



## Permanent Peoples' Tribunal

### **CHERNOBYL: ENVIRONMENTAL, HEALTH AND HUMAN RIGHTS IMPLICATIONS**

Vienna 12-15 April 1996

**Judges of the Tribunal:**

<b>FRANÇOIS RIGAUX,</b>	(Belgium) President
<b>ELMAR ALTVATER,</b>	(Germany)
<b>FREDA MEISSNER-BLAU,</b>	(Austria)
<b>SURENDAR GADEKAR,</b>	(India)
<b>CORINNE KUMAR,</b>	(India)
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*The Permanent Peoples Tribunal*

*listened to the people of Chernobyl  
they spoke of a great violence  
they came from a great silence  
a silence that has begun to speak*

*they spoke in a language of suffering  
refusing that Chernobyl becomes  
one more forgotten narrative of our times  
refusing that their tears dry*

*they spoke in a language of knowledge  
challenging the world not to accept  
that the situation was “normal”  
that nuclear energy was “safe”  
that people could return*

*Chernobyl was about the uprooting of communities  
about the destruction of a people  
Chernobyl was about miracles that have  
somehow survived  
Chernobyl was that the worst is yet to come*

## The Procedure

The request for a Session on the environmental, health and human rights implications of the Chernobyl disaster was presented in late 1995 by the “International Medical Commission on Chernobyl” (IMCC) in response to growing medical, scientific and Human Rights concerns over the extraordinarily narrow definition of “damage to health” and “certainty of knowledge” being used by the international nuclear community to describe the aftermath of the Chernobyl disaster.

According to its statutes, the PPT notified the acceptance of the request as well as the timing and modalities of the procedures of the session to the United Nations (UN); the European Union (EU), the World Health Organisation (WHO), the International Atomic Energy Agency (IAEA), the International Commission on Radiological Protection (ICRP). A prompt answer and a set of pertinent documentation was received from the Department of Humanitarian Affairs of the UN; an answer requesting to be informed on the results of the session from WHO; a note proposing the postponement of the hearings of the Tribunal “after the results of the Conference in Vienna (8-12, April) have become available” from the IAEA.

The following experts and witnesses presented oral as well a written evidence to the PPT, and were available to answer the questions of the Judges:

Dr. Gianni Tognoni, Secretary of the Permanent Peoples’ Tribunal (PPT), Italy

*History of the Permanent Peoples’ Tribunal, and its Concern for Human Rights of Victims of industrial and technological disasters.*

Prof. Rosalie Bertell, Coordinator of the International Medical Commission Chernobyl (IMCC), Canada: *Questions before the Tribunal on the Chernobyl Disaster.*

### The Accident and Its Implications for other Nuclear Reactors and For Developing Countries

Sergey Mirnyi, Engineer – Physicist and chemist, Director on Science and International Relations for the International Eco-Poster and Graphics Exhibition dedicated to Chernobyl: *The Nature of the Disaster and its Effects on Water, Soil and Air.*

Prof. Vesily Nesterenko, Belarussian Research Technical Centre, Institute of Radiation Safety, Head for Belarus of Independent Expert Committee Three State Inquiry into the Consequences of the Chernobyl Disaster: *Experience of the Liquidators.*

Commander Robert Green, Royal Navy (Retired): *The implications of the explosion of Chernobyl Reactor 4 for western nuclear power plants.*

Jouli Andreev, one of the main leaders of the Liquidators

Dr. Wolfgang Kromp, Nuclear Advisor of the Austrian Federal Chancellor

Prof. Ross Hesketh, Berkeley Nuclear Laboratory of the Central Generating Board - CEGB

### Chernobyl and The Human Rights of the Victims

Dr. Yourie Pankratz, member of the Foundation for Chernobyl Children, Minsk, on: *The medical, ecological and sociological situation and the responses of government and international agencies*

Prof Galina A. Drozdova, member of the Russian People's Friendship University, Moscow, on: *The Decade after Chernobyl: Information Deficiency and Socio-medical Problems*

Prof. Larisa Skuratovskaya, member of the Institute of General Pathology and Pathophysiology Russian Academy of Medical Sciences, on: *Human Rights, the Death Penalty, Nuclear Weapons and Health Issues in Russia*

Dr. Peter Weish, Prof. of Human Ecology, University of Vienna

Prof. Hari Sharma of IMCC, Nuclear Chemistry, University of Waterloo, Canada

#### Evidence of Genetic or Teratogenic Damage to the Environment And Humans

Dr. Cornelia Hesse Honegger, Scientific Illustrator specializing in Zoology: *Insects collected from Chernobyl, Sellafield and near Swiss nuclear power plants*

Solange Fernex, former Member of the European Parliament: *Video Tape presentation of deformities in plants, animal fetuses and children, following the Chernobyl catastrophe*

Comments and testimonies of:

Prof. Galina Panasyuk

Dr. Sanghamitra Gadekar, IMMC, India

Nuala Alhern, Member of the European Parliament

#### Direct Damage to People Attributable to Chernobyl

Prof. E.B. Burlakova, Institute of Chemical Physics, Moscow, on: *Low Intensity Radiation Radiobiological Aspects.*

Irina N. Kogarko, Institute of Chemical Physics, Russian Academy of Sciences, Moscow on: *Monitoring and Features of Lymphoproliferative Diseases in People living in Zone of Radiation Pollution after the Accident at Chernobyl.*

Dr. Irina I. Pelevina, Semenov Institute of Chemical Physics, Russian Academy of Sciences, Moscow on: *Experimental results from Chernobyl area on blood lymphocytes in adults and children living in contaminated areas.*

