

INTERNATIONAL APPEAL

HIROSHIMA, CHERNOBYL, FUKUSHIMA: CRIMES AGAINST HUMANITY

Since 1945, there have been more than 2,400 explosions, with a power in some cases (1) amounting to several thousand times that of the Hiroshima bomb: this comes in addition to numerous "failures" and dozens of catastrophic accidents, starting, as far as we know, back in the fall of 1957 at Windscale (UK) and Mayak (former USSR), respectively ranked level 5 and 6 on the INES scale. But who can tell precisely what the impact of all this has been? Since no epidemiological survey worthy of the name had been initiated at an international level to analyze this problem, thus a European Committee on the Risks of Irradiation (CERI) (2) was requested by green party Members of the European Parliament to study this impact, and their findings confirmed the serious effects that atomic activity has had during the past 65 years on populations worldwide, which comes as no surprise when we know that traces of this activity have been detected in the ices of the South Pole (3). The stakes are so huge that the pathological effects of the contaminations by the small doses throughout time are fiercely denied jointly by all countries or international organizations.

Chernobyl: irradiation and multiple contamination with "rebounds"

The April 26 1986 is a historical date for all of humanity, just as the August 6 1945 (4). Right from the start of this disaster, depending on the distance of the accident, the emission of radiations was violent, multiple, complex and with long-lasting effects: this is one of the peculiarities of the Chernobyl accident.

When it exploded, the reactor N° 4 of the Lenin plant at Chernobyl not only rejected gases and various aerosols produced by the nuclear disintegration of the fuel, in a way similar to a bomb, but it also rejected "solid hot particles" (5) of fuel: these are fragments of all sizes which, combined with other radionuclides, dropped on the site or near the plant. Subsequently, the hot liquid particles were also formed in the soil after the rains. When these particles enter the body through ingested water and food or inhaled air, they produce, even long after their emission, high doses of localized internal irradiation. This observation is important for understanding the aftermath and the consequences of the accident.

Since the day of the disaster, irradiation has gradually given way to various types of long-term contamination and the radiological situation is developing in a manner that no one could predict. Two examples:

- Following the decay process of plutonium 241, the natural formation of americium 241, a potent gamma ray emitter, becomes an important part of the contamination of many places. Because of this gradual disintegration, areas that had reduced their level of gamma radiation have once again become dangerous.
- Furthermore, there was a wide redistribution of radionuclides within ecosystems due to their concentration by living organisms (bio-accumulation) and their migration, after some years, in parts of the soil where the roots enter: these radionuclides then became increasingly accessible to plants, which draw them for a second time to the soil surface. This is one of the causes of the expansion and worsening of morbidity and mortality in contaminated areas.

Some of the diseases caused by Chernobyl (in addition to cancer and leukemia)

- The radioactive contamination from Chernobyl has affected the functioning of every organ of the endocrine system. The collapse of the hormonal function of the thymus plays a major part in the development of pathology of the immune system.
- The diseases of circulatory organs are one of the leading causes of disability and death among the "liquidators".

- The accelerated aging caused by the Chernobyl disaster has affected hundreds of thousands of people and will affect millions in the future.

- Lead poisoning has become one of the significant pathologies linked to Chernobyl. This is due to the fact that between 2400 and 6720 tons of lead were dumped on the site during extinction operations. An important part of that lead was released into the atmosphere following its melting, boiling and sublimation in the reactor fire.

In addition, genetic effects caused by the Chernobyl disaster will affect hundreds of millions of people for centuries. Among these future victims:

- those who experienced the first radiological shock (the powerful and brutal external irradiation), because the amount of radionuclides released into the ecosphere was very important;

- those who now live, and those who will live over the next 300 years, in the areas contaminated with strontium 90 and cesium 137, or those who will live in areas contaminated with plutonium and americium over the next thousands of years;

- for many generations, children born of parents who were irradiated, wherever they live thereafter.

