

# 75 years after Trinity: A legacy of harm and hope

BY CTBTO EDITORIAL TEAM

*The first nuclear explosion: 'Trinity',  
16 July 1945, Alamogordo, New  
Mexico, United States.*

100 METERS

**“It is high time to bring the Comprehensive Nuclear-Test-Ban Treaty into force. Let us take the last steps of this long journey and finish one of the longest sought international instruments in the area of non-proliferation and disarmament. We owe it to ourselves, and to future generations.”**

*Joint Statement by Kazakh Foreign Affairs Minister Beibut Atamkulov and CTBTO Executive Secretary Lassina Zerbo, International Day against Nuclear Tests, 2019*

Seventy-five years ago – on 16 July, 1945 – the world’s first nuclear explosion seared the desert of New Mexico. The plutonium-based, implosion-type device left a crater more than 300 metres wide and prompted one of its creators, Robert Oppenheimer, to quote Hindu scripture: “Now I am become Death, the destroyer of worlds.” The U.S. ‘Trinity’ test, carried out at the Alamogordo Test Range, was the first of more than 2,000 nuclear tests to be conducted worldwide over the following half-century. These tests have released vast amounts of radioactive contamination around the globe, altering the very nature of our environment. Traces

of the radioactive isotope carbon-14 created by nuclear bomb tests can be used in carbon dating, and have been found in sea creatures in the very deepest part of the ocean.<sup>1</sup> The UN Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) notes that nuclear testing in the atmosphere, which ran from 1945 to 1980, was the most significant cause of human exposure to man-made environmental sources of radiation. “Each nuclear test resulted in unrestrained release into the environment of substantial quantities of radioactive materials, which were widely dispersed in the atmosphere and deposited everywhere on the Earth’s surface,” UNSCEAR said in its report

The area known as “Darse Denise” at France’s Centre d’expérimentation du Pacifique (CEP) in Mururoa, French Polynesia in 1987. (photo: CEA)

The “Darse Denise” area in 1998 after the closure of the CEP. (photo: CEA)



Tower erected for the joint UK/US Icecap test scheduled for 1993. The tower still remains at the Nevada National Security Site. (Photo: NNSA)

The “Fregate” area of the CEP in Fangataufa, French Polynesia in 1966. (photo: CEA)

The “Fregate” area in 1998 after the closure of the CEP. (photo: CEA)

to the General Assembly in 2000. More than 60 locations worldwide have been used as test sites for nuclear explosions, and in many cases they have left a bleak legacy of ill-health and environmental damage for those directly affected – especially where tests failed to go as planned or the scale of their impact was not foreseen. This legacy of harm is testimony to the vital importance of the Comprehensive Nuclear-Test-Ban Treaty (CTBT). From the 1990s, moves by several nuclear weapon states to halt their own nuclear test explosions helped to set the stage for the global moratorium underpinned by the CTBT since 1996. Fewer than a dozen

nuclear tests have been conducted in the 24 years since the Treaty opened for signature, and only one country, North Korea, has done so this century. Some nuclear test sites have been permanently closed. In 1991 Kazakhstan shut down the huge Semipalatinsk site, which had been the primary testing site for the Soviet Union. The date of its closure, 29 August, was later designated by the UN General Assembly as the International Day against Nuclear Tests (IDANT). France has shut and dismantled all its test sites – the only nuclear weapon state so far to do so. Other locations have been frozen in time. At the Nevada National Security Site in the United States,

a white tower nearly 50 metres tall stands as it was in 1992, in preparation for a joint US-UK underground test called Icecap. The test was cancelled when the United States halted its nuclear weapon testing. But there is no room for complacency. Until eight more specific states with nuclear technology ratify the CTBT, it cannot become legally binding. At a time when the international nuclear non-proliferation and disarmament regime is increasingly under pressure, the only way to secure all of the CTBT’s benefits for all time is to bring the Treaty into force.

<sup>1</sup> Scientific American, “Bomb Carbon” Has Been Found in Deep-Ocean Creatures, May 15, 2019. <https://www.scientificamerican.com/article/bomb-carbon-has-been-found-in-deep-ocean-creatures/>