

Pantex INFO

High Explosives Operations

The Pantex Plant manufactures main charge high explosives (HE) and other small explosive components. Main charge HE surrounds the plutonium pit in a weapon and compresses the pit into a denser mass, causing a nuclear detonation.

HE Research and Development

The manufacture of HE begins by conducting research and development activities at B&W Pantex to find the best formulations of HE for use in nuclear weapons. Over the years, Pantex engineers and scientists have worked with the DOE/NNSA national laboratories to refine and improve various explosive formulations to ensure the stockpile has safe and reliable HE.

HE Manufacturing

The manufacturing process for HE involves synthesizing energetic materials (explosives) and then formulating the energetic materials with other materials as appropriate. Some of the energetic materials are manufactured at Pantex, while others are procured commercially. Pantex then presses and machines the HE to the configurations needed for use in nuclear weapons.

Safety

Pantex uses a variety of procedures, personal training, and special precautions when working with HE to protect workers and the public. Specialized equipment and tooling is designed to prevent inadvertent reactions, and facilities are designed and built to minimize the effects in the unlikely event of an explosion.

Testing

The testing of HE is a critical aspect of ensuring that nuclear weapons are safe and reliable. Pantex and the design labs test and evaluate the various HEs to determine how they are aging in the stockpile by using a variety of sophisticated chemical and physical testing techniques. In addition, detonation and reaction tests are performed at Pantex to ensure these components continue to perform safely and reliably.

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