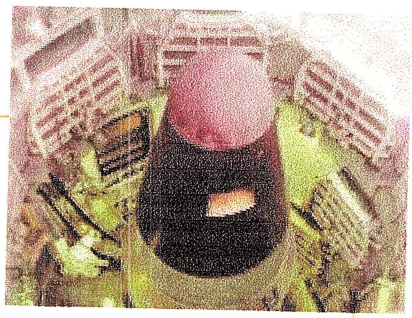
Reliable Replacement Warhead program

Bill Broad has an article in the *New York Times* about the **Reliable Replacement Warhead program**:



> Worried that the nation's aging nuclear arsenal is increasingly fragile, American scientists have begun designing a new generation of nuclear arms meant to be sturdier and more reliable and to have longer lives, federal officials and private experts say.
>
> The officials say the program could help shrink the arsenal and the high cost of its maintenance. But critics say it could needlessly resuscitate the complex of factories and laboratories that make nuclear weapons and could possibly ignite a new arms race.

That isn't how I understand the Reliable Replacement Warhead program.

Scott Burniston, a professional staffer for the House Energy and Water Development Appropriations Subcommittee, explained the program during a **December 2004 Arms Control Association conference**. Congress **shifted $ 9 M** from "Advanced Concepts" (which really was designing new nuclear weapons) to the "Reliable Replacement Warhead" program that would "improve the reliability, longevity, and certifiability of *existing weapons and their components*." [Emphasis mine]

Broad's story relies heavily on quotes from John Harvey, Director of Policy Planning at NNSA, who claimed that "the culminating stages of the program would include 'the full-scale engineering development' of new prototype warheads."

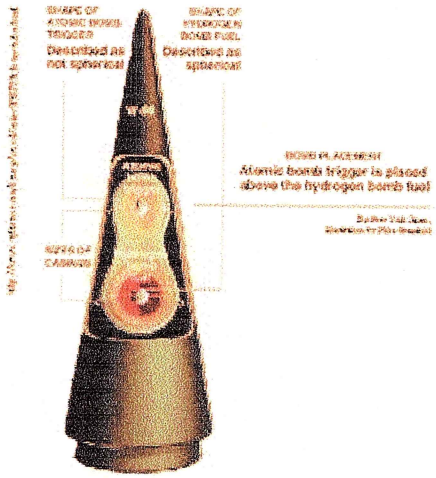
I think Representative Hobson (R-OH) might be a little surprised by that description, since he himself **recently touted the program** as "refurbishing *some existing weapons in the stockpile* without developing a new weapon that would require underground testing to verify the design."

That said, more reliable warhead designs wouldn't necessarily be a bad thing from an arms control perspective.

U.S. nuclear weapon designers during the Cold War traded reliability for certain features that enhance the utility of the design in a first strike. Dick Garwin made **the broad point** in a discussion of the W-88 warhead (*right*):

> The advanced features of the W-88 come at a price. Its narrow conical RV (the Mk-5) poses

serious constraints on the design of the nuclear warhead that it carries. Either substantial payload capacity must be devoted to tungsten or uranium ballast in the nose of the RV, or increased development costs and compromises must be made so that the warhead itself is of small enough diameter to fit well down within the cone. The primary reason for such a narrow cone is to achieve very high accuracy on reentry, in the face of winds.



Since we aren't plannning to bust Russian ICBM silos, it might not be a bad idea to build weapons with more slack.

Such a program would reassure the Russians and the Chinese that we aren't planning to fight a nuclear war, while entertaining the labs with something less controversial than RNEP. Moreover, although U.S. nuclear weapons are *very* reliable, even more reliable warheads would undermine the fiction that the United States needs a large, diverse **reliability stockpile** of nuclear weapons in case a design ages poorly.

· Posted by Jeffrey Lewis · 7 February 05

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Title photograph of Peacekeeper (MX) missile W87/Mk-21 warheads (Reentry Vehicles or RVs) in storage, F.E. Warren Air Force Base, Cheyenne, Wyoming, is used with the generous permission of photographer Paul Shambroom, nukephoto.com.