Prof. Ludmilla Kryzhanovskaya, Chief of the Department, Kiev Institute of Social and Forensic Psychiatry on: *Mental Disorders among Chernobyl Survivors.*

Prof. Leonid Titov, Director Byelorussian Research Institute for Epidemiology, Immunology and Microbiology, Minsk on: *Immune System of Children and Chernobyl.*

Dr. Nika Gres, Research Institute of Radiation Medicine, Minsk, Belarus on: *Children Residing on Radioactively Contaminated Land.*

Dr. Jay Gould, President of the Radiation and Public Health Project, New York and Dr. Joseph Mangano on: *Effects of Chernobyl in North America.*

Comments by members of the IMMC:

Prof. Sushma Acquilla, Epidemiology and Public Health, Newcastle u. Tyne, U.K.

Prof. Inge Schmitz-Feuerhake, Medical Physics, University of Bremen, Germany

Dr. Andi Nidecker, Medical Radiologist, PSR/IPPNW Switzerland

## The Japanese Experience at Hiroshima and Nagasaki

Dr. Katsumi Furitsu, Internist, Committee of Atomic Bomb Victims at Hannon Chuo Hospital, Osaka Japan, on: *The Parallel Radiation Injuries of the Atomic Bomb Victims in Hiroshima and Nagasaki after 50 Years, and the Chernobyl Victims after 10 Years.*

Ms. Kazuko Yamashina, Nagasaki Survivor, Chernobyl Relief Group of Kansai, Japan

Ms. Kazue Sadamori, Pharmacist, Investigate Committee of Atomic Bomb Victims, Hannan Chuo Hospital, Osaka, Japan

Also intervened:

Dr. Sanghamitra Gadekar of IMCC: *Experiences near a nuclear reactor in India.*

## Responses of National And International Agencies:

Prof. Vladimir Iakimets, Institute for Systems Analysis of the Russian Academy of Sciences, Moscow and Board Member of the Nevada-Semipalatinsk Movement, on: *Decade after Chernobyl, Knowledge Gained Against Impact Revision.*

Dr. Katsumi Furitsu (see above) on the: *Japanese Experience with the International Commission on Radiological Protection (ICPR) and the International Atomic Energy Agency (IAEA).*

Prof. Michel Fernex: Reporting on the World Health Organizations Conference, “On the Health Consequences of the Chernobyl and other Radiological Accidents”, 20-23 Nov. 1995; the Third Annual NGO Conference in Minsk, 23-29 March 1996, “The World After Chernobyl”, and the International Atomic Energy Conference in Vienna, 8-12 April 1996, “One Decade After Chernobyl: Summing up the Consequences of the Accident”

Nuala Ahern, Member of the European Parliament.

The PPT also had the opportunity to examine the following written documentation:

- The Helsinki Declaration on Action for Environment and Health in Europe, 1994
- WHO, International Programme on the Health Effects of the Chernobyl Accident, Report by the Director General, 27/2/1995
- WHO, Health Consequences of the Chernobyl Accident-Results of the IPHECA pilot projects and related national programmes, Summary Report, 1995
- UNSCEAR, Effects of Radiation on the environment, 17/2/1995
- NEA-OECD, Chernobyl: Ten Years On Radiological and Health Impact. An appraisal by the NEA Committee of Radiation Protection and Public Health, November 1995
- EC-IAEA-WHO, Documentation for the International Conference “One Decade After Chernobyl: Summing up the Consequences of the Accident”, Vienna, 8-12 April, 1996 (Working Material: One Decade after Chernobyl: Environmental impact and prospects for the future; Background Papers to Sessions 5, 7, 8; Book of extended Synopses; Statements of the President of the Republic of Belarus and of the Prime Minister of Ukraine; Closing Session. Keynote closing remarks and keynote statements presenting the final conclusions and recommendations of the Conference, Friday 12 April 1996, 12.30 hrs.)
- International Congress ‘The World after Chernobyl’. Main Scientific Reports, Minsk, 1996

- Nesterchenko V.B., Scales and Consequences of the Disaster at the Chernobyl NPP for Belarus, Russia and the Ukraine, Minsk 1996
- Adi Roche, Children of Chernobyl. The human cost of the world's worst nuclear disaster, Fount Ed., 1996
- Schuchardt E., Kopelew L., Die Stimmen der Kinder von Tschernobyl. Geschichte einer stillen Revolution, Herder 1996
- Gould J., The Enemy Within. The high cost of living near nuclear reactors, Four Walls Eight Windows Ed, 1996

For their deliberations the judges took also into account the jurisdiction of the previous Verdicts of the PTT (see below) and their detailed references to the documents and conventions of international law.

Specific attention has been given to the *Conventions on the limitations of liability for nuclear accidents*.

## **1. THE LINK BETWEEN THIS SESSION AND THE JURISDICTION OF THE PPT**

The most immediate connection must be obviously traced to the verdict on Industrial Hazards and Human Rights (London, December 1994); which concluded a series of hearings, one of which was specifically dedicated to the Bhopal disaster (Bhopal, 1992).

The violation of the right of the victims of “accidents” to life, health, information, recompensation was explicitly seen as the expression of the broader and deeper aggression which is waged against its least protected members by a society which respects economic rules and interests much more than fundamental human rights.

The mechanisms, the means, the actors of this aggression have been analysed in depth in the Sessions dedicated to the *Policies of the International Monetary Fund and World Bank* (Berlin, 1988, Madrid, 1994).

