

Chernobyl +20: The accident continues

A “Nuclear Renaissance” requires a major re-write of history, and official agencies are using the 20th anniversary of the Chernobyl accident as the springboard to do so.

April 26th marks the 20th anniversary of the world’s worst nuclear accident – the explosion and fire at the Chernobyl-4 nuclear reactor near Kiev, Ukraine. For the last 20 years the accident has hung like the death-shroud it is over not only Eastern Europe, but also the nuclear industry and its plans to build new reactors. Desperate in its stagnation in the US and abroad, the industry is now attempting to hijack the anniversary for its own ends, and re-write the tragic history that the accident caused to make building new nuclear reactors more palatable to the public. However, new understandings of the effects of low-doses of ionizing radiation on health, and a more determined and unified safe-energy/anti-nuclear community will stand in the way of these plans.

1984 – all over again...

While the “nuclear renaissance” has been around officially since late 2001, the nuclear industry and its friends in world governments and agencies have been working exceedingly hard and systematically to prepare the public for nuclear expansion. To do so, the industry has had to work overtime to minimize the effects of both the Chernobyl accident, and newly recognized mechanisms and adverse health effects relating to ionizing radiation, especially at low doses.

The first round of highly visible, made-for-public-consumption distortions came in September, 2005. It would have made George Orwell’s 1984 character Winston Smith proud that history could be re-written to such an extent. With much fanfare, the United Nations’ International Atomic Energy Agency (IAEA), the World Health Organization (WHO), the United Nations Development Program, and representatives from several governments released a report titled, “*Chernobyl’s Legacy: Health, Environmental and Socio-Economic Impacts.*” Their press release carried the highly presumptuous and self-serving assertion, “*Chernobyl: The True Scale of the Accident--20 Years Later a UN Report Provides Definitive Answers and Ways to Repair Lives.*” Not-too-deep analysis of the report and the conclusions and recommendations of its authors would demonstrate how arrogant and erroneous these proclamations were.

The main observations and conclusions of the IAEA/WHO release are (*italics our emphasis*):

- Up to 4,000 people could *eventually* die of radiation exposure from the Chernobyl nuclear power plant (NPP) accident nearly 20 years ago, concluded an international team of more than 100 scientists.
- As of mid-2005, fewer than 50 deaths had been *directly attributed* to radiation from the disaster, almost all being highly exposed rescue workers, many who died within months of the accident and as late as 2004.
- 4,000 cases of thyroid cancer have occurred, mainly in children, but... except for nine deaths, all of them have recovered. The survival rate among such cancer victims, judging from experience in Belarus, has been almost 99%... “the team of international experts found *no evidence* for any increases in the incidence of leukemia and cancer among affected residents.”



Chernobyl nuclear power station, Ukraine.
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CHERNOBYL UKRAINE D
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- Approximately 1,000 on-site reactor staff and emergency workers were heavily exposed to high-level radiation on the first day of the accident; among the more than 200,000 emergency and recovery operation workers exposed from 1986-1987, an estimated 2,200 *radiation-caused deaths* can be expected.
- An estimated five million people currently live in areas of Belarus, Russia and Ukraine that are contaminated with radionuclides due to the accident; about 100,000 of them live in areas classified in the past by government authorities as areas of “strict control”. *The existing “zoning” definitions need to be revisited and relaxed in light of the new findings.*
- Most emergency workers and people living in contaminated areas received relatively low *whole body radiation doses*, comparable to natural background levels. As a consequence, no evidence or likelihood of decreased fertility among the affected population has been found, *nor has there been any evidence of increases in congenital malformations attributable to radiation exposure.*
- Poverty, “lifestyle” diseases now rampant in the

former Soviet Union and *mental health problems* pose a far greater threat to local communities than does radiation exposure.

- Relocation proved a “deeply traumatic experience” for some 350,000 people moved out of the affected areas. Although 116,000 were immediately moved from the most heavily impacted area, later relocations did little to reduce radiation exposure.
- *Persistent myths and misperceptions about the threat of radiation* have resulted in “paralyzing fatalism” among residents of affected areas.
- Ambitious rehabilitation and social benefit programs started by the former Soviet Union, and continued by Belarus, Russia and Ukraine, *need reformulation due to changes in radiation conditions, poor targeting and funding shortages.*
- Structural elements of the sarcophagus built to contain the damaged reactor have degraded, posing a risk of collapse and the release of radioactive dust;
- A comprehensive plan to dispose of tons of high-level radioactive waste at and around the Chernobyl NPP site, in accordance with current safety standards, has yet to be defined.
- Alongside radiation-induced deaths and diseases, the report labels the mental health impact of Chernobyl as “the largest public health problem created by the accident” and partially attributes this damaging psychological impact to a lack of accurate information. These problems manifest as negative self-assessments of health, belief in a shortened life expectancy, lack of initiative, and dependency on assistance from the state. (All the above bulleted points come from the initial Press release of the IAEA/WHO, Sept. 5, 2005)

