THE UNSCEAR 2000 REPORT

The Truth About Chernobyl Is Told

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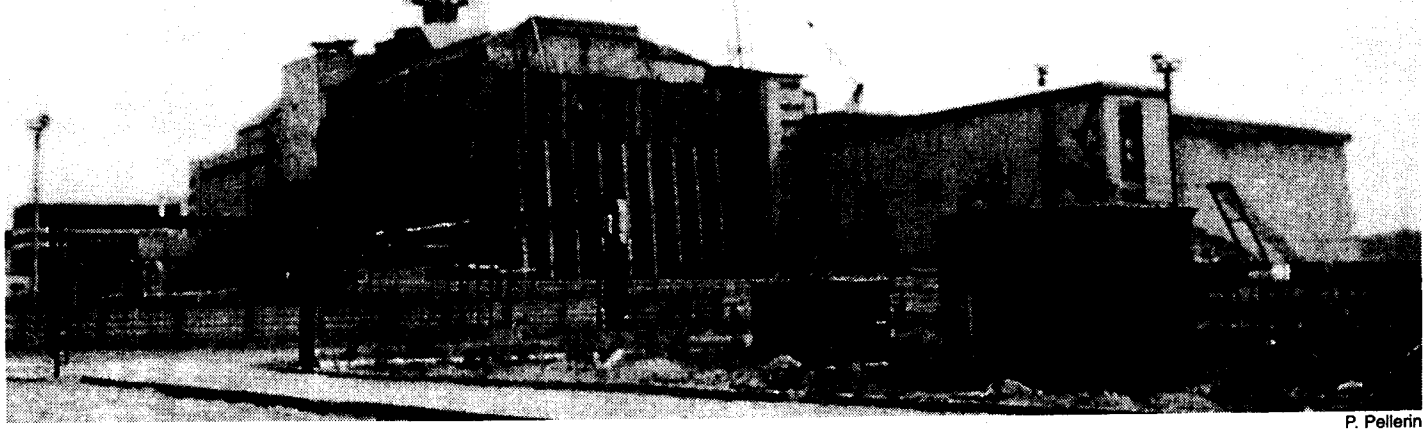


P. Pellerin

The Chernobyl accident is still surrounded by anti-nuclear lies and fear. Here, the damaged reactor, photographed in 1992.

The recent report of the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) is in total disagreement with the opinions widely propagated by the international media, by the Greens, and by the governments of Belarus and Ukraine, that there have been tens of thousands of cancer deaths and epidemics of genetic disorders, allegedly caused by the Chernobyl accident. To the contrary, UNSCEAR states, even among the progeny of the survivors of the atomic attacks on Hiroshima and Nagasaki, who received radiation doses hundreds of times higher than the radiation doses to the inhabitants of regions contaminated by the Chernobyl accident, *no radiogenetic disturbances of health have been found.*

UNSCEAR's 1,220-page *magnum opus:* "Sources and Effects of Ionizing Radiation," subtitled "The *UNSCEAR 2000* Report to the General Assembly, with Scientific Annexes," was published in September. The report to the General Assembly itself is short, only 17 pages, which serves as a non-technical summary of the 10 technical appendices.

These 10 annexes present an in-depth review of the current state of research on radiation levels and effects, based on 5,400 scientific references.[1] The total report represents the work of 146 committee members of 21 national delegations to UNSCEAR, and of the organization's 15 scientific staff and consultants, over the past six years.

The two most important points that the report makes to the General Assembly are first, a comparison of the radiation doses that an average inhabitant of the Earth receives from all types of natural and man-made sources; and second, an estimate of the health effects caused by the Chernobyl accident, probably the largest possible catastrophe that can occur at a nuclear power station. This juxtaposition offers the reader a way to realistically compare man-made radiation hazards, such as Chernobyl, with the everlasting and ubiquitous natural radiation.

