

# [In bomb, lightweight nuclei are forced to](https://assignbuster.com/in-bomb-lightweight-nuclei-are-forced-to/)

In its attempts to harness the power of the atom, mankind has itself inthe possession of weapons with unbelievable, destructive power. Nations nowhave the ability to destroy entire cities from hundreds of miles away, in onlyminutes. These weapons are nuclear weapons. Nuclear weapons cost the citizensof the United States billions of dollars in taxes each year, the testing andmaintenance of these weapons pose serious health risks, and the actual need forthese weapons is not and has not been around for years.

For the above reasons, I feel the United States should reduce its nuclear arsenal. Nuclear weapons derive their power from the energy released when a heavynucleus is divided, called fission or when light nuclei are forced together, called fusion. In fission, a nucleus from a heavy element is bombarded withneutrons. The nucleus breaks into two pieces, releasing energy and two or moreneutrons.

Each of these neutrons has enough energy to split another heavynucleus, allowing the process to repeat itself. This is the chain reaction thatmakes nuclear weapons possible. In a fusion nuclear device such as a hydrogenbomb, lightweight nuclei are forced to fuse at very high temperatures intoheavier nuclei, releasing energy and a neutron. In order to squeeze the twonuclei together, an atomic fission bomb is usually used. A fusion reactionreleases about four times more energy per unit mass than a fission reaction. The United States supervised the development of the atomic bomb under the codename Manhattan Project, during World War II. The first nuclear chain reactionoccurred in December 1942, at the University of Chicago.

Soon after the firstbomb test, atomic bombs were dropped on the Japanese cities of Hiroshima andNagasaki in 1945. The first hydrogen bomb was developed by a team of UnitedStates scientists and was first tested on November 1, 1952. After World War II, a new age of military strategy occurred. The United States built up massivenuclear weapons arsenals and developed highly sophisticated systems of deliveryand defense. Today’s intercontinental ballistic missiles (ICBMs) carry one ormore multiple, independently targeted reentry vehicles (MIBVs), each with itsown nuclear war head.

Billions of dollars are wasted in taxes, each year, to pay for nuclearweapons. The United States has spent about four trillion dollars for itsnuclear arsenal since government supported work began on the atomic bomb in 1940(Schwartz 1). This number is three times larger than the entire United Statesbudget for World War II (Schwartz 1). This number covers most, but not all, ofthe costs required to develop, produce, display, operate, support and controlnuclear forces over the past fifty years. Anywhere from five-hundred billion toone trillion dollars could be added to this, to cover the remaining costs(Schwartz 1). Nuclear weapons are estimated to have used between one quarterand one third of all military spending since World War II (Schwartz 2).

Today, Congress and the Administration are watching government spending, shrinking andeliminating programs and taking other measures to reduce the deficit. Despitethis, the central feature of national security spending for the past fifty years, nuclear weapons, has been barely touched. The United States spends at leastthirty-three billion dollars a year on nuclear weapons and their relatedactivities (Schwartz 3). Although, about eight billion dollars is being spenton waste management, environmental remediation, dismantlement and dispositionactivities, most of it goes to maintaining, improving and controlling theexisting arsenal and toward the capability to produce new weapons (Schwartz 3). The United States nuclear weapons program poses serious health risks toits citizens.

A combination of secrecy, lax enforcement, reckless neglect andan emphasis on production at the cost of health, safety and the environmentcreated toxic and radioactive pollution at thousands of sites around the country. United States nuclear weapons production facilities have left a mess that, if itcan be cleaned up at all, will take decades and billions of dollars. Also, agreat amount of United States citizens were needlessly exposed to high levels ofradiation. Those most affected were the workers at the Atomic Energy Commission(Department of Energy) weapons facilities (Schwartz 5). Another quarter of amillion military personnel took part in exercises in the Pacific and Nevada testsites, to see their ability to engage the enemy on an atomic battlefield(Schwartz 5). Nuclear weapons are not needed, and have not been, for years.

Whilenuclear weapons have influenced politics, public opinion and defense budget, they have not had a significant impact on