The World Responds – Along Familiar Battle Lines:

The UN report was warmly embraced by the nuclear industry and its allies in governments and institutions around the globe. Even the higher political echelons of the governments of Belarus, Ukraine and Russia collaborated on and embraced the results, with the attitude that the accident was over, and the world was now safe to buy their produce and other products, and they would no longer have to pay so many benefits to the survivors. Indeed, in 2005 Ukraine itself announced plans to construct 11 new nuclear reactors (*not* of the RBMK Chernobyl-type design; one recent report suggests as many as 35), not to meet local energy needs, but to sell to the eastern European electricity market.

The reaction of the safe-energy/anti-nuclear movement and others who deal with the day-to-day effects of the accident was much different, however. High-ranking individuals in the ministries of health of the same three countries mentioned above were furious over what they saw as obfuscation at best, denial of the reality they see daily at worst. Activist NGOs were equally critical, almost immediately. With the passage of time,

significant documentation has been collated (see below) demonstrating the serious flaws in the UN report.

“True” and “Definitive”? Flaws Abundant in Report:

The 600+-page UN Report is daunting reading for anyone, even those familiar with the issues and the science involved. It is outright prohibitive for the average person. For either group several key failures of commission and omission are quite evident:

1. “Statistical Betrayal”: The announced estimates of health effects and reported observations are wildly incompatible with those found by other professionals, using even the same conservative methods of calculation; and with those of health professionals “on the scene” in the affected countries:

Most credible researchers agree that the exact death toll attributable to the accident will never be known. It is still recognized to be a huge and an unprecedented industrial accident. However, through very carefully chosen wording, and selective use of focus on the trees and not the forest, the IAEA/WHO have engaged in a statistical betrayal that both perpetuates former absurd estimates – the legendary “32 firefighters died” – and minimizes present and future ones of greater magnitude.

Previously, both political figures, and health professionals and agencies – even the WHO – have maintained fatality figures and other effects far higher than the ones appearing on the 2005 IAEA/WHO list. In 1996 on the 10th Anniversary of the accident, former ambassador from Ukraine to the U.S. Yuri Shcherbak stated in an article appearing in *Scientific American* that, “I believe [that the 1996 Greenpeace estimate of 32,000 deaths to that date] is defensible.”

The total estimate of 4,000 by IAEA/WHO is neither consistent with local or previous official estimates. Recent analyses by several other organizations and eminent researchers produce far more tragic estimates:

- The recently released “TORCH” Report – “*The Other Report on Chernobyl*” (see “Resources”) – commissioned by Rebecca Harms, a Green Party member of the European Parliament, on behalf of the Greens/EFA in the European Parliament and in conjunction with the April 23-25, 2006 **Chernobyl+20: Remembrance for the Future** conference in Kiev, Ukraine arrived at a range of between 30,000 and 60,000 deaths. Additionally, TORCH was very meticulous in its critique of the numerous failings of the IAEA/WHO 2005 Report.
- The recently released book “*Chernobyl: 20 Years On – Health Effects of the Chernobyl Accident*,” produced by the European Committee on Radiation Risk (ECRR; see Resources) goes even farther than TORCH in both its critique, and its estimates. A compilation of research papers done by independent researchers from the West, Russia, Ukraine and Japan, researchers place the fatality estimate in the range of hundreds of thousands to

millions of deaths from all accident-related causes. Further, and in stark contrast to the IAEA/WHO report, these researchers actively incorporate new understandings about the paradoxically greater effect that low-doses of ionizing radiation seem to have; and also the understanding that a great quantitative and qualitative difference seems to exist between “internal” and “external”/whole-body doses of radiation.

- A March 25, 2006 story in *The Guardian* reports: "At least 500,000 people - perhaps more - have already died out of the 2 million people who were officially classed as victims of Chernobyl in Ukraine," said Nikolai Omelyanets, deputy head of the National Commission for Radiation Protection in Ukraine. "[Studies show] that 34,499 people who took part in the clean-up of Chernobyl have died in the years since the catastrophe. The deaths of these people from cancers was nearly three times as high as in the rest of the population.

"We have found that infant mortality increased 20% to 30% because of chronic exposure to radiation after the accident. All this information has been ignored by the IAEA and WHO. We sent it to them in March last year and again in June. They've not said why they haven't accepted it."

Evgenia Stepanova, of the Ukrainian government's Scientific Centre for Radiation Medicine, said: "We're overwhelmed by thyroid cancers, leukaemias and genetic mutations that are not recorded in the WHO data and which were practically unknown 20 years ago."

