What's in the U.S. Nuclear Stockpile Today?

For decades the size of the United States nuclear weapons stockpile remained shrouded in mystery. It was only in 2010 that the Department of Defense declassified the number of stockpiled weapons from 1962 forward. Since reaching a peak of 31,255 weapons in 1967, the stockpile has gradually declined in number.

Today's stockpile is down to about 2,200 weapons, due in large part to the end of the Cold War and the arms-control treaties that followed. However, there was another very important historical factor driving the downsizing of the stockpile: advancements in nuclear weapons science and technology.

When the United States had a nuclear monopoly in the late 1940s, it felt secure enough that it built very few weapons. However, the Soviets tested their first nuclear weapon in 1949, and that, coupled with the need to offset the Soviet Union's huge advantage in conventional forces, drove the need to build up a large, credible nuclear deterrent. The nuclear arms race was on. The U.S. stockpile grew rapidly, and so did advancements in nuclear science and technology.

During the 1950s and '60s, U.S. warhead (and delivery system) technology significantly improved. New weapons, like advanced atomic bombs, thermonuclear weapons (aka hydrogen bombs), and new tactical nuclear weapons (like artillery shells with nuclear warheads) were added to the stockpile. Previous weapons designs, though rendered obsolete, could not be dismantled fast enough and remained in the stockpile.

The next era of nuclear weapons design, which began in the late 1960s, was characterized by fewer major breakthroughs in basic weapons science but more major refinements to existing weapon designs. A primary goal was to design ever-smaller weapons with the maximum explosive yield possible. These refinements also meant weapons systems were more robust, more versatile, and more accurate. In addition, for the first time, they included pioneering safety features to ensure the weapons could be detonated only when authorized by the president. Together, these refinements formed the technical foundation for the modern stockpile. For example, that era produced the B61 nuclear gravity bomb, which entered service in 1966. Today, the B61 is the oldest weapon design in the current stockpile and is now undergoing a life-extension project (LEP).

As this trend continued, fewer types of weapons were developed in the 1970s and '80s, but these weapons were even more sophisticated. As a result, only seven types of weapons make up today's stockpile. Thus, while advancing technology initially allowed the stockpile to grow to tens of thousands of weapons, technology has now allowed it to be sharply reduced yet still do its job—and do it even better.

Los Alamos National Laboratory's contribution to the current stockpile is monumental. Of the approximately 2,200 weapons in today's stockpile, Los Alamos designs account for approximately 90 percent. The Lab designed five of the seven weapon types in the stockpile. In addition to the Air Force's B61, Los Alamos designed the W78 warhead on the Air Force's Minuteman III intercontinental ballistic missiles and the W80 warhead on its cruise missiles. Los Alamos also designed the W76 and the W88 warheads on the Navy's submarine-launched ballistic missiles. Lawrence Livermore National Laboratory designed the W87 warhead, also on the Minuteman III, and the B83 nuclear gravity bomb.

~Alan Carr