Both issues are "hot." Comparison of doses may influence the future foundations of radiation protection principles and regulations. The report's appendix on Chernobyl (115 pages and 558 references) is obviously politically incorrect: *it denies the claims of a mass health disaster caused by radiation in the highly contaminated regions of the former Soviet Union.*

At the global scale, as the report shows, the average natural radiation dose is 2.4 mSv per year, with a "typical range" reaching up to 10 mSv. However, in the Annex on natural radiation, UNSCEAR presents data indicating that this dose range in some geographical regions is many tens and hundreds times higher than the *average* natural global dose, or than the currently accepted annual dose limits for general population (1 mSv) and occupationally exposed people (20 mSv).

No adverse health effects related to radiation were ever observed among people exposed to such high natural doses. This strongly suggests that the current radiation standards are excessively, and unnecessarily, restrictive.

Radiation Disease and Chernobyl

To estimate the health effects of the Chernobyl accident, one should take into account information on radiation doses absorbed by the exposed populations involved, and the results of epidemiological studies. According to *UNSCEAR 2000,* 134 employees of the Chernobyl nuclear power station and rescue workers, who developed symptoms of acute radiation disease, received doses between 800 to 16,000 mGy. Among them, 28 persons died, as the result of various forms of acute radiation disease, and two more persons died as a result of thermal and mechanical injuries. Although the average radiation dose received by the 381,000 emergency workers after the accident, called "liquidators," between 1986 and 1989 was 113 mSv, *no increase of cancers and leukemia occurred in this group.*

In 1986, some 116,317 persons were evacuated from contaminated regions of Belarus, Russia, and Ukraine. After 1986, about 220,000 additional persons were

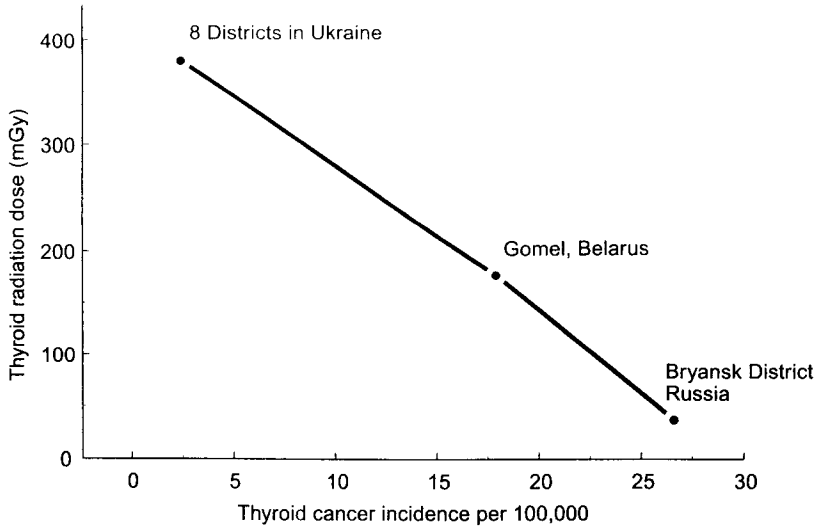


Figure 1
MAXIMUM THYROID CANCER INCIDENCE RATES IN CHILDREN IN HIGHLY CONTAMINATED REGIONS, COMPARED WITH RADIATION DOSE
Shown are the maximum thyroid cancer incidence rates in children in highly contaminated regions of Belarus, Russia, and Ukraine, who were under 15 years old at the time of diagnosis, compared with average thyroid radiation doses. As can be seen, the area with the lowest *radiation dose has the* highest *incidence of thyroid cancer.*

Thyroid cancers are 90 percent curable. As of this writing, only one of these children has died.

Source: Adapted from *UNSCEAR 2000*, Annex J, Tables 40 and 57

relocated, and relocation continued until 1992. In all, about 336,000 persons were resettled, incurring enormous costs to the country, and bringing great suffering to the people involved. There were actually plans to relocate 850,000 people, which fortunately were not fully realized.

The basis for the resettlement was, first, the possibility that those people living in the most contaminated areas would absorb a lifetime whole body dose (that is, their total dose received over a period of 70 years) higher than 350 mSv, which is about double the average global natural radiation dose. Later, this lifetime limit was lowered to 150 mSv, and then to 70 mSv (1 mSv per year).