- On April 18, 2006 Greenpeace released a study done in conjunction with research from the Belarus National Academy of Sciences, "stating that of the two billion people globally who got touched by the Chernobyl fallout, 270,000 will develop cancers as a result, of which 93,000 will prove fatal."

"The Greenpeace report further extrapolates that in total some 200,000 people in Russia, Ukraine and Belarus could have already died as a result of medical conditions -- such as cardiovascular diseases -- attributable to the disaster." [Source: Reuters]

- Even using traditional, conservative calculating methodology based on external exposure data from the Japanese A-Bomb studies, internationally eminent epidemiologist Dr. Rosalie Bertell in 2006 has calculated the range of final fatalities to lay between 899,600 to 1.79 million -- 290 deaths due to direct radiation damage, and an additional 899,300 to 1,786,657 due to fatal cancers of all types. She concludes:

"Clearly the true damage to health attributable to the Chernobyl disaster has been kept from the general public through poor and incomplete scientific investigation." (Source: ECCR 2006: *Chernobyl 20 Years On*, p. 248). Given the new understandings of the effects of ionizing radiation, and the huge body of credible data existing that stands in contradiction to the IAEA's calculations,

officials and journalists caught simply referring to the old "32 dead from Chernobyl" statistic do so at the risk of their professional credibility and integrity.

The 2005 Report speaks of 4,000 thyroid cancers in Belarus to date; yet as recently as 2000, the WHO's own estimates predicted as many as 50,000 cases over time for the *Gomel region of Belarus alone*. And while these are thankfully not fatal, thyroid cancer -- indeed any cancer -- is enormously disruptive of the ability of an affected person to lead a "normal" life. This is a huge discrepancy in statistics, showing a callous indifference to the people having to deal with the life-disruptions stemming from these non-fatal cancers.

The 2005 Report speaks of little to no evidence of increases in leukemia and other cancer. Yet, research done by numerous local and international research teams have found the opposite to the true. For example, in the Gomel region of Belarus, incidence of leukemia has reportedly already increased 50% in children and adults. [Source: Otto Hug Strahleninstitut: Informationen, Ausgabe 9/2001K, 2001]. *Swiss Medical Weekly* recently published findings showing a 40% increase in all kinds of cancers in Belarus between 1990 and 2000. [Source: A.E. Okeanov / E.Y. Sosnovskaya / O.P. Priatkina: *A national cancer registry to assess trends after the Chernobyl accident*, Swiss Medical Weekly, Basel, 2004].

An enormous data set exists which describes the congenital malformations that the 2005 Report conveniently does not find present. Much of this unfortunately exists only in Russian; a need for translation of these highly technical reports is urgent.

Yet, a great deal of medical literature is accessible. For example, in 1991 the Ukrainian Ministry of Health reported three times the normal rate of deformities and developmental abnormalities in newborn children, as well as in increased number of miscarriages, premature births, and stillbirths. [Source: Otto Hug Strahleninstitut: Informationen, Ausgabe 9/2001K, 2001].

Genetic mutations have also been amply documented, both in the literature, and in the tragic and intensely graphic films produced by the many Chernobyl relief agencies such as the Chernobyl Children's Project International (see "Resources"). Hereditary defects in Belarusian newborns increased in the years after the disaster. [Source: Lazuk, GI: *Study of possible genetic impact of the Chernobyl accident using Belarus national registry of congenital malformations*, Belarus Institute for Hereditary Diseases, Minsk.] Scientists have observed that congenital and hereditary defects have passed on to the next generation, as young people exposed to radiation grow up and have their own children. [Source: Yuri E. Dubrova: *Monitoring of radiation-induced germline mutation in humans*, Swiss Medical Weekly, 2003, 133: 474-478]

New literature, such as the recently-released compilation, *“Chernobyl: 20 Years On – Health Effects of the Chernobyl Accident,”* produced by the European Committee on Radiation Risk (ECRR) provide ample documentation of mutagenetic effects not only in humans, but also the fauna and flora around Chernobyl.

2.) *The “GI-GO” factor – “garbage” assumptions in/“garbage” conclusions out -- permeates the report, and greatly effects its conclusions:*

A proper examination of the set of assumptions, both specific modeling assumptions and more global, general scope selection is in order. As in the computer world, the quality, validity and reliability of the data going in affects the conclusions going out.