Secrecy, official falsification of data and the malpractices

There is no publicly available instrumented data on the extent to which all European countries have been contaminated by the entire array of radionuclides from Chernobyl, and it is now clear that there never will be. In using this absence of data as a justification in the "Chernobyl Forum" of 2005, the IAEA and the WHO restricted the scope of its study to include only data pertaining to the territories of Belarus, Ukraine and European Russia, ignoring the contamination of other European countries.

However, even if the usual density of the contamination is not high in a given area, it is a fact that a huge contamination occurred during the first days and weeks following the disaster: we know, by reconstructing the chain of events, that in some areas, the activity of radioactive elements fallout exceeded 10,000 times the natural background levels; this, combined with the low-level but long-lasting contamination (several decades) is bound to have a major impact on the health of residents and the environment.

On the other hand, the removal of institutions which were entrusted with monitoring the pathological consequences of Chernobyl, the diversion of research teams from the study of problems caused by the disaster, the harassment and the imprisonment of some specialized doctors, are as many attempts for concerted and persistent suppression of the truth (6).

Consequently, the requirement put forward by experts of the IAEA and the WHO, for clearly demonstrating that a particular health problem is linked to radiation from Chernobyl, that a "definite correlation" should be established between the total radioactive exposure of a concrete person (never reconstituted with precision, and for good reason) and damage to this person's health, is an intellectual trickery of a particularly dishonest kind.

In addition to these malpractices, in the former USSR, in Ukraine, in Belarus, and in key relevant international organizations (IAEA, WHO ...) there is abundant evidence of a policy to minimize the consequences of the Chernobyl disaster. Here are some examples.

- In none of the health booklets of the tens of thousands of service members who participated in the work of "liquidation" was any mention ever recorded about exceeding the limit of 25 roentgens then in effect. But the clinical examination of 1100 military liquidators found in 37% of them hematological symptoms of radiation sickness, a clear indication that these people received more than 25 roentgens.

- The Official medical science has just begun to recognize the frequency of the cataract of Chernobyl, 8 or 9 years after its discovery.

- Same situation concerning thyroid cancer, leukemia and ailments of the central nervous system.

The consequences of Chernobyl on public health

Briefly summarizing the data published in the CERR report, radioactive contamination from

Chernobyl has affected nearly 400 million people, (205 million in Europe and about 200 million outside Europe). The curve analysis of general morbidity among children living in contaminated areas of the former USSR is particularly distressing: only 20% of them are healthy. In some parts of Polesye there are no more healthy children. In Germany, the teeth of children born after the disaster contained 10 times more strontium 90 (similarly, plutonium shows up in baby teeth of English children living near Windscale - since then renamed Sellafield - 53 years after that other atomic disaster). The number of Chernobyl victims will continue to grow over several generations. During the first 15 years following the disaster, it can be estimated as follows:

Belarus, Ukraine, European Russia	237,000
Rest of Europe	425,000
Asia, Africa, North America	323,000
World	985,000 (7)

Chernobyl: a nuclear disaster in the Anthropocene era (8)

The atomic disasters have this characteristic that they always define a multidimensional fracture in the history of life:

- Irretrievable loss of an entire living world covering vast territories, springtime without the cries of birds, and trees scorched by a huge and quiet fire.
- Fatalities in such great numbers, and in such inhumane conditions, that grieving is impossible to achieve, especially "at time of dry death" (9).
- An unexpected and inconceivable event, which lies beyond our faculties of imagination and whose future consequences are themselves unpredictable.
- Irradiated / contaminated victims affected by mental as well as physical suffering, because some effects will spread over several generations, will give birth to lines of deformed creatures.

In other words, "a before and after" with no possible return. A hole in the symbolic memory of humans, in their unconscious, which prepares "a return of the repressed" in line with the size of the event. But in addition to this, and this is the "double paradoxical effect" of atomic disasters, they have no end, no predictable term: it is a monster that grows and devours humanity from within, with a persistent morbidity that is hard to avoid. The atomic disaster "colonizes the future and offers no possibility to escape the doom: no culture is ready to take that bet" (10).

The negationism and its consequences in the Anthropocene era

The UN member states and international organizations, among which the UNSCEAR, have deliberately played down the health consequences of Chernobyl: that bias in judgments is also true for the WHO (11) with its infamous thesis that there were only about thirty fatalities until 2005. But there is a lot worse relating to the aftermath of August 6 1945.

