VIP Observers, Operation Greenhouse
Enewetak Atoll, 1951

Sergio Frutos
2020

Oil on canvas
80 x 148 x 2 cm

Unique
Signed

SF-P 20-12

About this artwork:

Operation Greenhouse, conducted on islands of the Enewetak Atoll, was the fifth American nuclear test series and the first to test principles that would lead to developing thermonuclear weapons,[1] showcasing new and aggressive designs, aiming to reduce the size, weight, and most importantly, reduce the amount of fissile material necessary for nuclear weapons, while increasing the destructive power.

During the DOG test, at Parry Island, located about 20 Km from where the test bomb exploded, a group of VIPs observed the shot from the Officer's Beach Club patio. the shock wave arrived about 45 seconds after the explosion.[2] The atomic mushroom could be seen as far as 160 Km away. Members of all military branches as well as civilians within the Department of Defense, the Atomic Energy Commission and contractors were likely in attendance. The explosion lifted 250,000 tons of soil to an altitude of approximately 10 Km.[3]

The Dog explosion is more popularly known for an image taken of those viewing it than the actual explosion itself; the photograph depicts numerous VIPs wearing safety goggles sitting on the iconic Adirondack chairs while being illuminated by the flash of the detonation. —ironically, the Adirondack chairs are famous for being developed for cures at tuberculosis sanatoriums, when resting outdoors was thought to be a healing treatment: '*The Feel-Good Recliner That Cures What Ails You*'—[4]

The safety goggles worn by all those viewing the test in the picture have become a museum collectors' item.[5] They constitute a rather naive measure of protection: '*Even with them, you would not want to stare directly at the explosion*.' They offered only limited protection and don't offer any defense at all on the rest of the body from exposure to radiation.

The fallout from Shot DOG was heavier than previously had been encountered in a residence situation at a nuclear test site; this was the first time that fallout appreciably increased cumulative doses of support personnel relative to the dose limit. Fallout from Shot DOG, caught in wind shifts in the hours after detonation, doubled back on the atoll and contaminated some of the islands and ships. Of the residence islands, Parry Island received the most with a
peak reading of 0.083 roentgen per hour (R/h). High radiation levels on the forward islands postponed all but the most essential survey and recovery missions until the next day, when the radiation had decayed to acceptable levels.[6]

In 1977, the United States military began decontamination of Enewetak and other islands. During the three-year, US$239 million cleanup process, the military buried more than 80,000 cubic meters in a 110 m wide atomic blast crater, and a concrete dome was constructed over the material.[7]

The government declared the southern and western islands in the atoll safe for habitation in 1980. A report projects that the majority of the atoll will be fit for human habitation by 2026–2027, after nuclear decay, de-contamination and environmental remediation efforts create sufficient dose reductions. However, the Australian Broadcasting Corporation reported that rising sea levels caused by climate change are seeping inside the dome, causing radioactive material to leak out.[8]

1. Antonio Cantó, *La pizarra de Yuri: historias de ciencia al calor del fuego*. Guadalajara ; Madrid: Silente, 2011. ➞
2. L Berkhouse et al., "Operation GREENHOUSE-1951 - DTIC," Final Report Washington: Defense Nuclear Agency, 1983. ➞

3. “Operation Greenhouse,” nuclearweaponarchive.org, August 2003. ➞
4. Debra Judge Silber, “How the Adirondack Chair Became the Feel-Good Recliner That Cures What Ails You,” *Smithsonian Magazine*, August 4, 2021. ➞
5. Amber Davis, “Mystery, ‘Operation Greenhouse’ and Atomic Bomb Goggles,” Museum of Radiation and Radioactivity, Oak Ridge Associated Universities, March 25, 2024. ➞
6. “Operation Greenhouse”. Defense Threat Reduction Agency, 2021. ➞
7. Stephen Schwartz. *Atomic Audit: The Costs and Consequences of U. S. Nuclear Weapons Since 1940*. Brookings Institution Press, 1998. ➞
8. Mark Willacy, “On a Remote Atoll, a Concrete Dome Holds a Leaking Toxic Timebomb,” *ABC News*, November 26, 2017. ➞

About the project: Atom

[…]
“And so?” you ask your guide, *the nice one*.
“So, we learned to make stars,” he answers.
“I thought you told me that this was already like a sun.”
“Oh, yes, but it's not a real sun. Real suns don't work like that. They're much more powerful. So we made real stars.”
“I can't believe it.”
“And what do you think that white powder you've got there and this thermos I've got here are for?”
“The stuff that stars are made of?”
“Yes. And nightmares.”

