogant of Martin Luther King, I wondered, to put his own beliefs above the democratically arrived at Jim Crow laws of the duly elected legislators of Alabama, Mississippi and Georgia?

Was it arrogant of Mohandas Gandhi to violate colonial salt tax

laws duly enacted for India by the mother of parliaments?

And what might Magistrate Kathleen A. Jaudzemis think of the arrogance of Emma Goldman and Susan B. Anthony and other suffragettes whose violation of duly enacted all-male voting laws helped open up the

Radiation Like Death Comes Unexpectedly

The Radioactive Fallout of Enron Power Project

A Study of Radon Concentration Released into the Atmosphere due to Burning of Natural Gas is a title of a paper by M. C. Subba Ramu, T. S. Muralidharan and K. G. Vohra of the Division of Radiological Protection of Bhabha Atomic Research Centre. In this paper they present their observation and estimate the dose received by a bystander due to burning of natural gas by the Tata Thermal Power Station and the Rashtriya Chemicals and Fertilisers at Trombay. They find the dose varies from season to season between 0.04 to 2.6 rems per year depending on various factors like wind, precipitation, geographical features, etc. They also state in this paper that the release of radon due to the burning of natural gas

reduces considerably when the gas is processed to remove impurities and fractionated to recover the heavier hydrocarbons. In this process about 30 to 70 percent radon gets removed from natural gas.

Shri Ashok Kumar from Bombay, has raised this issue in connection with the proposed Enron power plant at Dabhol on the Konkan coast of Maharashtra. Again depending on various factors like wind, precipitation and geographical features, previous processing of gas to remove radon, etc. people in the vicinity of the plant might be in for a radiation dose of 0.4 rem to 25 rems per year in addition to other pollution burdens. 25 rems per year is 2500 times the dose recom-

mended by the International Commission on Radiological Protection for the general public.

At a time when the newly installed government in Maharashtra is in the process of rethinking the Enron Project, it might be prudent for it to take this hitherto 'unknown' fact into consideration. Over the long term, this would be of greater consequence than the back-breaking financial burden imposed by the project.

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American political system, including the judiciary, to women?

The thought of those earlier practitioners of civil resistance brought me comfort as the magistrate droned on, citing with satisfaction the ruling of federal appeals court which upheld the conviction of four peace activists who had cited "God's law" in defence of the disabling of a Missouri missile site capable of launching a 1.2 megaton hydrogen bomb toward Soviet Russia.

Magistrate Jaudzemis was right. The higher court's ruling against the 1984 "Silo Pruning Hooks" (Carl and Paul Kabat, Helen Woodson, and Larry Cloud-Morgan) governed her decision in my case. International laws forbidding crimes against humanity did not justify my trespass at the nearby Air Force base which houses the headquarters of the federal government's nuclear war-fighting capabilities.

And she was right, I believe, in holding me accountable by sentencing me to the maximum of six months (a modest penalty in comparison with the punishment meted out these days to many for lesser crimes).

Like King, Gandhi, the suffragettes and others who break the law out of principle, I don't expect to escape responsibility. In fact, it is the punishment which sometimes paves the way for changes in the law. This willingness to "take the rap" is what transforms arrogance into humility and makes civil resistance a potentially powerful instrument of social change.

If laws sanctioning nuclear weapons and nuclear war were truly the

product of legislative decisions democratically arrived at, as the court contends, then civil resistance would indeed be an act of arrogance. But they are not. Such laws are conceived in secret, born in ignorance, and shaped by vested interests which leave little room for fair and honest debate.

Just as Jim Crow and the all-male suffrage once rested on the bedrock of legal assumptions unchallenged by generations of law-makers, so do the assumptions underlying today's national secret laws. Missing from the votes over nuclear weapons systems and the billions of dollars appropriated for them is any consideration of the realities of nuclear weapons and consequences of their use.

Policies based on pre-nuclear war-fighting concepts form the basis of laws that authorise the building of many thousands of nuclear warheads, some of them ten thousand times more powerful than the biggest conventional bomb ever dropped in World War II. Can it be said that such mindless genocidal policies are the product of laws democratically arrived at? Or does not the absence of rational discussions - in the halls of Congress and in the body politic - constitute a form of secrecy as effective as the strictest censorship laws?

Secrecy is the enemy of democracy. That is the point made by an extraordinary activist, Mordechai Vanunu, a former nuclear technician who risked his freedom by breaking the law eight years ago to tell a British newspaper about Israel's secret nuclear weapons facility where he had once worked. For this he is paying the price of 18 years in

solitary confinement in Israel's maximum security prison. Vanunu believed that if Israel was to take this awesome step into nuclear weapons, thereby triggering a nuclear arms race with its Arab neighbours, then the decision to do so should be democratically arrived at, not taken in the deepest secrecy.

So is it, too, with Fr. Frank Cordaro, Brian Terrell, and others who have taken the lead in shining a light into the darkness of the Strategic Command (StratCom), field headquarters for US nuclear war-waging by breaking the trespass laws that protect Offutt Air Force Base near here. Although StratCom's role and mission are a matter of public record, the global implications of its existence are in every protected sense a secret to Congress and the American people.

Was it an "undue display of self-importance" for Mordechai Vanunu to take it upon himself to tell his fellow citizens of the potential nuclear oblivion prepared for them by their government in strictest secrecy?

Was it "overbearing haughtiness" of Frank Cardaro and his colleague Brian Terrell to put their bodies on the line at StratCom in hope of reaching the national conscience on the terrible secret within?

Or are those two just humble prophets of a reality that may some day be as unquestioned as the truths of Gandhi, King, Emma Goldman, and Susan B. Anthony.

Either way, I am happy to be in their company.

from Sam Day

**THE EDITOR DESERVES CAPITAL PUNISHMENT FOR
OMITTING THE LAST PAGE IN THE PREVIOUS ISSUE**



The Disaster Last Time

The whole, last page went missing. 11 My fault and I am sorry. The article to suffer amputation concerned the resolutions passed at the seminar on "Nuclear Safety and the Public" organised by INTACH in Delhi on February 3rd and 4th.

The following are some of the missing resolutions:

10. In view of the rigorous clinical tests carried out at Rawatbhata, and the statistically significant increase in incidence of diseases and deformities ii) found amongst those living in the immediate vicinity of the plant, an independent study should be initiated to determine the safety iii) implications of various plant operation practices.

The public right to information must be codified and given concrete form in terms of entitlements, as an intrinsic component of the process of approval of nuclear energy projects, in particular,

i) the right to appraise the need and rationale of the project.

ii) the right to appraise the hazards and associated risks to the public.

iii) the right to examine and set safety standards and norms.

Subscription Information

Rs. 30/- per year (6 issues) within India.

US\$ 15/-per year or equivalent in other convertible currencies for airmail overseas.

Rs. 500/- for life (only within India).

Demand drafts should be drawn on State Bank of India Valod Branch (Code 0531). For cheques and drafts drawn on other banks, please add Rs. 10 as clearing charges.

Subscriptions, donations and enquires regarding circulation should be addressed to:

Editor Anumukti

Sampoorna Kranti Vidyalaya

Vedchhi, 394641 Gujarat India

Tel: 02625-2074

Please do not send personal cheques or drafts addressed to Surendra Gadekar

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Published by S. Gadekar for Sampoorna Kranti Vidyalaya and printed at Tha Parijat Printrty, Ahmadabad

Printed Book