

# **Essential Capabilities for Nuclear Security: A National Program for Nonproliferation and Verification Technology Development**

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## **Executive Summary and Recommendations**

Achieving nuclear security in the 21<sup>st</sup> century and beyond requires a far more diverse set of national capabilities than during the Cold War. Today's nuclear threats are more geographically dispersed, varied and nuanced. New actors who are not deterred by the threat of nuclear retaliation seek dangerous nuclear materials and must be denied. As America reduces its reliance on nuclear weapons and decreases the size of arsenal it needs new tools and capabilities to keep weapons and materials secure and verify that other nations are complying with similar obligations.

Nuclear weapons, which are receiving sufficient funding and attention, cannot counter the full spectrum of nuclear security challenges facing the nation and the world in the decades ahead. Nor can they counter or deter the most likely nuclear threats to the nation. The technical and human capabilities for nonproliferation, verification and monitoring are being neglected with perilous potential consequences. These capabilities are essential to verify compliance with current and anticipated nuclear arms agreements and to move safely towards a world without nuclear weapons.

However, almost five years after the 2010 Nuclear Posture Review called for a national program on "*expanded work on verification technologies and the development of transparency measures,*" there has been no substantial follow-up. As a consequence, the technical and human capabilities needed to reduce the most likely nuclear threats to the nation are being neglected with perilous consequences.

The missions of nonproliferation and arms verification have for too long been considered part of the "soft power" tools of the diplomatic and arms control communities. Responsibility for them has been scattered across mid- to low level departments within several different agencies, without strong national champions in the interagency bureaucracy or Congress. The transformed nuclear security environment requires that we now consider these capabilities as vital elements of our national security infrastructure. They are potent "smart power" tools offering unique advantages in a rapidly evolving nuclear security environment.

To develop new verification technologies over the next decade, a new program with annual funding on the order of \$125 million to \$150 million should be initiated now. This amounts to far less than 1 percent of the \$185-200 billion identified for nuclear weapons and infrastructure spending over the next decade. To put this modest funding requirement in perspective, the estimated \$1.5 billion cost for the tail-kit of the proposed B61 Mod12 nuclear bomb would be enough to fund a dedicated nonproliferation and verification technology program for a decade. Such a program is affordable at a fraction of the cost of other nuclear infrastructure modernization tasks, and is needed to maintain nuclear

security in an evolving security environment. This modest investment, which could pay back immense dividends, should be made now, even in the pending FY 2016 appropriations process.

Consistent with their nuclear security mission, that should give greater emphasis and funding to nonproliferation programs, the national labs can contribute to the formulation of a national verification and monitoring program. They have the skills and experience to successfully develop the needed technology and procedures and should be assigned a leading role in program implementation. Indeed, the labs have a number of existing or newly developed verification and monitoring technologies that have yet to be widely deployed for the benefit of the nation (see a detailed list in our full report).

### **Recommendations:**

- A new, integrated multiagency program to develop nonproliferation, verification and monitoring technologies for nuclear security should be initiated without delay. The program structure should ensure a common understanding among agency leads for defining the challenges and implementing a national program framework, including policy, diplomacy, operations, and research, development, test and evaluation.
- The program should be funded as a core aspect of the nation's nuclear infrastructure modernization plan, and thus implemented and funded jointly by the National Nuclear Security Administration and the Department of Defense, with guidance from the State Department, intelligence community and National Academy of Sciences.
- Responsibility for these missions should be assigned to high-level officials who have budget and program authority across the nuclear weapons and nonproliferation programs within the Departments of Defense and NNSA. The State Department should assign a senior task force leader to coordinate with the DoD and NNSA program directors.
- The program should maximize international collaboration. Program plans and activities should be a central element of the P-5 dialogue on verification. Other non-nuclear weapons states that support verification and monitoring R&D should also be involved.
- The need for this program was formally codified as an objective in the 2010 Nuclear Posture Review, and has been repeatedly articulated by both the U.S. government and independent assessments. That need should be met now. Failure in the form of a nuclear detonation on American soil (or anywhere) is not an option.

**Our full report**, *Essential Capabilities for Nuclear Security: A National Program for Nonproliferation and Verification Technology Development*, can be downloaded at <http://nukewatch.org/importantdocs/resources/Doyle-EssentialNuclearSecurityReport.pdf>



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