Faces of the disgraceful defeat of Japan, the "Hibakushas" were treated as if they were plague carriers for fear of fantasized contagion; they were subjected to public shame, thus discouraging most survivors from contributing with their testimonies to any "work of memory": the kind of legacy which proved to be of such a critical importance in Europe's postwar intellectual life, as seen with Primo Levi, Robert Antelme, David Rousset, Charlotte Delbo, Elie Wiesel, Jorge Semprun, Jean Amery and other survivors. The Japanese aediles proceeded to a rapid "reconstruction" of the city that was intended to carefully delete all traces of their defeat and ... of this appalling crime (12). Contrary to what happened in the case of the Shoah perpetrated by Nazi Germany, winners and losers teamed up to blind humanity, in order to cover up, so far successfully, the nature of the crimes committed in Hiroshima and Nagasaki. As an example: with the help of the Japanese authorities, US military services had conducted on-site studies of the consequences of the bombings, studies that were kept in the secret archives of Washington which remained inaccessible for a long time. Besides the fact that this was contemptuous towards the victims who were suffering, it is these same archives that states and international organizations

now rely on to deny the effects of low doses over the long term!

Erase all traces, such is the creed common to all criminals and Holocaust deniers (see what Günter Anders has to say, more specifically, about this). The same policy was followed in Chernobyl and the same can be expected in Fukushima. **The "work of memory" is thus precluded in the same way that one attempts to lock up a piece of radioactive waste although we know perfectly well that we are passing the danger on to future generations.**

Another aspect of the policy of denial in the face of all these dangers lies in a line of reasoning which transforms the dangers in curves of mere statistical risks. What this intellectual manipulation of risk aims to hide, is the fact that in the case of a disaster (termed "residual risk") it is always the states which are called to the rescue because private funds are obviously insufficient to cope with the situation. But since Chernobyl and Fukushima, residents of all countries of the world must know that they can no longer rely on their governments to protect them effectively, either before or let alone after an atomic disaster. This is why we can say that the people of the entire world, after having been excluded from the political choice - no civil society was ever consulted on the nuclear issue - are under the risk of being excluded from the lands that feed them, "expelled from their own lives".

The Chernobyl disaster could have been even more serious

The disaster had its origin in the outrageous project which aimed to experiment in the "full scale of reality": the idea was, in the case of an emergency stop, to use the residual kinetic energy of the rotor of the generator for further production of electrical energy! In other words, the living world has (and since long ago) become a large scale laboratory for technoscience. But the material ejected by the single reactor N° 4 caused a contamination ten times more extensive than the bombs dropped on Hiroshima and Nagasaki, and the "Chernobyl cloud" circled the Earth, at least twice, **making Chernobyl the greatest technological disaster to date in the Anthropocene era.**

But there are more serious facts. The professor Vassili Nesterenko, a nuclear physicist who directly supervised operations to deal with the consequences of the disaster, explains (13) that if 1400 kg (14) of the uranium-graphite mixture came in contact with water, this would be a critical mass that could cause an atomic explosion with a power from 3 to 5 megatons, about 200 times the power of the explosion in Hiroshima; this would happen if enough of the corium, which had already pierced the reactor vessel, had pierced the concrete slab that separated it from the masses of water contained in the basement of the reactor. *"An explosion of such power could cause massive radiation injury to the population within a 300-320 km radius (encompassing the city of Minsk) and the whole of Europe could be the victim of a severe radioactive contamination making normal life impossible. [...] It is my opinion that in Chernobyl, we narrowly missed a nuclear explosion. If it had occurred, Europe would have become uninhabitable."* (15).