On the other side, the failure of the existing international law provisions and instruments to protect adequately the rights of the victims has been the specific focus of the series of hearings and of the Verdict on *Impunity for Crimes Against Humanity* (Bogota, 1991) and of the special Session on the *Conquest of America and International Law* (Padua Venice, 1992).

This last verdict underlined very strongly the insufficiency of the present system of international relations to provide protection and promotion of fundamental rights of peoples, and the challenges it must face of democratising its institutions and broadening the base of its “cogens” authority to the domain of economic and more generally development-related relationships (see Verdict of Madrid, 1994 quoted above), where the new “low intensities” wars are waged and peoples rights denied or violated.

The deep implications of this perspective have been further explored and documented in the Session dedicated to the *Violation of the rights of children* (Naples, April 4, 1995) as they have been specifically affirmed in the UN Convention of 1990. Breaches of the fundamental rights of those who represent the future of humanity recall very closely the scenario of the Chernobyl disaster, where the reproductive rights and possibilities are directly threatened and the severe

children morbidity has broken the barrier of silence and denial which had appeared to be the rule in the official international public scene.

## 2. THE FACTS

### a) *Causes of the Chernobyl Disaster*

The principal immediate cause of this disaster was the design flaw in the RBMK-type 950 MW nuclear reactor which caused a dramatic power surge when the operators attempted to shut down the reactor, and a subsequent nuclear explosion. This design flaw was known prior to the disaster and had been officially noted on at least two occasions in the Soviet Union prior to April 1986. At the time of the disaster about 800,000 workers were drafted to assist in emergency response. They lacked basic training in radiation safety, had no access to self-protective measures, and no informed consent procedure was followed. Workers were exposed to high doses of radiation, and nuclear fallout was widespread both locally and throughout Europe and beyond.

There was a delay in informing the people at risk, in the former Soviet Union, Europe and the world, of the seriousness of the accident. Little protective response for the general population, especially children and pregnant women, was undertaken, and citizens were allowed to participate, for example, in the May Day celebration out of doors during a time of dangerous radioactive fallout.

Officially, responsibility for the disaster was attributed to the plant operators, and little public blame fell on the designers and regulators who failed to deal with the known flaws in the reactor. The true nature of the nuclear explosion was not admitted publically, and the implications for all other nuclear reactors in the world was played down. Although many of the popular explanations attributed the widespread devastation to the lack of a containment, for the nuclear reactor, this may have acted as a benefit, a relief valve which prevented a worse explosion.

### b) *Consequences of the Disaster*

The disaster killed 31 people immediately, caused about 130,000 acute radiation exposures, and the evacuation and relocation of hundreds of thousands of people. Some of the most severe long-term effects were related to the nuclear contamination of the soil, crops, sediment and water. The nuclear radiation was stored in the tissues and bones of the people and was present in the food chain, posing a threat to life and health which continues to this present time, ten years after the disaster.

Due to the investigations of the World Health Organization, we now know that at least 700 cases of thyroid cancers in young children and adolescents resulted from the radioactive iodine inhalation, with ten known deaths. There have been further problems, especially amongst children, with other thyroid diseases including Hashimoto thyroiditis, blood abnormalities, anemia, gastrointestinal disorders, juvenile diabetes, and immune dysfunction.

Social disruption, relocation, loss of jobs and homes, illness and fear have contributed to problems of adaptation to life since the disaster.

A new syndrome, called by a Ukrainian physician "Postchernobyl Cerebrathenic Syndrome", which affected large numbers of survivors of the disaster, caused symptoms such as poor attention, fatigue, short term memory loss, irritability, dizziness and fatigue, high sensitivity to loud noise, bright lights and high temperature. A physician familiar with Hiroshima and Nagasaki survivors noted the similarity of this syndrome with an atomic bomb survivor illness called Genbaku Bura Bura.

Although the existence of many non-lethal effects of radiation exposure is admitted by the International Commission on Radiological Protection (ICRP), these effects are not deemed by the regulatory communities to be “of concern” to society. The ICRP, present since 1952, has deduced that radiation induced fatal cancers and what it designates to be serious genetic diseases in live-born offspring to be the only recognized medical effects of radiation exposure of concern.

Since Chernobyl, the recognition of non-fatal thyroid cancer, especially in children, and severe mental retardation resulting from exposure of the fetus in the 8-15 weeks of intrauterine life, has been officially admitted. However, much evidence of the harm caused by a variety of mutations, cellular disruptions and intrauterine damages, including all levels of mental retardation, physical disabilities including deformed or absent arms and legs, blindness and deafness, were demonstrated by witnesses to have occurred to plants, animals and humans. It was obvious that these severe sufferings for the affected individuals, their families, communities and life supporting environment and food web, were of major concern to the victims. The administrative elimination of concern for these real outcomes of radiation exposure was in itself one of the ways in which the victims were revictimized after the disaster.

### *c) Compensation*

The questions of compensation for the victims of the disaster are closely connected with the identification of the causes of the disaster, the responsible agents and the legitimate medical claims. The causes are imbedded in military and industrial policies and designs, engineering assumptions and even development models. Responsibility rested with local operators, national regulators and international recommending agencies like the ICRP; the International Atomic Energy Agency (IAEA) and several United Nations (UN) Agencies. It was the international recommending body, ICRP which strictly limited the recognition of medical ills attributable to the radiation exposure, and these recommendations were strictly enforced, against the advice of local physicians and health professionals actually dealing with the victims.