At the macro level, the Report seems to self-select broad topical areas for examination that result in conclusions that fit IAEA/WHO agendas more than they do local experiences in the real world. For example, the Report seems to emphasize “fatalities” as the primary outcome that matters. If one predicts a low number of final fatalities, one minimizes the need for future response, and call the accident “over.” Such seems to be the case with the astonishingly low figure of ultimate fatalities expected in the IAEA/WHO analysis. Yet, it will be the enormously much larger number of non-fatal cancer and other health problems from both chronic radiation exposure and the other non-radiological effects of the accident that will serve in the long run as the most debilitating effect on these societies. Long-term perpetual care from continual chronic health problems is an endless cost to a society. By focusing on fatalities, and “demonstrating” a low result, the IAEA/WHO Report can declare the same kind of victory the United States did in Vietnam – and can then go back to business as usual more quickly, and at lower costs.

The focus of the cause of death is also relatively narrow. The IAEA/WHO language is frequently deceptively narrow, preferably focusing on deaths *directly attributable* to “radiation.” This obfuscation is particularly insidious, as if all the other deaths relating to the accident from other causes somehow do not matter, or should be ignored.

If someone were to describe World War II as that tragic event defined by the shooting deaths of about, say, 800,000 to 1.4 million soldiers, and then argue in conclusion that war, while terrible, was actually not so bad, people would be shocked. They would demand to know why deaths from aerial bombings, including the atomic-bombings of Japan, artillery shells, fire, cold, disease, famine and malnutrition, and the death camps were not included. They would demand to know why someone would deliberately attempt to re-write the history of one of humankind’s most tragic and despicable episodes, to make war more palatable. *They would remand a reckoning, an accountability.*

In the same manner humanity should vigorously challenge the IAEA/WHO attempt to re-write the history of humankind’s worst nuclear exchange to date.

At a more micro level, the IAEA/WHO Report is written using assumptions about radiation effects that may no longer be valid (see below). It makes no distinction between internal and external doses of radiation, and completely avoids any attempt to deal with a growing body of data that suggests that the effects of chronic exposure to lower doses of radiation are far more harmful than high-dose single-exposure events. And finally, it totally ignored the devastating conclusions of the U.S. National Academy of Sciences BEIR-VII Report on the effects of ionizing radiation (see below), which came out two months before the IAEA/WHO Report. This last factor alone is sufficient to call into question the whole set of assumptions and methodologies used in the IAEA/WHO Report.

3.) *A new meaning for the term, “POLITICAL Science” distorts or makes highly suspect the 2005 Report’s claims of “definitive” validity and reliability:*

- ***Control group pollution:*** For any science to be valid, a proper “control group” of individuals needs to be in place. These are the people to whom one compares the conditions of the people being studied. They are alike in all or most respects except one – they are assumed to not have been exposed to the harmful condition under study.

Finding valid control groups in the affected countries is nearly impossible for many reasons, and this invalidates the controls used by the IAEA/WHO. Their rosy positive results may well be an artifact of the highly distorted and therefore unreliable control groups used.

First, it has been well documented that the former Soviet officials literally ordered health personnel to not record mention of radiation exposure on huge numbers of health documents, greatly distorting the numbers of both exposed and unexposed populations.

It has also been documented that radio-contamination of foodstuffs for export to regions not experiencing Chernobyl fallout; unofficial marketing of officially prohibited yet contaminated foods; unauthorized use of contaminated wild foodstuffs (forest mushrooms and berries, game animals), and other similar confounding activities are factors which certainly have tainted control groups originating from any of the irradiated countries.

Finally, simple “linguistic de-toxification” – official decree – has been the last resort of permissible dosing of unsuspecting populations. Like legendary King Canute of Denmark “commanding” the waves to recede so he could invade England, leaders like Belarus’ Alexander Lukaschenko have similarly decreed food safe to eat.

Under these circumstances the control groups will be receiving radiation doses too, and also experiencing any effects these bring. Thus final comparison to the “contaminated” populations will result in little

observable discrepancy – and a false “no effect” or “little effect” conclusion.

- ***Deliberate censorship of known data:***

Internationally renowned research physician Dr. Michel Fernex and his wife, Solange Fernex, have been waging a tireless battle against the self-censorship and secrecy that the IAEA and WHO impose on valuable health data concerning Chernobyl, preventing an accurate and complete understanding of the health impacts.

Their battle was documented in the 2003 film “Nuclear Controversies,” by Wladimir Tschertkoff (originally titled “Atomic Lies,” see “Resources”). The Fernexs have been trying to free the release of conference proceedings from a 1995 international conference on Chernobyl health impacts actually sponsored by WHO. These proceedings have not been made public – at IAEA’s insistence.