Fukushima, a replica of Chernobyl

In Japan, considering their condition, it is clear that the cooling systems will never be able to return to service. While borated water is injected as well as nitrogen, to render inert the atmosphere of the buildings, a huge amount of water is poured every day in order to cool them so as to prevent the corium from piercing the outer containment and reaching these same masses of water, which could be catastrophic. And it is not just one, but four reactors, including the N° 3 that worked on French-provided MOX (16), that are affected. Not to mention the consequences of seismic aftershocks, the possibility of which can unfortunately not be excluded, given the location of the plant. **Under these conditions, who can predict the possible cumulative effects of this type of situation, whether in Japan or elsewhere? Actually, the measures that were successfully applied in Chernobyl to avert a catastrophe of planetary scale are unlikely to ever be feasible anywhere else again, except perhaps for some time yet, in China.** In the former USSR, it was possible to recruit 800

000 "liquidators", as well as the emergency services of an entire vast country, hundreds of firefighters, ten thousand miners, a still powerful army with tens of thousands of reservists, all of this simply on the order of the Secretary of the Politburo. The deployment of such gigantic means will no longer be possible in other similar cases, and it is doubtful that appealing to other countries would be enough: in liberal democracy, there will be few volunteers to sacrifice their lives and experience a degree of pain that is known to be horrendous.

The prospect of having to survive in contaminated areas cannot be excluded

In the territories that were contaminated by fallout from Chernobyl, it is dangerous to practice farming, dangerous to wander in the forests, dangerous to go fishing and hunting, dangerous to eat locally produced food without checking its level of radioactivity, dangerous to drink milk and even water. All things that had been for many millennia the safest and most accurate sources of life - air, natural waters, the flowers, the fruit of the earth, forests, rivers and seas - all those, in just a few days, became sources of danger to man and animal. As this Ukrainian disaster has taught us, we must also consider the destructive health effects of "low doses", whether inhaled or ingested through food, which will then produce their effects many years later.

Equipment for automated spectrometry of the human body, such as the SCRINNER used in Belarus, are designed to measure the activity of radionuclides in the human body. These devices should be routinely used in all countries situated downwind of active atomic power plants. Moreover, real large scale public prescriptions should be issued, clarifying the advantages and limitations of iodine tablets, of sheltering measures, of first aid gestures, of evacuation perimeters, of the emergency plans ... This is why, in all countries, civil society organizations should consider the importance of creating a system of radiological control that is independent from the official system.

Nuclear industry, a radical trivialization of evil

Through his concept of "trivial evil", Hannah Arendt showed in the sixties that crimes against humanity were committed by ordinary people because they would not ask any questions about the purpose of their "activities". Once they were bound by an oath of loyalty to their hierarchy (or to an ideology, all of which are nowadays construed as universal values by the calculating reason which rules the world of "work" and other areas), they regarded these activities as legitimate.

This concept of "trivialization of evil" is not derived from speculation about a "human nature", but is indeed based on a socio-historical analysis of what happened in Europe between 1933 and 1945 and what paved the way for those events. Sixty years later, unless you believe in a world shielded from evolution, we must dare to draw conclusions from what Hannah Arendt wrote.

Historically, the trivialization of evil in the Western world spread widely once labor and human beings became "industrialized" with the solid support of science and technology: in other words, they were cut off from their nurturing earth-based reality, to be quartered in barracks, proletarianised, disqualified, deprived of their reality and ultimately dehumanized. From that moment, everything became possible in the order of trivialization and everything became acceptable in the order of evil, since all human purposes were discredited for the sole benefit of consumerist and market-based alienation.

Since then, things have not improved: this can be verified at all levels, including the human psyche (17). So we must have the courage to say that this trivialization of evil has become pervasive and, consequently, our societies have become nothing more than "democratic totalitarian systems" leading us to one or several final disasters, which should be analyzed as such in the realm of politics. The nuclear industry, which carries the potential universal death of all living beings on the planet, is a particularly striking example. But governments along with most media in the Western world (the cold war, which lasted forty years, contributed largely to this) did everything to cover the historic defeat of humanity which occurred on the 6th and 9th of August 1945, with a thick blanket of admiration and devotion to the brilliant ideas and the power of research, science,

technology, industry ... A new god had emerged on August 6 1945, naturally yielding fearsome power, as do all gods, and new hymns were promptly created for his glory.