Because of disputes over which illnesses should be recognized for compensation between those working with the victims and regulatory agencies which define what illnesses should be “of concern”, the international community has been slow to come to the assistance of the victims. In Belarus, 25% of the government budget goes to restorations of Chernobyl devastation.

The most recent approach to rehabilitation both in Russia and Belarus was the proposal to raise the permissible levels of nuclear pollution in soil, especially in unoccupied areas, relocation of the population on contaminated land, and relaxing the standards for nuclear contamination of food and water. So called unoccupied land is agricultural land and use of contaminated land for food production can be expected to produce new radiation victims, and to worsen both the health and reproductive capacity of current radiation victims. These new policies appear to have been derived from a new policy of the ICRP, proposed in its document No. 60, 1990, which states that after a nuclear accident ALARA (as low as reasonably achievable) policy no longer applies. The new policy requires that risk-benefit studies should be done to justify evacuation, restricted use of land or consumption of food, or other radiation protection activities. The recommendations of the IAEA appear to be an enforcement of this ICRP policy recommendation.

This new policy impacts on the compensation question and on the mitigation of the results of a serious disaster by limiting cleanup policy and forcing the population to accept unhealthy living conditions and contaminated food and water in the name of economic efficiency. The burden of proof is shifted to the victim who now needs to justify clean-up, rather than on the polluter. We must ensure that it is the perpetrators who must assume the burden of restoring as far as possible the health of the victims and the integrity of the environment which they have severely damaged.

### 3. COVERUP BY THE INTERNATIONAL COMMUNITY

The beginnings of the nuclear age were shrouded in secrecy because of the fear of spread of knowledge of nuclear technology, and retaliation for use of the atomic bomb against Japan in World War II. Physicists, because of their skill in measuring radiation assume also the job of predicting the results of exposure. Prior to WW II medical radiologists had understood some of the devastating effects of exposure to Xray, and had formed an international radiologist association to set occupational and safety criteria for its use. Physicists from the Manhattan Project, the WW II atomic bomb project, from the US, UK and Canada met together between 1945 and 1952 to determine recommendations (radiation protection in view of this new technology, of atmospheric weapon testing which began in the Pacific Atoll of Bikini in 1946, and proposed expansion of uranium mining and other weapon related industries. In 1952 these physicists joined the radiologists and formed the ICRP. Because of the nuclear secrecy this association was established as, and has continued to be, self appointed and self-perpetrating in membership. It has always claimed to assess both the hazards and the benefits of radiation use, making what it believed to be rational trade offs of risks for benefits.

Membership in ICRP has consisted of users of radiation, about 50% physicists and 15% radiologists, with medical administrators making up about 25% and 10% from a scattering of other disciplines. The results of ICRP deliberations and recommendations have been standard settings for occupational and public health exposures to radiations which they found acceptable to accommodate the new technology (and atmospheric weapon testing). Their recommendations were widely accepted by national regulatory bodies and generally implemented internationally. The findings of the US investigations of the atomic bomb victims in Hiroshima and Nagasaki, and the UK studies of patients who received high therapeutic doses of radiation for a spinal disease, have been the foundational studies which justified ICRP recommendations. All other radiation research must “harmonize” with these studies in order to be admitted into the regulatory base. Both of these examples involve high doses of radiation delivered in a short period of time. Limited biological endpoints were studied, primarily fatal cancers, and extrapolation of these findings exposures to low extended over long periods of time (such as would be experienced by workers and the public) was attempted. Expertise in public or occupational health has not been represented on the Main committee of ICRP, which makes all decisions.

After the 1954 explosion of the hydrogen bomb and the decision of the US to convert its arsenal to nuclear devices the Peaceful Atom program was introduced into the UN, and the International Atomic Energy Agency (IAEA) was established. The IAEA was mandated to promote “peaceful” uses of nuclear technology and to prevent nuclear military technology from expanding into countries other than the five nations then known to have developed it. In this promotional role, IAEA has depended on the recommendations of ICRP for its radiation protection standards.

The UN also established a committee called the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) which periodically reports to the General Assembly on new research or policies coming from the ICRP or IAEA.

This system of agencies is very tightly knitted, with many overlapping memberships. It has been effectively isolated from normal channels of occupational and public health which deal with chemical pollutants and other industrial hazards. Specialties in scientific training have also worked to isolate the nuclear agencies from general medical and scientific scrutiny. For example, while the nuclear industry has continued to base its recommendations on fatal cancers, the chemical industries have been forced to look at respiratory illnesses, neurotoxic effects in children and in utero disruption of growth and development as biological endpoints.

Attending of meetings of the IAEA and staff positions require that the individuals have a recommendation from the nuclear regulatory agency of its UN member country. The ICRP appoints its own membership and appointment has no time limit. Members of UNSCEAR serve at the pleasure of their national governments, most of which have nuclear programs. This small group of scientists has full control of policy making and of recognition given to “outside” research, which may challenge its findings and decisions. All who disagree with the recommendations and policies are labelled either ignorant, emotional or non-scientific. There is no international forum in which disputes can be resolved either for scientific questions or for policy decisions.

## **5. RESPONSIBILITY OF THE SCIENTIFIC COMMUNITY**

Members of the scientific community within the nuclear community find it difficult to freely discuss differences of interpretation of scientific data, or differences in policy decisions, because their continued membership in the organizations and often their livelihood are at stake. For example, if an organization such as the WHO could place a member on the ICRP, then that member could speak on public health policy in keeping with WHO policy without threat to their membership. Currently members of ICRP serve at the choice of the ICRP Executive Committee.