The decision on relocation was completely unnecessary and, in fact, counterproductive to the health and well-being of the involved population; it was taken in 1990 by the Supreme Soviet, under pressure from the pseudo-experts coming from ecological, populist, and nationalist groups.[2]

According to Prof. Leonid Ilyin, the Soviet scientist who was a member of the group overseeing the rescue operations, a temporary evacuation was probably necessary for about 50,000 people, in addition to a special case of 49,360 inhabitants of the city of Pripyat, very close to the plant. In fact, the decision to evacuate Pripyat was not based on the actual contamination of the city (the lethal fallout covered about 0.5 km^2, in two patches extending up to 1.8 km from the reactor, and did not reach Pripyat). The decision was made based on the suspicion that the burning reactor core might melt the concrete floor on which it was standing and fall into cellars below, which may have been filled with a large amount of water. In this case, an enormous vapor explosion might have sent vast amounts of radionuclides into the atmosphere, thus endangering the inhabitants of Pripyat. Fortunately, as became known later, there was no water in the cellars.

Thus, in the special case of Pripyat, one can say, that the early decision to evacuate the inhabitants of Pripyat was well conceived, and correctly performed. But most of the other evacuations were unnecessary, erroneous, and harmful.

The ultimate cause of these unnecessary relocations was the principle of the linear, no-threshold (LNT) relationship between radiation dose and health effects, which is accepted as the gospel of the International Commission of Radiological Protection (ICRP).

LNT to Blame

The ICRP bases its recommendations for protection of the public in radiation accidents on the LNT. These recommendations—the lifetime limits of 350 mSv and 150 mSv—were used by the Soviet decision-makers, even though they are lower by a factor of 4 to 40 than the natural lifetime doses in many countries of the world, which have been inhabited for thousands of years.

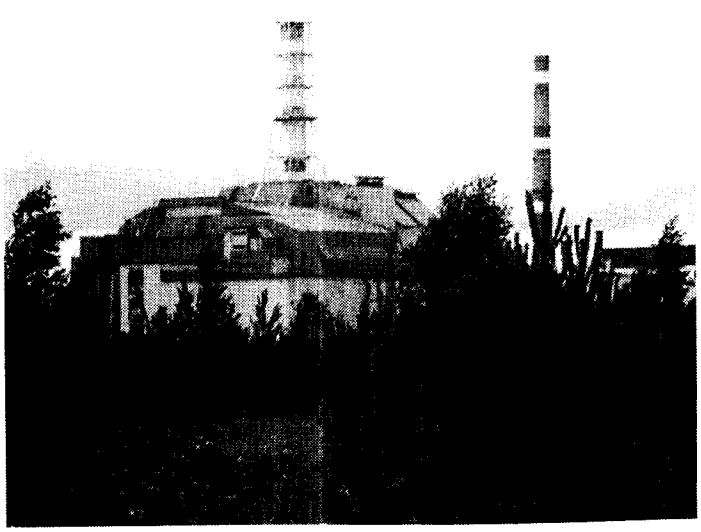
People who were evacuated in 1986, received an average, whole-body radiation dose of 20 mSv, and a dose to the thyroid (from iodine-131) of 470 mSv. Inhabitants of the most highly contaminated parts of Belarus, Russia, and Ukraine, where deposition of cesium-137 was higher than 555 kBq per m^2, received the whole body doses of 47 mSv, 36 mSv, and 83 mSv, respectively. The average doses to the thyroid in the most contaminated regions were 177 mGy in the Gomel district (Belarus), 37 mGy in the Bryansk district (Russia), and 380 mGy in the 8 most contaminated districts of Ukraine.

The Thyroid Cancer Hoax

In its final conclusions on the health effects of the Chernobyl accident, the UNSCEAR report stated the following:

"The number of thyroid cancers (about 1,800) in individuals exposed in childhood, in particular in the severely contaminated areas of the three affected countries, is considerably greater than expected based on previous knowledge. The high incidence and the short induction period are unusual. Other factors may be influencing the risk."

