# An Explosive History: The Manhattan Project National Historical Park [C1]

Chi lavorò allo sviluppo della bomba atomica? E perché tanta gente prese parte al progetto? Perché non si lavorò in un'unica sede? Abbiamo chiesto a Becky Burghart, responsabile del sito di Hanford.

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The Manhattan Project National Historical Park (MPNHP) is **split** between three areas in the US. All three played roles in the development of the world's first atomic bomb. At the Hanford site in Washington, plutonium was synthetically produced **out of** uranium; in Oak Ridge, Tennessee, uranium was enriched to make it more potent. Both elements were transported by train some two thousand kilometres to Los Alamos, New Mexico, the project's centre of research and development. One became Little Boy, the bomb **dropped** on Hiroshima on 6 August 1945. The other, Fat Man, destroyed Nagasaki days later. To find out more about the Manhattan Project and its legacy, Speak Up contacted Becky Burghart, Hanford Site Manager at MPNHP. As Burghart explains, the uranium used to make both bombs came from Central Africa. **Becky Burghart (American accent):** The uranium primarily came from the Belgian Congo [Democratic Republic of the Congo]. It was mined, **shipped** to Canada for refining, came into the United States for **further** refinement, and then went to Hanford and Oak Ridge. Hanford produced the plutonium; Oak Ridge enriched the uranium. The reason why they didn't put those two technologies together is because they're all new, and it was close to heavily-populated areas on the East Coast. Then, the enriched uranium and the plutonium were **shipped** to Los Alamos. Then, at Los Alamos they had **to figure out** how to create a weapon, and it's pretty amazing that they **pursued** these two different technologies and were successful.

## STICK AND CARROT

It's hard to imagine why so many people took part in the creation of such a destructive weapon. In fact, only those at the top knew everything. **Becky**

**Burghart:** The **average person** was just doing their job and nobody was allowed to talk to anybody else. They had no idea what they were processing the uranium for, they knew it was for the **war effort** — not much beyond that. These were good jobs, it was a very **patriotic duty** to help the **war effort**. Plus there was the Espionage **Act**: "If you share this information it is **punishable by death**." So, there was the heavy **stick**, but also the **carrot**.

## REMEMBERING HIROSHIMA AND NAGASAKI

2025 marks the 80th anniversary of the atomic bombing by the US of Hiroshima and Nagasaki. The events, which took place on 6 and 9 August 1945 resulted in the deaths of an estimated 210,000 people by the end of 1945, with approximately 140,000 killed in Hiroshima and 70,000 in Nagasaki. For this significant anniversary, both Japanese cities are holding special commemorative events and initiatives with the aim of promoting peace, nuclear disarmament and remembrance of the victims. Hiroshima has launched a special website and various campaigns **to convey** the message of peace and the necessity of **abolishing** nuclear weapons, especially given that there are still over 12,000 nuclear weapons in existence worldwide. Nagasaki is inviting representatives from all countries to its peace memorial, emphasising the importance of learning from history and **overcoming** global divisions.

## DE FACTO SEGREGATION

Around 130,000 workers were employed by the Manhattan Project, including many women and some African American scientists.
However, **hiring practices** were often prejudicial. **Becky Burghart:** There were about ten thousand African Americans who migrated to the Pacific Northwest to work on the Manhattan Project. They might have a **college degree** and could be a scientist or an engineer (but) they were often **pushed only into** construction. And if you were a blue collar worker you couldn't live in Richland (Hanford). So there was a segregated community in East Pasco, where the housing was **substandard**.

## THE COLD WAR

The project ended in 1945 with the bombings of Japan. However, in 1949 the Soviet Union conducted its own successful nuclear test, **triggering** the Cold War. In the 50s, 60s and 70s, Hanford went into its biggest production period as the US and USSR **stockpiled** enough nuclear arms to destroy the entire planet. **Becky Burghart:** [Klaus] Fuchs was a scientist at Los Alamos and he was giving secrets to Russia. And in 1949 Russia created their first atomic weapon, and their facilities were a mirror of the B Reactor: the first production reactor built here at Hanford, so somehow they'd got the negative of the plans. Hanford produced 80 to 90 per cent of the US **supply** of plutonium for the Cold War.