Scientists outside of the nuclear community have found it difficult to obtain grant money for research. The medical community dealing with nuclear exposure victims have little say in the establishment of research needs and in directing money to researchers independent of the nuclear industry. Because of the control exerted over research goals and financial allocation, the victims often are left without the information needed to prove causal relationships between exposure and illness. Research which is completed must pass through a review process prior to publication. Often these papers are sent for review by the nuclear experts who refuse publication to those findings which appear to contradict the prevailing wisdom.

The complexity of the nuclear questions and the need for interdisciplinary approaches to most problems it poses makes research in this field expensive. Institutional support for interdisciplinary teams is essential. Communication of results should be widespread in order to conserve resources. The Tribunal commends those scientists and physicians who have tried to speak out for the public good both within and outside of the nuclear circles. Yet it notes the lack of democratic sharing and the severe penalties against speaking out in contradiction of the prevailing “truth” which is essentially detrimental to the public good. In a special way, because of the secrecy of the nuclear beginnings and the extraordinary control of policy related information in this field, the structural hindrance of professional interaction is extraordinarily poor. It was reported that at the IAEA meeting in Vienna this April, scientists who had spoken at a prior meeting in Minsk a week ago, failed to speak up with respect to findings and data in their possession. This intimidation of scientists undermines the just response to the disaster and the addressing of the human rights of the victims.

## **6. NUCLEAR WEAPONS AND NUCLEAR POWER PLANTS**

Half a century after the atomic bombings of Hiroshima and Nagasaki and a decade after the nuclear power plant disaster at Chernobyl, comprehensive scientific and medical evidence has sufficiently proven that survivors, especially women and children of the atomic bombings and nuclear power plants accidents suffer from diverse yet almost identical psycho-somatic diseases and congenital deformities hitherto unknown to humanity.

The world needs to hear the voices of victims of uranium mining, nuclear power plant operation, clean-up operations, waste disposal, nuclear weapons production complex, and nuclear weapons testing sites, numbering at least 32 million, who cry out for relief from the ills of this doomsday technology.

The magnitude of global contamination of soil, water, and air already caused by the Chernobyl disaster and likely to be caused again by nuclear war and/or nuclear power plant accidents pose horrendous menace not only to the existing life and health of people on earth but render the ecosystem totally irreparable for an indefinite future and thus depriving the most basic human rights of the future generations.

The world spread of plutonium and its easy convertibility into nuclear weapons has made increasing inroads into the control of information and the suppression of democracy.

The military atom and the civilian atom are two sides of the same coin and the existence of the one reinforces the other. It is inevitable, therefore, that the spread of commercial nuclear technology will result in the further spread of nuclear weapons abrogating even the limited fruits of NPT and CTBT.

France and China which have recently conducted nuclear weapons testings against the international public opinion must realize that they have not only made a grave political mistake in the Post Cold War period in which theory of deterrence has categorically lost its credibility but also encouraged some countries to obtain nuclear weapons capability.

## **7. THE LAW OF RESPONSIBILITY AND OF COMPENSATION**

Two questions have to be separated from one another: Who is liable and for what? How can damage be compensated?

### *a) The law of liability*

According to a tradition upon which civil law countries and common law systems do coincide - in spite of differences which are not relevant here - one is liable for the damage he or she has inflicted to another person. The same principles apply to state responsibility according to international law, which is drawn from general principles of law.

Such a system of liability is based on the principle of causation: along with the progress of natural sciences which identified links between two observable phenomena, the ones being the cause or the antecedent of others (the effects), judges have held liable the agent whose activity has been harmful to another person. Such an application of the juridical principle of causation combines three elements: 1) a damage has to be identified; 2) a wrong has been committed; 3) there exists a causal link between the wrongful act and the damage.

However simple this scheme seems to be, its application has raised considerable difficulties and many theories have been proposed to reconcile the difficulty, so to know what really occurred with the requirements of judiciary practice. The two main theories aiming at selecting within the almost infinite field of antecedents those which are retained as relevant for the lawyer's purpose are the theory of proximate causation (usual at common law) and in civil law countries the theory of adequate causation (*Adäquanztheorie*).

Before contemplating the supplementary difficulties which arise in the field of nuclear damages, one has to add two elements: the proximate causation that implies an element of foreseeability. To be liable the agent had to be aware that his or her conduct put another person at risk. But it is not

necessary that a high degree of probability be demonstrated. If I drive on an isolated road where the circulation is very scarce, it is highly improbable that at the time I pull over another vehicle a third one will arrive from the opposite direction. However, I am at fault if I assume such a risk. The second element to stress is that liability can be engaged through omissions as well as through action. If someone undertakes a dangerous activity he is under the duty of taking any safety measures to prevent any foreseeable harm. The application of such principles to nuclear nuisances will meet two series of difficulties.

a) Low level radiation falls out of the scope of the principle of causation which is built upon the correlation of two events. A damage which is the consequence of low-level exposure cannot be detected before a long lapse of time and it can be related to any among the many influences and deficiencies to which a person has been subjected to. The experience in this sense has been made to the level of professional diseases. Since they could not be compensated according to the traditional principle of causation, statutes have been passed which provided for a strict liability system: in each branch of industry which can generate a professional disease the workmen are afforded a system of lump compensation.

b) The traditional rules of liability could have been applied to the Chernobyl tragedy as they should have been to the Bhopal disaster and the Tribunal has to investigate why they were ruled out. It is highly symptomatic that the responsibility for nuclear accidents seems to be put beyond the boundaries of a law-abiding society. Neither were the victims of the Three Mile Island accident compensated although the American case law is among the most generous for other kinds of victims. In the numerous proceedings for product liability the unduly rigorous standard of evidence which is deemed acceptable for the experts of the International Atomic Energy Agency is not paramount: The Thalidomide case is a clear example at hand. Even if the victim's ailment can have another cause, it is sufficient that a statistical correlation demonstrates the link between the local apparition of damage and its link with the conduct which has caused it to conclude to the liability.

