

# Chernobyl: The Consequences of the Catastrophe for People and the Environment

By [Alexey V. Yablokov](#) and [Vassily B. Nesterenko](#)

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## Chernobyl: Consequences of the Catastrophe for People and the Environment

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This is a collection of papers translated from the Russian with some revised and updated contributions. Written by leading authorities from Eastern Europe, the volume outlines the history of the health and environmental consequences of the Chernobyl disaster. According to the authors, official discussions from the International Atomic Energy Agency and associated United Nations' agencies (e.g. the Chernobyl Forum reports) have largely downplayed or ignored many of the findings reported in the Eastern European scientific literature and consequently have erred by not including these assessments.

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NEW YORK—"Chernobyl: Consequences of the Catastrophe for People and the Environment," Volume 1181 of *Annals of the New York Academy of Sciences*, published online in November 2009, was authored by Alexey V. Yablokov, of the Russian Academy of Sciences, Alexey V. Nesterenko, of the Institute of Radiation Safety (Belarus), and the late Prof. Vassily B. Nesterenko, former director of the Belarussian Nuclear Center. With a foreword by the Chairman of the Ukrainian National Commission on Radiation Protection, Dimitro M. Grodzinsky, the 327-page volume is an English translation of a 2007 publication by the same authors. The earlier volume, "Chernobyl," published in Russian, presented an analysis of the scientific literature, including more than 1,000 titles and more than 5,000 printed and Internet publications mainly in Slavic languages, on the consequences of the Chernobyl disaster.

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## **REVIEW BY KARL GROSSMAN**

published in September 2010

*This past April 26th [2010] marked the 24th anniversary of the Chernobyl nuclear plant accident. It came as the nuclear industry and pro-nuclear government officials in the United States and other nations were trying to “revive” nuclear power. And it followed the publication of a book, the most comprehensive study ever made, on the impacts of the Chernobyl disaster.*

*Chernobyl: Consequences of the Catastrophe for People and the Environment was published by the New York Academy of Sciences.*

*It is authored by three noted scientists:*

*Russian biologist Dr. Alexey Yablokov, former environmental advisor to the Russian president;*

*Dr. Alexey Nesterenko, a biologist and ecologist in Belarus; and*

*Dr. Vassili Nesterenko, a physicist and at the time of the accident director of the Institute of Nuclear Energy of the National Academy of Sciences of Belarus.*

*Its editor is Dr. Janette Sherman, a physician and toxicologist long involved in studying the health impacts of radioactivity.*

The book is solidly based — on health data, radiological surveys and scientific reports — some 5,000 in all.

It concludes that based on records now available, some 985,000 people died, mainly of cancer, as a result of the Chernobyl accident. That is between when the accident occurred in 1986 and 2004. More deaths, it projects, will follow.

The book explodes the claim of the International Atomic Energy Agency— still on its website that the expected death toll from the Chernobyl accident will be 4,000. The IAEA, the new book shows, is under-estimating, to the extreme, the casualties of Chernobyl.

Alice Slater, representative in New York of the Nuclear Age Peace

Foundation, comments: “The tragic news uncovered by the comprehensive

new research that almost one million people died in the toxic aftermath of Chernobyl should be a wake-up call to people all over the world to petition their governments to put a halt to the current industry-driven

“nuclear renaissance.’ Aided by a corrupt IAEA, the world has been subjected to a massive cover-up and deception about the true damages caused by Chernobyl.”

Further worsening the situation, she said, has been “the collusive agreement between the IAEA and the World Health Organization in which the WHO is precluded from publishing any research on radiation effects without consultation with the IAEA.” WHO, the public health arm of the UN, has supported the IAEA’s claim that 4,000 will die as a result of the accident.

“How fortunate,” said Ms. Slater, “that independent scientists have now revealed the horrific costs of the Chernobyl accident.”

The book also scores the position of the IAEA, set up through the UN in 1957 “to accelerate and enlarge the contribution of atomic energy,” and its 1959 agreement with WHO. There is a “need to change,” it says, the IAEA-WHO pact. It has muzzled the WHO, providing for the “hiding” from the “public of any information “unwanted” by the nuclear industry.

“An important lesson from the Chernobyl experience is that experts and organizations tied to the nuclear industry have dismissed and ignored the consequences of the catastrophe,” it states.

The book details the spread of radioactive poisons following the explosion of Unit 4 of the Chernobyl nuclear plant on April 26, 1986. These major releases only ended when the fire at the reactor was brought under control in mid-May. Emitted were “hundreds of millions of curies, a quantity hundreds of times larger than the fallout from the atomic bombs dropped on Hiroshima and Nagasaki.” The most extensive fall-out occurred in regions closest to the plant—in the Ukraine (the reactor was 60 miles from Kiev in Ukraine), Belarus and Russia.

However, there was fallout all over the world as the winds kept changing direction “so the radioactive emissions” covered an enormous territory.”

The radioactive poisons sent billowing from the plant into the air included Cesium-137, Plutonium, Iodine-131 and Strontium-90.

There is a breakdown by country, highlighted by maps, of where the radionuclides fell out. Beyond Ukraine, Belarus and Russia, the countries included Bulgaria, Finland, France, Germany, Greece, Italy, Poland, Sweden and the United Kingdom. The radiological measurements show that some 10% of Chernobyl poisons “fell on Asia” Huge areas” of eastern Turkey and central China “were highly contaminated,” reports the book. Northwestern Japan was impacted, too.