The dropping of atomic bombs, and the "Chernobyl experience" were not only a crime against humanity but also something new: a crime against Nature, what we today would call an Ecocide. If the consciousness of such a systemic disaster for the ecosphere continues to be suppressed, it will not be without consequences for the future of humanity and the way history will be written.

All this leads to a necessary conclusion: there is a need for an international tribunal to be set up, similar to the one created by Bertrand Russell, for judging atomic crimes against humanity that occurred at Chernobyl and elsewhere since August 6 1945, all the way to Fukushima, through Fallujah.

Notes:

1 - 100 Mt: Andrei Sakharov, *Mémoires*, Seuil, 1990, p 246. The French IRSN claims it was about 50 Mt.

2 - European Committee on Radiation Risk (CERR), *Recommandations 2003 du CERI*, Ed Frison Roche, 2004. Summary and viewing of the report on: www.euradcom.org. For the CERR, an estimated 65 million deaths are attributable to the nuclear industry since 1945!

3 - Claude Lorius, *Voyage dans l'Anthropocène*, Actes Sud, 2010.

4 - The vast majority of information that follows is from the book by Alexei V. Yablokov, Vasily B. Nesterenko, Aleksei V. Nesterenko, Chernobyl, *the Consequences of the Disaster for Man and Nature* No. 1181, Annals of the Academy of Sciences New York, 2009. The selection of texts translated into French is from Wladimir Tchertkoff in collaboration with Lisa Mouravieff. The American version is in part searchable online at: <http://books.google.fr/>. Other sites offer summaries in French.

5 - At the time of the accident, the activity of certain "hot particles" reached 10 to 12,000 Becquerels, which could cause death within few hours.

6 - Yuri Bandazhevsky was arrested in July 1999, allegedly as part of emergency measures to combat terrorism. Arbitrarily detained and accused of corruption, sentenced on 18 June 2001 to eight years in prison, despite the public recantation of his accuser, after a trial worthy of the thirties, he was imprisoned until 2005. Nesterenko, director of the independent Belarusian Institute of Radiation Protection, Belrad, which he founded in 1989 with the help of Andrei Sakharov, Ales Adamovich and Anatoly Karpov, was threatened with internment in a mental asylum by the KGB, suffered two attacks, and died August 25, 2008 after surgery to the stomach.

7 - Alexei V. Yablokov, Vasily B. Nesterenko, Aleksei V. Nesterenko, op. cit. These figures have been widely reviewed upward either by the NY Academy of Sciences, or following the international conference in November 2010: see "La gazette nucléaire" No. 259 February 2011, on <http://resosol.org/Gazette/2011/259p23.html>

8 - Age characterized by the fact that man has become the main geological force on earth (Georgescu-Roegen, P. Crutzen, A. Gras, J. Grinevald or C. Lorius).

9 - Allouch Jean, *Erotique du deuil au temps de la mort sèche*, EPEL, 1995

10 - Frederic Lemarchand, sociologist, member of the Scientific Board of CRIIGEN, article dated March 17, 2011, Les Echos.

11 - An agreement was signed in 1959 between the IAEA and WHO forcing the latter to submit its position to that of IAEA in all cases where nuclear power is at stake.

12 - The city was quickly rebuilt, which is entirely understandable and it was also the case in Europe. But one would have hoped that other traces of the disaster remain, and not just the dome of the industrial exhibition palace.

13 - In the movie «*Tchernobyl; la vie contaminée, vivre avec Tchernobyl* » by David Desramé and Dominique Maestràli.

14 - In 2011, there are still the equivalent of some tens of tons of uranium in the sarcophagus...

15 - Letter from Mr. Prof. Nesterenko to Wladimir Tchertkoff, Solange Fernex and Bella Belbéoch, Jan. 2005.

16 - Fuel consisting of a mixture of uranium oxides, but also of plutonium, which on the one hand reduces the safety margins (its melting temperature being lower and more quickly reached) and on the other hand increases its dangerousness, a few milligrams being sufficient to cause a rapid death.

17 - Melman Charles, Lebrun Jean-Pierre, *La nouvelle économie psychique, une nouvelle façon de penser et de jouer aujourd'hui*, Eres, 2009.