In the case of Chernobyl, the apparition of ailments in a group of persons exposed to the radiation which statistically exceeds the dispersion of the same illness in a population which was not within the field of irradiation should suffice to engage the liability of the agent. One should not require supplementary evidence as to the previous health conditions of the contaminated population.

#### *b) Damage which cannot be compensated*

The magnitude of the damages explains - but does not justify - why they cannot be duly compensated. It is no coincidence that the two worst industrial catastrophes, Bhopal and Chernobyl, occurred in places where human life does not have not the price as American or Western-European standards. Should such a disaster have occurred in Germany or in the United States, the whole insurance system would have collapsed. The methods followed after Chernobyl to assess the damages and which are deemed acceptable by the experts of the IAEA were not conceived in order to provide for a just or fair compensation to the victims. Human suffering was negated or squeezed for the reparation to remain within payment capabilities and expectations. Not only were the victims not compensated but the reality of the harm they were subjected to and their sufferings have been denied because compensation did not enter into the scheme of the so-called rationality of nuclear energy. Every fact which could put to blame the atomic energy complex had to be disregarded. That complex is above the law, it was built within and around the nuclear plants as a no-law's land.

## **8. ECONOMIC ASPECTS OF NUCLEAR ENERGY PRODUCTION**

### *a) Unaccountable risks*

The illusion that “atomic energy for peace” may resolve the energy problem of mankind is over, at least since the nuclear accident of Three Mile Island and the disaster of Chernobyl. Nevertheless, the production of nuclear energy continues, and there are powerful economic interests in favour of nuclear energy exerting pressure on political decision makers as well as on the public. The promoters of nuclear energy state that the danger of a major accident in one of the several hundred nuclear power stations in nearly all parts of the globe, is virtually inexistent. However, it is not only this danger which creates worries for people in the world. It is the whole production chain of nuclear energy, from the extraction of uranium to the disposal of nuclear waste. Since the beginning of the nuclear age an unaccounted number of miners have been contaminated, as well as workers, in processing the ore in uranium plants and in the power plants or the nuclear waste disposals. None of these links of the nuclear chain are safe in terms of minor or major accidents or with regards to the ubiquitous low dose radiation. The risks are uncalculable, especially in the case of waste disposals, especially where future generations are concerned. They cannot announce their priorities on the present market. This is a clear case of market failures. Calculations made up by representatives of the nuclear industry or the IAEA demonstrating economic advantages of nuclear energy compared to other sources of energy, therefore, cannot be taken seriously. They are irresponsible, since they play down the extremely high “external diseconomies” of nuclear energy.

The quotation of M. Hans Blix, should it be correct (*Le Monde* 28-08-1986), displays even more than irresponsibility: “... *due to the importance of this energy, the world could support one accident of the Chernobyl scale every year...*” The “value” of a human being, its life, integrity and health obviously economically counts for nothing. But this inhuman attitude seems to be a necessary prerequisite for continuing the strategy of producing atomic energy even after Chernobyl. Victims are the cost of progress.

### *b) Opportunity costs of nuclear energy*

Therefore it is quite logical that the IAEA, ten years after the disaster of Chernobyl, criminally plays down the number of lethal victims to a regrettable number of 28 (less than in a major air accident), although serious scientists from the concerned Eastern European countries as well as from western research institutions are counting more than 25000 people killed immediately in the course of the disaster or due to the after effects of the melt down during the past decade, not to mention about hundred thousands of people being injured and contaminated from the local population to the “liquidators” concentrated in the area of the disaster from the whole territory of the former Soviet Union. The attempts of reconstructing the acceptability and trust for nuclear energy production seems to be of much more importance than taking into consideration the long-term effects of radiation on future generations due to possible genetic mutations. The same neglect happens in the case of the opportunity costs (lacking means for schooling, infra welfare etc.) since more than 25% of the state budget of a poor country like Belarus has to be devoted to the containment of the effects of the Chernobyl disaster. Summing up all costs of the disaster, the production of atomic energy is not at all an economical solution to the energy problem of modern societies.

### *c) Nuclear energy is no alternative to fossil energies in order to avoid the greenhouse effect*

It is said that the use of fossil energies creates so many negative effects and that nuclear energy for many decades will remain a rational alternative. Firstly, in the next century fossil sources probably will be exhausted and, secondly and even more importantly, they have to be substituted before running out because of the greenhouse effect. Moreover, the international community committed itself to a remarkable reduction of CO<sub>2</sub>- emissions in the next two decades. The reduction of CO<sub>2</sub> emissions is absolutely necessary, but no excuse for the continued use of nuclear

energy. It is no alternative to fossil energy, as it again has been suggested in the final declaration of the IAEA conference on Chernobyl in Vienna in April 1996.

Apart from the ecological and human costs of nuclear energy the economic costs are much too high, in the case that they are internalised into the price formation of electricity produced by nuclear power stations. This is a reason why many highly developed countries in the meanwhile stopped the construction of new nuclear plants and why less developed countries in planning nuclear power plants do not fully take into consideration full costs.