Northern Africa was hit with “more than 5% of all Chernobyl releases.”

The finding of Cesium-137 and both Plutonium-239 and Plutonium-240 “in accumulated Nile River sediment is evidence of significant Chernobyl contamination,” it states.

“Areas of North America were contaminated from the first, most powerful explosion, which lifted a cloud of radionuclides to a height of more than 10 km. Some 1% of all Chernobyl nuclides,” says the book, “fell on North America.”

The consequences on public health are extensively analyzed. Medical records involving children—the young, their cells more rapidly multiplying, are especially affected by radioactivity—are considered. Before the accident, more than 80% of the children in the territories of Ukraine, Belarus and Russia extensively contaminated by Chernobyl “were healthy,” the book reports, based on health data. But “today fewer than 20% are well.”

There is an examination of genetic impacts with records reflecting an increase in “chromosomal aberrations” wherever there was fallout.

This will continue through the “children of irradiated parents for as many as seven generations.” So “the genetic consequences of the Chernobyl catastrophe will impact hundreds of millions of people.”

As to deaths, the list of countries and consequences begins with Belarus. “For the period 1900-2000 cancer mortality in Belarus increased 40%,” it states, again based on medical data and illuminated by tables in the book. “The increase was a maximum in the most highly contaminated Gomel Province and lower in the less contaminated Brest and Mogilev provinces.” They include childhood cancers, thyroid cancer, leukemia and other cancers.

Considering health data of people in all nations impacted by the fallout, the “overall mortality for the period from April 1986 to the end of 2004 from the Chernobyl catastrophe was estimated as 985,000 additional deaths.”

Further, “the concentrations” of some of the poisons, because they have radioactive half-lives ranging from 20,000 to 200,000 years, “will remain practically the same virtually forever.”

The book also examines the impact on plants and animals. “Immediately after the catastrophe, the frequency of plant mutations in the contaminated territories increased sharply.”

There are photographs of some of these plant mutations. “Chernobyl irradiation has caused many structural anomalies and tumorlike changes in many plant species and has led to genetic disorders, sometimes continuing for many years,” it says. “Twenty-three years after the catastrophe it is still too early to know if the whole spectrum of plant radiogenic changes has been discerned. We are far from knowing all of the consequences for flora resulting from the catastrophe.”

As to animals, the book notes “serious increases in morbidity and mortality that bear striking resemblance to changes in the public health of humans—increasing tumor rates, immunodeficiencies, and decreasing life expectancy.”

In one study it is found that “survival rates of barn swallows in the most contaminated sites near the Chernobyl nuclear power plant are close to zero. In areas of moderate contamination, annual survival is less than 25%.” Research is cited into ghastly abnormalities in barn swallows that do hatch: “two heads, two tails.”

“In 1986,” the book states, “the level of irradiation in plants and animals in Western Europe, North America, the Arctic, and eastern Asia were sometimes hundreds and even thousands of times above acceptable norms.”

In its final chapter, the book declares that the explosion of the Chernobyl nuclear plant “was

the worst technogenic accident in history.” And it examines “obstacles” to the reporting of the true consequences of Chernobyl with a special focus on “organizations associated with the nuclear industry” that “protect the industry first-not the public.” Here, the IAEA and WHO are charged.

The book ends by quoting U.S. President John F. Kennedy’s call in 1963 for an end of atmospheric testing of nuclear weapons.”The Chernobyl catastrophe,” it declares, “demonstrates that the nuclear industry’s willingness to risk the health of humanity and our environment with nuclear power plants will result, not only theoretically, but practically, in the same level of hazard as nuclear weapons.”

Dr. Sherman, speaking of the IAEA’s and WHO’s dealing with the impacts of Chernobyl, commented: “It’s like Dracula guarding the blood bank.” The 1959 agreement under which WHO “is not to be independent of the IAEA” but must clear any information it obtains on issues involving radioactivity with the IAEA has put “the two in bed together.”

Of her reflections on 14 months editing the book, she said: “Every single system that was studied — whether human or wolves or livestock or fish or trees or mushrooms or bacteria — all were changed, some of them irreversibly. The scope of the damage is stunning.”

In his foreword, Dr. Dimitro Grodzinsky, chairman of the Ukrainian National Commission on Radiation Protection, writes about how “apologists of nuclear power” sought to hide the real impacts of the Chernobyl disaster from the time when the accident occurred. The book “provides the largest and most complete collection of data concerning the negative consequences of Chernobyl on the health of people and the environment...The main conclusion of the book is that it is impossible and wrong “to forget Chernobyl.”

In the record of Big Lies, the claim of the IAEA-WHO that “only” 4,000 people will die as a result of the Chernobyl catastrophe is among the biggest. The Chernobyl accident is, as the new book documents, an ongoing global catastrophe.

And it is a clear call for no new nuclear power plants to be built and for the closing of the dangerous atomic machines now running — and a switch to safe energy technologies, now available, led by solar and wind energy, that will not leave nearly a million people dead from one disaster.

**Karl Grossman** is a professor of journalism at the State University of New York/College at Old Westbury and host of the nationally syndicated TV program *Enviro Close-Up*

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