This call was signed by:

Paul ARIES, philosopher and writer, key intellectual for the movement in support of economic decrease. Last book published: « La simplicité volontaire contre le mythe de l'abondance »

Marc ATTEIA, Doctor of Applied Mathematics, Professor Emeritus at the University of Toulouse, author of: Hilbertian kernels and spline functions, Elsevier Science Publishers, 1992 and *Le technoscientisme, le totalitarisme contemporain*, Yves Michel, 2009.

Marie-Christine GAMBERINI, translator, referent of the association Les Amis de la Terre France on nuclear questions and energy.

Raphaël GRANVAUD writes in "Billets d'Afrique" of the association Survie, author of *Que fait l'armée française en Afrique*, Agone 2009, and *Areva en Afrique, une face cachée du nucléaire français*, Agone 2012.

Alain GRAS, professor emeritus at the University of Paris I and Director of the Centre d'études des techniques, des connaissances et des pratiques, co-founder of the journal *Entropia*, author of *Le choix du feu. Aux origines de la crise climatique*, Fayard, 2007.

Francis JARRIGE, Senior Lecturer at the University of Burgundy, author of *Face au monstre mécanique. Une histoire des résistances à la technique*, imho, Paris, 2009.

Eva JOLY, former magistrate of the pôle financier de Paris, former adviser to the Norwegian government then to the Icelandic Government in the struggle against international financial crime, Member of European Parliament.

Baudouin JURDANT, Professor Emeritus at the University of Paris 7, translator of Paul Feyerabend, author of *Les problèmes théoriques de la vulgarisation scientifique*, Ed. Les Archives contemporaines, 2009.

Paul LANNOYE, PhD in Physical Sciences, honorary MEP, director responsible for the thinktank Groupe de réflexion et d'action pour une politique écologique (GRAPE) in Belgium, co-translator into French of the report CERI, Editions Frison-Roche.

Serge LATOUCHE, Professor Emeritus of Economics, University Paris XI and growth objector, author of *Vers une société d'abondance frugale ; Contresens et controverses sur la décroissance*, Mille Et Une Nuits/Fayard, 2011.

Frederick LEMARCHAND, sociologist, co-director of the pole RISK, University of Caen, Council Member of the scientific Council CRIIGEN. Co-author of *Les Silences de Tchernobyl* and of the film *La Vie Contaminée*, advisor for the International Exhibition Once upon a time Chernobyl.

Corinne LEPAGE, former Minister of Environment, MEP, a teacher at the IEP. Last book: *La vérité sur le nucléaire ; le choix interdit*, Albin Michel, 2011.

Stephane LHOMME, Chairman of the Observatoire du Nucléaire, author of *L'insécurité nucléaire ; bientôt un Tchernobyl en France*, Yves Michel, 2006.

Jean-Marie MATAGNE, Ph.D in Philosophy, President of l'Action des Citoyens pour le Désarmement Nucléaire (Www.acdn.net), author of *En finir avec la terreur nucléaire*, and of *Désarmer pour vivre sur une planète sans armes ni centrales nucléaires*.

Roland MERIEUX, secretary of the International Union for assistance to the liquidators of the Chernobyl nuclear power plant and nuclear victims.

Jean-Marie PELT, President of the European Institute and Honorary Professor of Ecology at the University of Metz, latest book: *Heureux les Simples*, Flammarion, 2011.

Pierre RABHI, farmer, Algerian-born French writer and thinker, Knight of the ordre national de la Légion d'Honneur, Pierre Rabhi is among the pioneers in agroecology.

Jacques TESTART, agronomist and biologist, PhD in Science, Honorary Director of Research at INSERM, former president of the French Commission on Sustainable Development (1999 -2003). Co-author of *Labo-planète. Ou comment 2030 se prépare sans les citoyens*, Mille et une nuits, 2011.

Jean-Marc ROYER, engineer, former senior ADP, former leader of the union executive SICTAM / CGT of the airport of Orly, in press: *La science creuset de l'inhumanité. Décoloniser l'imaginaire occidental. I*, Writer of the Appeal. Email: jean-marc_royer@orange.fr