Moreover, there are still other well-known negative impacts of atomic energy on mankind. Nuclear energy cannot be “democratized”. It is too dangerous in terms of risk management, too prone to terrorist attacks and it is too simple to transform a nuclear power plant into a nuclear weapon plant. The more countries possess nuclear power plants, the greater the jeopardy for peace in the world.

#### *d) The necessity of an alternative energy model*

Since nuclear energy is no alternative to fossil energies and sources of fossil energies can only be used to a diminishing degree, it is of utmost importance for mankind to develop an alternative energy model. It must be based

*firstly*, on a considerable increase of energy efficiency and on technical and social methods of avoiding and saving energy, and

*secondly*, on a strategy of transition from fossil and nuclear energy to renewable, not exhaustible solar energy.

On both paths technical and social progress has already taken place. There exist already technologies to increase energy efficiency in all parts of the world adapted to different climatic, geographical and social conditions. The willingness to change lifestyles is growing even in the rich countries, a precondition for improving the energy situation in the poor parts of the world. Alternative energies are better for a decentralized and diversified consumption and production model than fossil and nuclear energies. They exert a powerful territorial agglomeration effects and economic concentration effects.

#### *e) Political tasks of supporting an alternative energy model*

It is one of the main tasks of political leadership to support and promote alternatives of the prevailing energy model, even against the lagging and cushioning interests of big corporations and the economic-scientific complex. Energy corporations have made capital investment in the past which interfere with alternative decisions in the present, since the invested capital has to be written off in the future. Therefore, it is an important task of politics to set the frame of reference in such a way that this vicious circle can be broken. It is a wrong excuse to rely on market mechanisms in the case that the market is prevented from working due to the highly concentrated economic (and political) power of large energy corporations. Therefore it is necessary,

*firstly*, to channel research funds from research on nuclear and fossil energy sources to alternative (solar) energy, to research on technical and social measures of increasing energy efficiency, and last not least to research on the many possibilities for an alternative and sustainable development model that could avoid and save energy;

*secondly*, to subsidize over a limited period of time alternative energy sources. This is justified since they produce social benefits, whereas nuclear energy is highly subsidized, although the social costs of the energy source are incalculably high;

*thirdly*, the IAEA shall be reshaped into an *International Alternative Energy Association*

(1) promoting the proliferation of renewable solar energy and of technologies apt to increase energy efficiency.

(2), helping to shut down all nuclear power plants in the world in a period of time as short as possible;

(3) developing a safe solution for the final disposal of already existing nuclear waste.

*fourthly*, the international community has to develop compensation mechanisms for all people concerned, especially for poor countries in order to make them capable of following these rules.

*f) The limits of “joint implementation”*

Therefore, the strategies of “*joint implementation*”, recommended also in the climate summit in Berlin 1995, are only a transitory solution of the energy problem. Joint implementation on the one hand can positively help reduce CO<sub>2</sub>-emissions on a world wide level but on the other hand can negatively hinder technological innovations and technology transfer (because it is not the most developed technology introduced in power plants in Third World countries) and can prevent from switching from the fossil and nuclear energy model to that of alternative, renewable energies.

## **9. TOWARDS ANOTHER VISION OF HUMAN RIGHTS**

Listening to the voice of the people of Chernobyl, it has been clear that the concepts and categories enshrined in the dominant human rights discourse have become increasingly insufficient to grasp the violence of these times. While we need to extend the horizons and deepen the existing human rights discourse, we also need a new generation of human rights.

We need to refuse the paradigm that has understood human rights as the rights of the powerful, the rights of the privileged. We need to listen to the voices of those who do not share that power:

We need to listen to the voices of the victims of nuclear testing in the Pacific,  
of uranium miners in Namibia,  
the workers and communities of nuclear plants in India, in Sellafield, in Cheylabinsk,  
the indigenous populations in the US, in Canada,  
the aborigines in Australia,  
the women who give birth to the “jelly babies” in Micronesia,  
to the children of Chernobyl.

What does the fundamental right to life mean to the genetically damaged children born, and to the millions yet unborn?

The nuclear industry undermines the discourse of human justice. There are today at least 32 million nuclear victims produced by the world’s nuclear industries and weapons testing. They are the first victims of the third world war. A nuclear industry, in the name of national security, peace, safe energy and even sustainable development victimises an increasing number of people. Tech nuclear estates in all nation states abrogate several fundamental freedoms (from the right to information, to legislations which ensure secrecy for the nuclear establishment in the name of national security, to the increasing surveillance of peace and anti-nuclear movements) enshrined in the UN charter and in almost all national constitutions. Nation states it would seem have the right to destruction; and peoples and communities have no right to prevent or stop that destruction.

How does the International Covenant on Genocide translate into a world of nuclear technology? For radiation obliterates whole peoples, whole civilizations. Chernobyl is about the destruction of a people. Is this not criminal? Are these not crimes against humanity? For nuclear power plants, missile ranges and military bases have displaced entire populations, driving them to a desperate and denigrated existence. They are indeed refugees in their own country.

The dominant human rights discourse is locked into the individual – nation/state paradigm, blurring all stratifications and communities in society. The liberal discourse on rights is focused on the rights of individuals against states. Individual rights and freedoms provided the essential tenets on which the edifice of human rights was built and developed. And for which the nation state was the guarantor. The United Nations Declaration on Human Rights and all the other covenants on human rights to which the nation states are signatories clearly elucidates the rights that must be assured to the citizens of a state. The nation states are then given the responsibility for upholding these rights. However, the nation states may then legitimize the most brutal repression on its own people (concealing nuclear crimes, for instance) which are then seen as the internal concern, the law and order, the national security of these sovereign nation states. The nation state from guarantor of human rights is often the greatest violator.

