

## The Benefits of Moving to an All-W87 ICBM Force

The NNSA is proposing to replace the W78 ICBM warhead with a new W87-1 warhead using a “W87-like” pit.

### A better alternative

Replacing the 200 deployed W78s with some of the 340 W87s in storage would bring several benefits:

1. *Enhanced safety—much sooner:*

A major feature of the W87-1 is that it would use insensitive high explosives (IHE). As NNSA states in its report *W78 Replacement Program (W87-1): Cost Estimates and Insensitive High Explosives*: “Replacing the conventional high explosives (CHE) in the current W78 warhead with IHE is the single most significant weapon system change that improves the warhead’s safety and security.” But the W87 also uses IHE and could be deployed now, not in several decades.

2. *Less demanding pit production schedule:*

The W87-1 would use new plutonium pits, which requires the NNSA to start up and then quickly ramp up its pit production from the current zero (and none since 2013) to 80 per year by 2030. As the NNSA states, this will be “challenging.” The alternative would obviate or significantly delay the need to produce 80 pits by 2030.

3. *More realistic schedule overall:*

The NNSA faces significant schedule challenges in producing the W87-1, as it states in the FY19 Stockpile Stewardship & Management Plan: “Production is predicated on all newly manufactured components and a nuclear material manufacturing modernization strategy that relies on large, multi-year investments in component and material capabilities.”

4. *Reduced NNSA workload:*

The NNSA and the weapons complex are already struggling to manage five simultaneous major work programs on weapons in the stockpile while also building the UPF and trying to establish a pit production capacity.

5. *Much lower cost*

There are two main arguments against deploying an all-W87 force:

1. *The US will lose its ability to upload warheads on ICBMs.*

The MIII missiles can carry three W78 warheads, but only one W87. While the US only deploys one W78 on ICBMs, it could upload another two on each of the 200 missiles—for an additional 600 warheads.

An upload capability provides the United States with a technical and strategic hedge.

If the ICBM force consisted of only W87s and a technical problem emerged, the United States could upload additional W76-1 warheads on Trident missiles.

But uploaded W78s also serve as a technical hedge for the W76-1, because there are no additional W88 warheads to upload. To deal with this issue, the United States could maintain a stockpile of W78s (without LEP) through a program of intensified stockpile surveillance. The W78 is apparently aging more gracefully than expected; the probability that a problem with the W76 *and* a problem with the W78 would emerge simultaneously is small.

The United States also maintains a strategic hedge to allow rapid deployment of additional weapons in response to a significant change in the international security situation—e.g., a Russian build-up. Again, the United States could upload additional W76-1s, as well as ALCMs and bombs.

2. *The United States needs two ICBM warheads to ensure reliability of ICBM leg*

The W87 is assessed to be highly reliable, with high performance margins, so the likelihood of a technical problem is very low. If a problem did emerge, maintaining a stockpile of W78s that undergo intensified stockpile surveillance would be adequate. In addition, one of the primary reasons the Pentagon offers to maintain the ICBM leg is because any attacker must hit so many targets. Does the US need to invest \$10-15 billion for a second warhead just so it can be a target?