It seems a little known 1957 agreement, Agreement WHA12.40, made between IAEA and WHO, recognizes IAEA as possessing “primary responsibility for encouraging, assisting and co-ordinating research on, and development and practical application of, atomic energy for peaceful uses... article 1 para. 2” Additionally, this agreement stipulates that “whenever either organization proposes to initiate a programme or activity on a subject in which the other organization has or may have a substantial interest, the first party shall *consult the other with a view to adjusting the matter by mutual agreement.* Article 1 para. 3 (emphasis added).” It also adds a privacy clause in Article 3 para. 1: The IAEA and the WHO “recognize that they may find it necessary to apply certain limitation for the safeguarding of confidential information furnished to them. They therefore agree that nothing in this agreement shall be construed as requiring either of them to furnish such information as would, in the judgment of the party possessing the information... *interfere with the orderly conduct of its operations.* (emphasis added)” [Source: “*Amendments needed in the Agreement between the International Atomic Energy Agency and the World Health Organization,*” Cindy Folkers, Nuclear Information and Research Service, Washington, D.C.]

This anachronistic agreement legally allows IAEA and WHO to self-censor each other’s work, and keep it out of the public view – *especially* work with results that are unfavorable to the agency’s mission to promote nuclear power. This is not science – it is totalitarian censorship. Since the same agencies were the prime movers for the 2005 Report, this 1957 agreement seriously calls into question the 2005 Report’s validity and reliability, since it provides no independent means of ascertaining whether or not data unfavorable to IAEA’s mission to promote nuclear power either exists or was considered.

- A final example of politics meddling into science and public health was the 2005 revelation that the French government hid Chernobyl fallout exposure data from

the people of Corsica and southern France who were exposed in 1986. [Source: *The Australian*, Dec. 5, 2005]. The revelation is now being incorporated into a civil class action lawsuit on behalf of thyroid cancer victims in France. Other governments have been similarly accused of suppressing such fallout information.

4.) The Report Conclusions exceed the mandates and at times even the professional expertise of both the IAEA and the WHO:

The official mandate of the IAEA is to “accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world.” That of the WHO is to “promote and protect the health of all peoples.” Given these it seems highly inappropriate for agencies with such clear mandates to be “recommending” how sovereign nations allocate their domestic spending, as is done so often in the IAEA Report. It smacks of a paternalistic condescension at best; a pre-arranged political agenda at worst. The idea that “the West knows best” is one that is highly reviled among many in Eastern Europe, often provoking a bristling defensiveness.

The recommendations to “revisit and relax zoning standards” are predicated on a highly contestable assumption: that the levels of radioactive contamination remaining in such zones has actually decayed to some “acceptable” legalistic standard, let alone “safe” levels. This assumption is simply wrong on two counts. First, on-the-ground researchers and health officials in the affected regions dispute this assumption; and second, the assumption fails to recognize any of the new research and understanding of the effects of low doses of ionizing radiation, and the qualitative difference between internal and external doses. It does not reconcile well with the observations of the BEIR-VII Report, which came out in June of 2005 (see below), and which warned that there essentially is no dose of radiation below which one can say there is no harm.

Researchers Dr. Rosalie Bertell of The Grey Nuns of the Sacred Heart and Dr. Angelika Claußen of International Physicians for the Prevention of Nuclear War (IPPNW) have this to say about the IAEA’s relentless recommendations for reallocating funds use:

“This second “major” and “important [IAEA] finding” proposes relaxing the existing zoning regulations in the light [of] the clearly unscientific findings. There appears to be consciously vested interests behind this press release and report. Such an economic goal is unbecoming of the purportedly scientific assessment of human health damage. One would expect that a political response to a serious scientific study would be made by government officials who would assume political responsibility for reliance on the science. Scientists do not normally make political

decisions, nor should government officials blindly rely on decisions claiming to be scientific.”

[Source: NIRS/WISE Monitor #634, Sept. 16, 2005, p.1]

5.) *The Report wreaks of a “blame the victim” attitude, and almost Soviet- psychiatry style reliance on the self-serving diagnosis of “nuclear phobia” as the source of many if not most problems:*

There is no doubt that the accident provoked a considerable amount of “post-traumatic stress disorder” (PTSD) over an enormous population; this has been studied and documented. However, the degree to which the 2005 Report refers to “Poverty, “lifestyle” diseases now rampant in the former Soviet Union and mental health problems...” and refers to “persistent myths and misperceptions about the threat of radiation,” makes one suspicious about the agenda of the IAEA and WHO.

There is no doubt again that these conditions exist in the affected regions. However, it is valid to ask what is cause and what is effect here; and further, which of these conditions relate synergistically with each other, and with continued, chronic low-dose radiation exposure. It is also illogical to think that the presence of these conditions somehow cancels out the actual effects of ionizing radiation, a “positive mental attitude” notwithstanding. No amount of PMI will undo gene damage, heal a defective immune system, or get radioisotopes out of the food supply or forests.

