Semipalatinsk, Kazakhstan

Nuclear weapons test site

The story of Soviet nuclear testing at Semipalatinsk is a cautionary tale of how "national security" can be used to justify willful deception that jeopardizes public well-being and the health of future generations. In Semipalatinsk, the local population was exposed to high levels of radioactivity from nuclear weapon tests for several decades.

A crater on the Semipalatinsk Test Site in the steppes of Kazakhstan. After the country's independence in 1991, the Kazakh government closed down the site and returned its nuclear weapon stockpiles to Russia – at that time the fourth largest nuclear arsenal in the world. Photo: © CTBTO Preparatory Commission

Bernard Lown (left), a founding co-president of IPPNW, and Olzhas Suleimenov (right), a famous Kazakh poet, in Karaul/Semipalatinsk. In 1990, the International Physicians for the Prevention of Nuclear War and Suleimenov's Nevada-Semipalatinsk Movement joined ranks in order to convince President Gorbachev of the need for a nuclear testing moratorium. Photo: © Martin Deeken

Karipbek Kuyukov was born without arms. His mother was exposed to radioactivity from the nuclear tests in Semipalatinsk. Today, after finishing his university education, he is engaged in the global effort to abolish nuclear weapons and is active in the Nevada-Semipalatinsk Movement. Photo: © BANg

History

In 1949, the Soviet military conducted its first nuclear explosion at the Semipalatinsk Test Site, a 19,000 km² zone in the steppes of Kazakhstan. Over a forty year period, the USSR detonated 467 atomic and thermonuclear devices at Semipalatinsk – 120 atmospheric tests and 347 underground tests – with little regard for the local population or the environment.[1]

In 1990, IPPNW teamed up with Kazakh poet Olzhas Suleimenov's Nevada-Semipalatinsk Movement for demonstrations that ultimately persuaded Mikhail Gorbachev to declare a nuclear testing moratorium. After declaring its independence in 1991, Kazakhstan officially closed the Semipalatinsk site, and renounced the world's fourth largest arsenal of nuclear weapons, which it had inherited from the USSR.

On a global scale, more than 2,000 nuclear weapon tests were undertaken on dozens of test sites. The consequence of this madness was worldwide contamination with radioactive fallout, exposing people all over the planet to increased levels of radioactivity.

Health and environmental effects

Since the closure of the Semipalatinsk Test Site, various studies have been conducted to determine the medical, social and environmental impacts of radioactive contamination. Despite incomplete knowledge of the extent of the damage, there is widespread agreement that the local population has suffered greatly. Several thousand square kilometers of land remain contaminated for generations to come. No one knows for sure about the condition of water supplies and soil throughout the region. Local officials say that hundreds of thousands of people from the region, possibly as many as 1.5 million, were affected.

A number of genetic defects and medical conditions, ranging from cancers and impotency to birth defects and congenital malformations, have been attributed to the test fallout. Along with an epidemic of babies born with severe neurological damage, major bone deformations or missing limbs, there have also been significantly increased rates of hematological disorders, such as leukemia.[2] A 2008 study by Kazakh and Japanese doctors found that the population surrounding Semipalatinsk received more than 500 mSv of radiation in one exposure – doses similar to those of the Hibakusha of Hiroshima and Nagasaki, or the equivalent of about 25,000 chest x-rays.[2]

In one village, which was engulfed by a radioactive cloud after the first nuclear test in August 1949, 90 % of its inhabitants received an external effective dose of up to 1,400 mSv during the first year alone. In the most heavily contaminated areas, people received an estimated effective dose of 2,000 mSv during the years of testing – enough to cause symptoms of acute radiation disease.[2] Based on these dose estimates, we can anticipate that between 14 and 20 % of those exposed would develop cancers as a result of nuclear testing.[3] The Japanese-Kazakh study even found cancer rates in the affected regions in Eastern Kazakhstan that were 25–30 % above the national average. The scientists also found a higher likelihood of mental deficiencies in children born to parents who were exposed to the radioactive fallout.[2]

The Semey Oncology Center observed a significant rise in malignant tumors among the local population, especially lung, stomach, breast, and thyroid cancers. The Institute of Radiation Medicine and Ecology in Kazakhstan reported a direct link between radiation exposure and gene defects in families living in villages near the test site. This was supported by findings of the University of Leicester, UK, which was able to show in 2002 that people in Semipalatinsk who were exposed to high doses of radiation had an 80 % higher rate of DNA mutations than control groups, and even the children of those directly exposed to fallout had rates that were about 50 % higher.[3]

Outlook

In 2009, the UN General Assembly unanimously adopted a resolution calling on the international community to support Kazakhstan in tackling the profound health, environmental and socio-economic challenges facing the Semipalatinsk region and its population. In response, numerous UN agencies, donor countries, non-governmental organizations, and medical and scientific institutions have helped to establish projects to address the legacy of nuclear weapons testing in Kazakhstan and ease the suffering of the Hibakusha of Semipalatinsk. August 29, the day that the Semipalatinsk Test Site was officially closed in 1991, is commemorated each year as the International Day against Nuclear Tests.

References

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