One of these factors are what are called "occult" thyroid cancers, those detected at autopsies by histological studies, and which do not cause visible clinical disturbances during the person's lifetime. These occult thyroid cancers occur *en masse* all over the world. For example, in Canada their incidence is 6,000 per 100,000 population; in Poland it is 9,000; in the United States 13,000; and in Finland 35,000. The highest incidence of thyroid cancers in children found in Russia, before the Chernobyl accident, was 26.6 per 100,000; in Belarus, 17.9;



Courtesy of Dr. Ronald Chesser

Contrary to the scare stories about a nuclear wasteland, the most contaminated region around Chernobyl is now a magnificent nature preserve, with abundant flora and fauna.

and in Ukraine, 4.9. Thus, the potential for the discovery of "excess" thyroid cancers, after the intense health screening that took place after the accident, is enormous.

According to UNSCEAR data, the increase in thyroid cancers diagnosed in children under 15 years old, began to be seen as early as 1987 in Russia, and in 1990 in Belarus—that is, only one year and four years after the accident. However, the latency time for radiation-induced solid cancers, such as thyroid cancer, is about 10 years. According the data presented in the *UNSCEAR 2000* report, there is no relationship (or rather there is an inverse one) between the registered incidence of thyroid cancers in children, and thyroid radiation doses to the population in contaminated areas (Figure 1).

No Increase in Cancers

Finally, UNSCEAR concludes: "Apart from the increase in thyroid cancer after childhood exposure, no increases in overall cancer incidence or mortality have been observed that could be attributed to ionizing radiation. The risk of leukemia, one of the main concerns (leukemia is the first cancer to appear after radiation exposure, because of its short latency time of 2 to 10 years), does not appear to be elevated, even among the recovery operation workers. Neither is there any proof of other non-malignant disorders that are related to ionizing radiation. However, there were widespread psychological reactions to the accident, which were due to fear of the radiation, not to actual radiation doses."

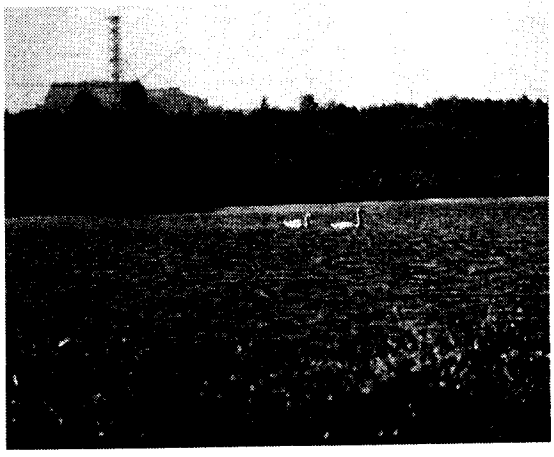
"Finally," the report continues, "it should be emphasized that . . . the vast majority of the population need not live in fear of serious health consequences from the Chernobyl accident. For the most part they were exposed to radiation levels comparable to, or a few times higher than, the natural background levels. . . . Lives have been disrupted by the Chernobyl accident, but from the radiological point of view and based on assessment on this Annex ('Exposures and Effects of the Chernobyl Accident'), generally positive prospects for the future health of most individuals should prevail."

The future will see what prevails: the diligent, objective, scientific judgment of UNSCEAR, which is the most competent scientific body worldwide on radiation matters, or the ideologically and politically motivated propaganda of fear.

Zbigniew Jaworowski, a former chairman and current member of UNSCEAR, is a leading expert on the effects of radiation. He is a professor at the Central Laboratory for Radiological Protection in Warsaw.

Notes

1. The 10 annexes discuss dose assessment methodologies; exposures from natural radiation sources; exposures to the general population from man-made sources; medical and occupational exposures; DNA repair and mutagenesis; effects of low-level radiation doses; combined effects of radiation and other agents; epidemiology of radiation-induced cancers; and exposures and effects of the Chernobyl accident.
2. For more details, see Z. Jaworowski, "A Realistic Assessment of Chernobyl's Health Effects," *21st Century,* Spring 1998, pp. 14-25.



Courtesy of Dr. Ronald Chesser

The scientists who have monitored the status of the contaminated area around Chernobyl, have argued on the basis of the development there, that the regulatory standards for radiation exposure for animals and plants should be higher than those for human beings. Here, Chernobyl's swans (left) and storks.