> Antonio Cantó, “Así funciona un arma termonuclear. (How a thermonuclear weapon works)” *La pizarra de Yuri: historias de ciencia al calor del fuego (Yuri's blackboard: science stories by the fire)*. Guadalajara ; Madrid: Silente, 2011. ➞

The project Atom is based on archival photographs from nuclear tests and revolves around how the ‘atomic age’ is a turning point[1] and to which extent human stupidity can destroy the world we live in. Is possible the survival of humanity and living beings with whom we share the planet as we know it under the current system?.

The phrase “atomic age” has been around since 1945 in reference to the world’s reframing by the newfound human control over nuclear forces. Nuclear weapons prompted both apocalyptic visions of humanity’s annihilation through mutually assured destruction and promises of abundance, progress, and modernity through the utilization of atomic energy.

On the one side, the atrocities of mass destruction in Japanese cities, on Pacific Atolls, and other “testing sites” across the globe forever stamped the self-image of the human as an engineer of death. On the other side, harnessing nuclear power and the emerging nuclear sector were hailed as instruments of national security, a hotbed of technological innovation, a wellspring for electric household energy, and a radically modern means of investigating the natural world and improving human bodies and diets. But soon the smiling side of this Janus face faded, and threat of radioactivity became the scare phenomenon of the second half of the twentieth-century. Radioactive contamination has changed the natural and the social environment to an extent that brings a whole new register into focus: the possibility that life on this planet could end as we know it.[2]

Our current development, predating the planet, following the dictates of capitalism will certainly drive us to mass extinction.[3]

Production of steel requires iron, coal, and an immense amount of air which passes through the mix. Today, all the air on Earth contains traces of radioactive residues from the nuclear tests realized since 1945. The so produced metals contain contamination by radionuclides, interfering with the function of sensitive medical and technical equipment. Until recently,[4] scientists involved in the production of those devices sought metals uncontaminated by background radiation, referred to as low-background steel, low-background lead, and so on.[5]

For many years, for certain sensitive scientific instruments, it wasn't possible to manufacture on Earth steel or other metals without radionuclides, it had to be taken from shipwrecks sunken before 1945, as the German naval fleet that Admiral Ludwig von Reuter scuttled in 1919 to keep the ships from the British,[6] as lead has been frequently taken from roman archeological sites.[7]

Since the nuclear test race in 40s and 50s, the world has advanced in nuclear technology. Today, a nuclear bomb could target a large-scale attack, at a longer range, and with much greater destructive force. People are increasingly concerned about the potential destructive humanitarian outcomes. So long as nuclear weapons exist, it is inevitable that someday they will be used, whether by design, accident, or miscalculation. The danger of use of nuclear weapons is greater than ever before due to proliferation of nuclear weapons, terrorism, and political instabilities.[8]

1. Paul Crutzen and Christian Schwägerl, “Living in the Anthropocene: Toward a New Global Ethos.” *Yale E360*, January 24, 2011. ➞
2. A. Cundy, et al., “Radioactive Fallout as a Marker for the Anthropocene.” In: C. Rosol and G. Rispoli (eds) *Anthropogenic Markers: Stratigraphy and Context, Anthropocene Curriculum*. Berlin: Max Planck Institute for the History of Science, 2022. ➞
3. Troy Vettese, “A Marxist Theory of Extinction.” *Salvage*, January 1, 2019. ➞
4. Sam Westreich, “Good News! Our Steel is No Longer Radioactive!” *Sharing Science* (blog), *medium.com*, December 25, 2021. ➞
5. Ed Conway, “The Eerie Story of Low Background Steel.” Substack newsletter. *Material World*, June 10, 2023. ➞
6. Steven Brocklehurst, “Scapa Flow scuttling: The day the German navy sank its own ships.” *BBC Scotland News*, June 21, 2019. ➞
7. Clara Moskowitz, “Ancient roman metal used for physics experiments ignites science feud.” *Scientific American*, December 18, 2013. ➞
8. Shan Xu and Alicia Dodt, “Nuclear Bomb and Public Health.” *Journal of Public Health Policy* 44, no. 3 (2023): 348–59. ➞