

In bomb, lightweight
nuclei are forced to



**ASSIGN
BUSTER**

In its attempts to harness the power of the atom, mankind has itself in the possession of weapons with unbelievable, destructive power. Nations now have the ability to destroy entire cities from hundreds of miles away, in only minutes. These weapons are nuclear weapons. Nuclear weapons cost the citizens of the United States billions of dollars in taxes each year, the testing and maintenance of these weapons pose serious health risks, and the actual need for these 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 heavy nucleus is divided, called fission or when light nuclei are forced together, called fusion. In fission, a nucleus from a heavy element is bombarded with neutrons. The nucleus breaks into two pieces, releasing energy and two or more neutrons.

Each of these neutrons has enough energy to split another heavy nucleus, allowing the process to repeat itself. This is the chain reaction that makes nuclear weapons possible. In a fusion nuclear device such as a hydrogen bomb, lightweight nuclei are forced to fuse at very high temperatures into heavier nuclei, releasing energy and a neutron. In order to squeeze the two nuclei together, an atomic fission bomb is usually used. A fusion reaction releases 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 reaction occurred in December 1942, at the University of Chicago.

Soon after the first bomb test, atomic bombs were dropped on the Japanese cities of Hiroshima and Nagasaki in 1945. The first hydrogen bomb was developed by a team of United States 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 massive nuclear weapons arsenals and developed highly sophisticated systems of delivery and defense. Today's intercontinental ballistic missiles (ICBMs) carry one or more multiple, independently targeted reentry vehicles (MIRVs), each with its own nuclear war head.

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

Today, Congress and the Administration are watching government spending, shrinking and eliminating programs and taking other measures to reduce the deficit. Despite this, the central feature of national security spending for the past fifty years, nuclear weapons, has been barely touched. The United States spends at least thirty-three billion dollars a year on nuclear weapons

and their related activities (Schwartz 3). Although, about eight billion dollars is being spent on waste management, environmental remediation, dismantlement and disposition activities, most of it goes to maintaining, improving and controlling the existing arsenal and toward the capability to produce new weapons (Schwartz 3). The United States nuclear weapons program poses serious health risks to its citizens.

A combination of secrecy, lax enforcement, reckless neglect and an emphasis on production at the cost of health, safety and the environment created toxic and radioactive pollution at thousands of sites around the country. United States nuclear weapons production facilities have left a mess that, if it can be cleaned up at all, will take decades and billions of dollars. Also, a great amount of United States citizens were needlessly exposed to high levels of radiation. Those most affected were the workers at the Atomic Energy Commission (Department of Energy) weapons facilities (Schwartz 5). Another quarter of a million military personnel took part in exercises in the Pacific and Nevada test sites, 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.

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