Agencies and individuals in the affected nations are already doing much independently of their governments and the UN agencies to reverse some of these conditions, and mitigate the effects of chronic radiation exposure. The BELRAD Institute in Belarus (<http://belrad.paris-minsk.org/>), tenuously operated by Dr. Vasily Nesterenko and others, has engaged in a regular program of radiation monitoring for cesium; and for body detoxification through use of pectin and clean food. He and his agency are often criticized by the government, which has offered little in the way of formal help. BELRAD’s research and findings are repeatedly ignored, and repeatedly not incorporated into IAEA or WHO studies.

One of the most well-known and outrageous examples of blaming the victim, or in this case the victims’ messenger, is the case of Prof. Yuri Bandashevsky of Belarus. After he and his wife Galina, a pediatric cardiologist, conducted extensive research on cesium-137 contamination and effects in Belarus, they discovered a previously unknown medical syndrome which resulted in extensive damage to heart muscle tissue, now known as “Chernobyl Heart.” Because his efforts challenged preferred assessments of safety, he was eventually arrested by the government, had his research stopped and confiscated, and was sentenced by a military tribunal to 8 years in prison on trumped up charges of “corruption and taking bribes.” Fortunately, he is now free after serving part of this sentence.

6.) *Does the rest of the World matter?:*

The emphasis of the IAEA Report is on the three countries which bore the initial brunt of the Chernobyl radiation plume – Belarus, Ukraine, and Russia. However, this focus on the trees comes at the expense of the forest.

The 2006 TORCH study points out that, “more than half of the total *quantity* of Chernobyl’s volatile inventory was deposited *outside* these countries.” Further, 40% of the surface of Europe received some significant dose of radioactive cesium-137 fallout greater than 4,000 Bq/m². Not mentioned by IAEA and WHO is that 13% of the surface of Austria’s land surface received fallout greater than 40,000 Bq/m², a percentage greater than Ukraine’s at this level of contamination.

Many previous estimates done by eminent independent researchers concluded that the world death toll from fatal cancers would be enormous. In 1986 Dr. John Gofman of the U.S. calculated a toll of 475,000 fatal cancers, and an equal number of non-fatal cancers (based on a 4% core release, a number currently being re-evaluated as too low), numbers which he re-confirmed in 1996 at the 10th Chernobyl anniversary. The overwhelming majority of cancer fatalities in the previously mentioned estimate done by Dr. Rosalie Bertell are expected to occur in European nations *other than* Belarus, Ukraine and Russia. These observations are not discussed by the IAEA/WHO Report.

A study which disqualifies most of the World from its examination can hardly be called “definitive.”

7.) *Does the rest of science matter?:*

On June 29, 2005, two months before the IAEA/WHO released their “definitive” results, the National Academy of Scientists Committee on the Biological Effects of Ionizing Radiation (the BEIR-VII Committee) also released their definitive study. After an extensive 7-year review of the literature, it announced its results:

“The Committee’s report develops the most up-to-date and comprehensive risk estimates for cancer and other health effects from exposure to low-level ionizing radiation. In general, the report supports previously reported risk estimates for solid cancer and leukemia, but the availability of new and more extensive data have strengthened confidence in these estimates.

“Specifically, the committee’s thorough review of available biological and biophysical data supports a “linear, no-threshold” (LNT) risk model, which says that the smallest dose of low-level ionizing radiation has the potential to cause an increase in health risks to humans. In the past, some researchers have argued that the LNT model exaggerates adverse health effects, while others have said that it underestimates the harm. The preponderance of evidence supports the LNT model, this new report says.

"The scientific research base shows that there is no threshold of exposure below which low levels of ionizing radiation can be demonstrated to be harmless or beneficial," said committee chair Richard R. Monson, associate dean for professional education and professor of epidemiology, Harvard School of Public Health, Boston. "The health risks – particularly the development of solid cancers in organs – rise proportionally with exposure. At low doses of radiation, the risk of inducing solid cancers is very small. As the overall lifetime exposure increases, so does the risk." The report is the seventh in a series on the biological effects of ionizing radiation." [Source: BEIR-VII Press Release, June 29, 2005].

It would seem that none of the methodology used by IAEA,WHO or anyone affiliated with their 2005 Report would have been able to incorporate any of BEIR-VII's methods, findings or conclusions in constructing their own models and statistical assumptions. Hence, one can only conclude that the IAEA 2005 Report is predicated on outdated, incomplete, and inadequate assumptions and models.

Beyond the absence of the BEIR-VII revelations the study ignores many new and unfortunately ominous observations and understandings about the paradoxically greater biological and health effects coming *from low-doses* of ionizing radiation. Absent from the IAEA/WHO report are considerations of the qualitative and quantitative difference between internal and external doses of radiation; the by-stander effect; the second-event theory; genomic instability models; the Petkau Effect; and the supra-linear model for low-dose radiation exposures. While BEIR-VII does not support some of these contentions, it does call for continued research into these phenomena to get at an adequate and improved understanding of these observations and theories.