And as in the case of Chernobyl, where do the people take those responsible for redress of the violence done to them? Where do they seek reparation, even compensation?

There exists no mechanism at the international level by which a sovereign people may take a sovereign nation state to task. In the International Court of Justice, nation states may seek redress and reparation from another nation state. But the victims of nation state policies whether of war, or development or nuclear technology have no *locus standi* in the World Court. There is an urgent need to develop a new international mechanism/institution based on principles of obligations towards peoples where peoples and communities who have been violated by the policies of nation states may seek redress and compensation from them.

We need urgently a new jurisprudence on human rights that would encapsulate in its vision the right of all peoples to be human; that would explore new terrain on liabilities across boundaries, on the extent of responsibility when nuclear radiation is involved, on compensation when long term and future violence is feared. We need to extend the horizons of human rights; to explore new paths beyond the parameters of existing human knowledge. We need to find new perspectives on the universality of human rights: while we seek possibilities to extend its parameters, we need to explore too a new discourse in dialogue with their cultural perspectives of reality finding other notions of development, of democracy, even dissent; other notions of equality, dignity and justice; other notions of rights that would recognize the rights of communities and the collective rights of peoples. In the existing human rights paradigms, the nation state is unable to address the rights of communities in the context of their needs. Perhaps in the understanding of the needs of individuals and communities and not only being confined to the rights of individuals can a way be found to transform the human rights discourse. May we then seek other visions of governance because humankind proffers many horizons of discourse.

And because our eyes do not, as yet, behold these horizons it does not mean that these horizons do not exist.

## 9. Judgment

### **The Tribunal condemns:**

1)\_The International Atomic Energy Agency, the national commissions for atomic energy and the governments which support and finance them on behalf of the interests of the nuclear industry:

- for trying to promote nuclear energy; through falsehood, intimidation and unethical use of money power
- for their attempts to suppress all forms of alternative renewable and sustainable sources of energy.
- for their violation of the most fundamental rights of the victims of nuclear accidents, including their revictimization and the arrogant denial of their suffering.
- for the perseverance of an arrogant attitude of denial of peoples suffering right up to the closing session of its last meeting in Vienna on 12 April 1996.

2) The International Commission for Radiation Protection whose policy is clearly inspired by the promotion of the nuclear industry instead of being aimed at the protection of the potential victims.

### **The Tribunal blames:**

Those in the scientific community who do not stand up to safeguard the honour of their profession, in the face of pressure from the nuclocrats and maintain a deafening silence in spite of strong scientific evidence regarding the homicidal nature of the nuclear enterprise.

### **Recommendations and proposals:**

The mission of the Tribunal is to give a voice to the victims and in defence of their human rights.

The statement by the IAEA (International Atomic Energy Agency) Conference in Vienna, 8-12 April 1996 that the catastrophe of Chernobyl has caused 32 deaths, is an offense to the thousands of victims and scandalizes the informed public as well as the scientific community of the world. It is another of the numerous attempts of IAEA to deny and conceal the real radiation injuries and damages around Chernobyl in order to continue to develop and spread nuclear installations all over the world.

With respect to the human rights of the victims, the Tribunal recommends:

- that the current proposals to relax radiation protection standards for contaminated land and food, to relocate people on contaminated land and to return contaminated soils to agricultural uses be immediately stopped.
- that the plight of the victims be made known worldwide and the appeals for medical, economic and social assistance for the affected countries and individuals be assessed and reported by independent medical personnel. The technical staff of the IAEA, which is mandated with the promotion of nuclear energy cannot be considered competent to this purpose.
- the immediate reduction of permissible radiation exposure levels both for workers and for the general public, bringing the radiation standards, at least with respect to fatal cancers causation, more in line with standard practice exercised in toxicology and occupational health for the chemical pollutants.

The Tribunal has arrived to the unanimous conclusion that the promotion and the proliferation of nuclear technology cannot be sustained and that one of the main reasons for inadequate safeguarding of fission material is IAEA's and all national Atomic Energy Commissions incompatibility of promotion and control. Control is executed in a half-hearted manner, as promotion is the priority. Nuclear material and dangerous installations, however, require much more stringent control measures than those currently practised.

**Therefore,**

- Nuclear industry has to be banned for civilian as well as for military use.
- The current mandate for the IAEA to promote this technology be withdrawn by the UN, and a new mandate be drawn up to assure:
  - responsible operation and systematic shut down of currently operating reactors;
  - the monitoring of radioactive wastes;
  - the safe dismantling of shut down reactors;
  - the rigorous control of fissile material;
  - the compensation of the victims of nuclear industry;
  - the restoration of radioactive environmental damages.

The Tribunal envisions decentralized and alternative energy sources which respect human needs and limitations, which do not cause fear, and which are better scaled to endpoint usages in a democratic decentralized society.

For this reason, it recommends:

- reshaping of the IAEA into an International Alternative Energy Association to deal with putting forward sustainable energies;
- implementation of the Rio Agenda 21 resolution to set an International Court of the Environment where issues involving transboundary pollution can be addressed;
- experimentation with models of democratic functioning above the level of nation states and the current limits which the nation place on participation in decision making, including that of NGO's;
- deliberate strategies to include a feminine analysis and perspective into health and safety, and of effectively including concern for the rights of future generations to a supporting environment and intact gene pool;
- the proposed design of the International Court of the Environment which recognizes the rights of NGO's and individuals to bring suites against polluters.