

The nuclear power

NUCLEAR POWER the 30-second history

US president Dwight Eisenhower's

3-SECOND SURVEY
If splitting the atom could produce energy, it made sense to harness it for the good of the world – but it hasn't always proved easy.

3-MINUTE OVERVIEW
Two nuclear accidents have thrown the development of civil nuclear energy into doubt – Chernobyl in the Ukraine in 1986, where safety systems were shut down, and Fukushima in Japan in 2011, the result of an earthquake and tsunami. In both cases, immediate deaths were relatively low but the land around will not be usable for two generations and the costs of clean-up and precautions at other plants may be immeasurable.

administration first used the phrase 'atoms for peace' as part of an attempt to make nuclear weapons seem a little more hopeful. It was a reaction against the helter-skelter rush to develop nuclear technology during the Second World War, to beat the Nazis to the key. It had been an eventful story since the physicist Ernest Rutherford first bombarded lithium atoms with protons and found that a huge amount of energy was released. The critical experiments were carried out in Germany in 1938 by Otto Hahn and Fritz Strassmann, with Austrian physicist Lise Meitner and her nephew, Otto Frisch. But within a year, the war had begun and many of the world's best physicists were refugees in the United Kingdom or the United States. The first working reactor went live as an experiment in 1942 and was called Chicago Pile-1; this fed into the Manhattan Project designed to make a nuclear bomb. The first working nuclear reactor to actually produce any electricity was the small Experimental Breeder Reactor in Idaho in 1951. Since then, nuclear energy has struggled to live up to early expectations, mainly because of the sheer expense.

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3-SECOND BIOGRAPHIES

ERNEST RUTHERFORD
1871–1937
New Zealand-born physicist whose work led to the first splitting of the atom

OTTO HAHN
1879–1968

German nuclear physics pioneer, who contemplated suicide when he discovered that atomic bombs had been dropped on Hiroshima and Nagasaki

FRITZ STRASSMANN
1902–80

German chemist who helped Otto Hahn discover the phenomenon of nuclear fission

30-SECOND TEXT

David Boyle

In spite of being heralded as 'clean energy', accidents and expense have given nuclear power an uncertain future.