Taken as a whole, the conclusions of the IAEA Report seem to be based on old and inadequate understandings of the effects of ionizing radiation on human health and genetic integrity.

CONCLUSIONS MOVING FORWARD

As the World acknowledges and commemorates the events surrounding the Chernobyl accident on this, the 20th anniversary of the event, it is critical that it does so with eyes wide open. It needs to examine not only the failings of the past, but the real extent of the disaster in the present and for the future.

The anniversary comes at a time when the nuclear industry is trying to re-sell the public on a whole new round of reactor building worldwide. The "nuclear renaissance," as it has become labeled, is supposed to have corrected all the failings of the past reactors. It is supposed to be the techno-cure for global warming, with the prospect for 4,000 to 8,000 new reactors being

needed to actually make any appreciable difference in reducing greenhouse gases. This point is significant.

In the early days of nuclear power, its technical proponents calculated that nuclear power would be deemed "successful" if the industry experienced one catastrophic accident, with large release of radiation, once per ten-thousand reactor-years (one "reactor-year" is simply one reactor, operating one year). This was perfectly "acceptable" (as are the many doses and regulatory standards promulgated by the regulators) to proponents. This statistic is critical to understanding the mindset of the industry and its proponents:

If the industry bullies its way – through help from its friends at IAEA and sympathetic governments – into building those 4,000-8,000 new reactors, say in response to a rapidly worsening global warming crisis, then it will be "perfectly acceptable" to them, using this statistic, to experience a Chernobyl-sized accident (or worse) *every one to two years*.

If the lessons of Chernobyl are not learned, or used to make people understand that there is nothing "inherently safe" about having thousands of machines built worldwide, each storing 1,000-Hiroshima's worth of radiation inside, then the "nuclear renaissance" will become a reality, albeit one based on distortions and continued statistical betrayals of both the public health and trust.

The IAEA/WHO Report therefore represents not just another "debatable" matter of "our-statistics-versus-yours," which can go on endlessly. It is a clear demonstration that the nuclear industry and its allies at the UN and in world governments will do whatever it takes to "linguistically de-toxify" nuclear power, and make it seem "reasonable" and acceptable for the public to embrace. Once the reactors are built, the fuses are lit....■

Special Thanks....

NEIS wishes to thank all those whose work has made this article possible, many but unfortunately not all of whom are mentioned by name throughout the text; many more in the accompanying Resources Page.

In particular NEIS extends a special thanks to the people of the Chernobyl Children's Project International (www.chernobyl-international.org), for their assistance in facilitating our educational showings of the 2004 Academy Award-winning film, "Chernobyl Heart," for the many references we obtained from their website, and through their program, for the privilege of having had the opportunity in the recent past to meet and help co-host nine wonderful young people from Belarus affected personally by the accident. These children made Chernobyl a far more real experience than any number of "statistics" we or IAEA could ever possibly provide.

Important Chernobyl Resources...2011

While preparing to observe the 25th anniversary of the nuclear disaster at Chernobyl, we now find ourselves having to mourn the new nuclear crisis at the Fukushima reactors in Japan. Together, these nuclear disasters serve as a warning to humankind that there is no room for nuclear power to continue on this planet. We intend this page as a list of resources for the general public to learn more about the hazards of nuclear power. For more contacts and information, visit the webpage of the **Chernobyl+20 Conference at: www.ch20.org**

Recent Important Books and Reports:

HEALTH EFFECTS OF CHERNOBYL 25 years after the reactor catastrophe, IPPNW Germany and Gesellschaft für Strahlenschutz e.V., April 2011, www.tschernobyl-folgen.de, or www.gfstrahlenschutz.de. ipnw@ipne.de

CHERNOBYL: Consequences of the Catastrophe for People and the Environment, A. Yablokov, V. Nesterenko, A. Nesterenko, edited by De. Janette Sherman, 2010. Available for \$10 at GREKO PRINTING, 734-453-0341, e-mail: TONY@GREKOPRINTING.COM On Amazon Kindle: \$2.95. Critically important analysis done by East European scientists.