## CLEAN-TECH COMMUNITIES

The Manhattan Project marked the beginning of the National Laboratory network in the US. Around the labs in Los Alamos, Oak Ridge and on the **former** Hanford site, exclusive communities flourish. **Becky Burghart:** There's still a very strong connection to the Manhattan Project in Oak Ridge, Hanford, Los Alamos. These communities are still an epicentre of nuclear research and clean technologies. The laboratory system has expanded to labs across the country, working on a variety of scientific research **endeavours**.

## IS NUCLEAR ENERGY CLEAN?

Nuclear energy is responsible for about 10 per cent of global electricity generation. Despite catastrophes such as Chernobyl, Ukraine in 1986, caused by a **faulty** reactor, and Fukushima, Japan in 2011, caused by natural disaster, many people say that it is safe and even "clean". Unlike fossil fuels (gas, **coal** and oil) nuclear power has a low carbon footprint. It is not renewable, like wind or solar, but is 96 per cent recyclable — if countries recycled it (the US currently does not.) **Power stations** are economical **to run**, but expensive to build. A lot of water is required to keep the reactor cool at a time when there is increasing stress on global water resources. Nuclear **waste** is inevitable,

**hazardous**, and some must be stored for up to a million years to ensure it is safe.

## THE HUMAN FACTOR

Each Manhattan Project National Historical Park site tells its own story. Los Alamos focuses on science and the controversial physicist J. Robert Oppenheimer, but also pays tribute to all those who took part in or were impacted by this world-changing project. **Becky Burghart:** In Los Alamos there's the Bradbury Museum, the Los Alamos Historic Society. There's visitor centres at all three sites, there's great museums. We offer **hikes** with the ranger, bike rides, we walk through downtown Richland, Oak Ridge or Los Alamos. The NPS app is a great way to bring our park that is **spread** across the country together. We have self-guided tours and in Los Alamos a driving tour of all the filming locations for the Oppenheimer film.

## THE ATOMIC SPY

Klaus Fuchs was a British physicist who spied for the Soviet Union. A refugee who was born in Germany, he worked at Los Alamos, where he was responsible for many significant theoretical calculations relating to the first nuclear weapons. Later, he returned to Britain, where he helped develop the hydrogen bomb. Fuchs confessed to trading secrets in 1950, served nine years in prison in the UK, then emigrated to East Germany, where he **resumed** his career. www.nps.gov/mapr/index.htm

# Glossary

- **hiring practices** = pratiche di assunzione
- **stockpiled** = accumulare, fare scorte
- **waste** = scorie
- **further** = ulteriore
- **pursued** = perseguire, portare avanti
- **to figure out** = capire, scoprire
- **war effort** = sforzo bellico
- **Act** = legge
- **to convey** = trasmettere, comunicare
- **abolishing** = abolire
- **endeavours** = progetti, iniziative
- **to run** = gestire, amministrare
- **hikes** = escursioni
- **spread** = estendersi
- **out of** = a partire da
- **dropped** = sganciare
- **punishable by death** = punibile con la morte
- **overcoming** = risolvere
- **college degree** = diploma di laurea
- **coal** = carbone
- **hazardous** = pericolose, rischiose
- **split** = dividere
- **former** = precedente
- **resumed** = riprendere
- **faulty** = difettoso
- **patriotic duty** = dovere patriottico
- **carrot** = carota
- **pushed only into** = spingere in/a
- **substandard** = inferiore agli standard, scadente
- **shipped** = spedire
- **average person** = la persona media
- **stick** = bastone
- **triggering** = scatenare

- **supply** = fornitura
- **Power stations** = centrali elettriche