

# GAO Highlights

Highlights of [GAO-18-129](#), a report to the Subcommittee on Strategic Forces, Committee on Armed Services, U.S. Senate

## Why GAO Did This Study

Weapons in the U.S. nuclear stockpile are aging. NNSA and the Department of Defense undertake LEPs to refurbish or replace nuclear weapons' aging components. Prior LEPs experienced cost overruns, schedule delays, and scope reductions, and prior GAO reports identified the need for NNSA to use EVM and conduct TRAs to address program risks. In 2013, NNSA developed a management approach for LEPs that it regards as an improvement and currently manages three LEPs using its revised approach. NNSA and its contractors conduct the work associated with these LEPs at seven sites across the country.

GAO was asked to review NNSA's management of its LEPs using its revised approach. This report assesses the extent to which NNSA has implemented, consistent with best practices, the use of EVM and TRAs in its management of LEPs. GAO reviewed NNSA directives and compared them to relevant best practices; reviewed LEP documents and reports; and interviewed NNSA program officials.

## What GAO Recommends

GAO is making four recommendations, including that NNSA require an independent team to validate contractor EVM systems used for LEPs and establish benchmarks for technology readiness at LEP decision points. NNSA generally agreed with GAO's recommendations.

View [GAO-18-129](#). For more information, contact Allison Bawden at (202) 512-3841 or [bawdena@gao.gov](mailto:bawdena@gao.gov).

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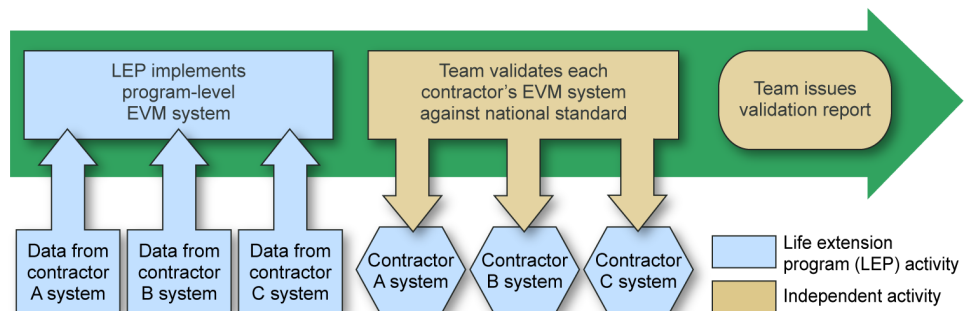
## NUCLEAR WEAPONS

### NNSA Should Adopt Additional Best Practices to Better Manage Risk for Life Extension Programs

## What GAO Found

The Department of Energy's National Nuclear Security Administration (NNSA) has implemented the use of earned value management (EVM) in three life extension programs (LEP) as part of its revised management approach. EVM is a management tool that measures the value of work accomplished in a given period and compares it with the planned value of work scheduled and the actual cost of work accomplished. To better measure program performance, NNSA requires its LEPs to implement an EVM system that meets the EVM national standard. Each of its LEPs has implemented, or is in the process of implementing, a program-level EVM system that incorporates cost, schedule, and earned value data from multiple, independent EVM systems maintained by contractors at different sites. However, NNSA has not adopted the best practice of having an independent team validate EVM systems against the national standard (see fig.), which could help the agency better manage risk. Without requiring validation of EVM systems, NNSA may not have assurance that its LEPs are obtaining reliable EVM data for managing their programs and reporting their status.

### Best Practice for Validating Earned Value Management (EVM) Systems



Source: GAO analysis of best practices and National Nuclear Security Administration documents. | GAO-18-129

NNSA has begun implementing requirements for independently conducting technology readiness assessments (TRA) of LEP critical technologies, but it has not adopted a key best practice that could help the agency better manage risk for LEPs. A TRA is a systematic, evidence-based process that evaluates the maturity of hardware and software technologies critical to the performance of a larger system. NNSA recently established requirements for its programs to conduct independent TRAs of LEP critical technologies. The agency conducted a TRA in 2014 for one LEP in an early stage and subsequently revised its methodology for how its contractors are to assess the technology readiness of weapon system components. However, NNSA has not established specific benchmarks for technology readiness at LEP decision points, consistent with best practices. Without establishing such benchmarks, NNSA may not have assurance that its LEPs have taken appropriate risk mitigation steps to mature critical technologies to meet program cost and schedule commitments.