CHERNOBYL 20 YEARS ON: Health Effects of the Chernobyl Accident, eds. C.C. Busby and A.V. Yablokov, 14 contributors, 250 pages, April 2006. ISBN 1 897761 25 2 Published on behalf of the European Committee on Radiation Risk by Green Audit Press, Castle Cottage, ABERYSTWYTH SY23 1DZ United Kingdom. PRICE: £55 (EU 90, USD 90), £20 (EU 32, USD 32) for those individuals, students, etc. who are unable to afford the full price. E-mail orders directly: admin@euradcom.org or from the publisher from the address above or by emailing: admin@greenaudit.org. Please pay by cheque in £ sterling or Euros or US Dollars made out to 'Green Audit'

THE OTHER REPORT ON CHERNOBYL (TORCH): An independent scientific evaluation of health and environmental effects 20 years after the nuclear disaster providing critical analysis of a recent report by the International Atomic Energy Agency (IAEA) and the World Health Organisation (WHO)

Ian Fairlie PhD, UK; David Sumner DPhil, UK Commissioned by Rebecca Harms, MEP, Greens/EFA in the European Parliament; Supported by the Altner-Combecher Foundation and the Hatzfeldt Foundation; Berlin, Brussels, London, Kyiv; April 2006, 91 pages. Downloadable in .pdf at: http://www.greens-efa.org/cms/topics/dokbin/118/118499.the_other_report_on_chernobyl_torch@en.pdf

THE CHERNOBYL CATASTROPHE: Consequences on Human Health, 53 contributors, Greenpeace, April, 2006. 138 pages. ISBN-5-94442-013-8, Downloadable in .pdf at: <http://www.greenpeace.org/raw/content/international/press/reports/chernobylhealthreport.pdf>

The IAEA/WHO Report: "Chernobyl's Legacy: Health, Environmental and Socio-Economic Impacts," Sept, 2005. The IAEA/WHO Report is available at: Wagramer Strasse 5, P.O. Box 100, A-1400 Vienna, Austria; Tel.: (+43 1) 2600 21270/21275 E-Mail: info@iaea.org / www.iaea.org

Films, DVDs and Videos:

"THE BATTLE OF CHERNOBYL," film by Thomas Johnson, Icarus Films, NY. (800)876-1710; www.frif.com, 94 min., 2006. Also on YouTube and various online sources free.

"CHERNOBYL HEART," Mary Ann DeLeo and HBO Films. 2004 Academy Award Winner, Best Short Documentary, 36 min. DVD's and showing license rights available for \$129.00 US from Films Media Group 2572 Brunswick Pike, Lawrenceville, NJ 08648 USA; Phone: 1-800-257-5126 | Fax: 609-671-0266; www.films.com Email: custserv@filmsmediagroup.com

"NUCLEAR CONTROVERSIES" (formerly "ATOMIC LIES"), DVD from Wladimir Tschertkoff, 2003. Contact: 6945 Origlio – Switzerland; tel & fax 004191 945 35 46; Emanuela Andrioli at: eandreoli@vtx.ch [NOTE: Because the producer wishes a wide distribution of this film, NEIS has DVD versions available in English, German, Russian and French, which we make available for only the cost of postage and production -- \$5 US.]

Chernobyl Organizations – ways to help!:

- **Children of Chernobyl Relief Fund (Ukraine)**, US: 272 Old Short Hills Road, Short Hills, NJ 07078; (973)376-5140. e-mail: info-ua@childrenofchernobyl.org Ukraine: 25 Kreshchatyk, Apt. 28, Kyiv, Ukraine 252001, ph: +38-044-494-1535
- **Chernobyl Children's Project International**, US: 217 East 86th Street, PMB #275, New York NY 10028 www.chernobyl.typepad.com/ 1-888-CCP-8080 info@chernobyl-international.org
- **BELRAD Institute (Belarus)**, Belarus 220114, Minsk, Staroborisovski tract 11 Tel.: + 375 17 237-03-89, 237-03-96. Fax: +375 17 237-03-66 Mailto: belrad@hmti.ac.by The institute of radiation safety "BELRAD" (Institute "BELRAD") was created in 1990 and acts as an independent -- not state run -- organization. The purpose of "BELRAD" is radiation monitoring of the inhabitants of Chernobyl zone and their foodstuffs, development of measures of radiation safety and protection of the population in territories contaminated by radionuclides by conducting necessary scientific research, and organizing implementation of their results in practice.
- **EcoClub (Ukraine)**, P.O. Box 73, Rivne, 33023, Ukraine. Ph: +380-362-237024; ecoclub@ukrwest.net
- **MAMA-86 (Ukraine)**, 22, Mikhailivska str., 01001, Kyiv-1, Ukraine. Ph.: +380-44-2787749. www.mama-86.org.ua anna@mama-86.org.ua

Radiation/Chernobyl Effects Experts:

- Dr Chris Busby, Green Audit, Castle Cottage, Sea View Place, Aberystwyth SY23 1DZ UK tel. +44 1970 630215
- Prof. Dr. Alexey V. Yablokov, Russian Academy of Sciences, Center for Russian Ecological Policy, 26 Valilov St., Moscow, Russia 119991 e-mail yablokov@online.ru
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