110TH CONGRESS
2D SESSION

# H. R. 2631

IN THE SENATE OF THE UNITED STATES

JUNE 19, 2008

Received; read twice and referred to the Committee on Homeland Security and Governmental Affairs

# AN ACT

To strengthen efforts in the Department of Homeland Security to develop nuclear forensics capabilities to permit attribution of the source of nuclear material, and for other purposes.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,*

**SECTION 1. SHORT TITLE.**

This Act may be cited as the ''Nuclear Forensics and Attribution Act''.

**SEC. 2. FINDINGS.**

Congress finds the following:

(1) The threat of a nuclear terrorist attack on American interests, both domestic and abroad, is one of the most serious threats to the national security of the United States. In the wake of an attack, attribution of responsibility would be of utmost importance. Because of the destructive power of the weapon, there could be little forensic evidence except the radioactive material in the bomb itself.

(2) Through advanced nuclear forensics, using both existing techniques and those under development, it may be possible to identify the source and pathway of a weapon or material after it is interdicted or detonated. Though identifying intercepted smuggled material is now possible in some cases, pre-detonation forensics is a relatively undeveloped field. The post-detonation nuclear forensics field is also immature, and the challenges are compounded by the pressures and time constraints of performing forensics after a nuclear or radiological attack.

(3) A robust and well-known capability to identify the source of nuclear or radiological material in-

tended for or used in an act of terror could also deter prospective proliferators. Furthermore, the threat of effective attribution could compel improved security at material storage facilities, preventing the unwitting transfer of nuclear or radiological materials.

(4)(A) In order to identify special nuclear material and other radioactive materials confidently, it is necessary to have a robust capability to acquire samples in a timely manner, analyze and characterize samples, and compare samples against known signatures of nuclear and radiological material.

(B) Many of the radioisotopes produced in the detonation of a nuclear device have short half-lives, so the timely acquisition of samples is of the utmost importance. Over the past several decades, the ability of the United States to gather atmospheric samples—often the preferred method of sample acquisition has diminished. This ability must be restored and modern techniques that could complement or replace existing techniques should be pursued.

(C) The discipline of pre-detonation forensics is a relatively undeveloped field. The radiation associated with a nuclear or radiological device may affect traditional forensics techniques in unknown ways. In

a post-detonation scenario, radiochemistry may provide the most useful tools for analysis and characterization of samples. The number of radiochemistry programs and radiochemists in United States National Laboratories and universities has dramatically declined over the past several decades. The narrowing pipeline of qualified people into this critical field is a serious impediment to maintaining a robust and credible nuclear forensics program.

(5) Once samples have been acquired and characterized, it is necessary to compare the results against samples of known material from reactors, weapons, and enrichment facilities, and from medical, academic, commercial, and other facilities containing such materials, throughout the world. Some of these samples are available to the International Atomic Energy Agency through safeguards agreements, and some countries maintain internal sample databases. Access to samples in many countries is limited by national security concerns.

(6) In order to create a sufficient deterrent, it is necessary to have the capability to positively identify the source of nuclear or radiological material, and potential traffickers in nuclear or radiological material must be aware of that capability. Inter-

national cooperation may be essential to catalogue all existing sources of nuclear or radiological material.

**SEC. 3. SENSE OF CONGRESS ON INTERNATIONAL AGREEMENTS FOR FORENSICS COOPERATION.**

It is the sense of the Congress that the President should—

(1) pursue bilateral and multilateral international agreements to establish, or seek to establish under the auspices of existing bilateral or multilateral agreements, an international framework for determining the source of any confiscated nuclear or radiological material or weapon, as well as the source of any detonated weapon and the nuclear or radiological material used in such a weapon;

(2) develop protocols for the data exchange and dissemination of sensitive information relating to nuclear or radiological materials and samples of controlled nuclear or radiological materials, to the extent required by the agreements entered into under paragraph (1); and

(3) develop expedited protocols for the data exchange and dissemination of sensitive information needed to publicly identify the source of a nuclear detonation.

**SEC. 4. RESPONSIBILITIES OF DOMESTIC NUCLEAR DETECTION OFFICE.**

(a) ADDITIONAL RESPONSIBILITIES.—Section 1902 of the Homeland Security Act of 2002 (as redesignated by Public Law 110–53; 6 U.S.C. 592) is amended—

(1) in subsection (a)—

(A) in paragraph (9), by striking ''and'' after the semicolon;

(B) by redesignating paragraph (10) as paragraph (14); and

(C) by inserting after paragraph (9) the following:

''(10) develop and implement, with the approval of the Secretary and in coordination with the heads of appropriate departments and agencies, methods and capabilities to support the attribution of nuclear or radiological material to its source when such material is intercepted by the United States, foreign governments, or international bodies or is dispersed in the course of a terrorist attack or other nuclear or radiological explosion;

''(11) establish, within the Domestic Nuclear Detection Office, the National Technical Nuclear Forensics Center to provide centralized stewardship, planning, assessment, gap analysis, exercises, improvement, and integration for all Federal nuclear

forensics activities to ensure an enduring national technical nuclear forensics capability to strengthen the collective response of the United States to nuclear terrorism or other nuclear attacks;

''(12) establish a National Nuclear Forensics Expertise Development Program which—

''(A) is devoted to developing and maintaining a vibrant and enduring academic pathway from undergraduate to post-doctorate study in nuclear and geochemical science specialties directly relevant to technical nuclear forensics, including radiochemistry, geochemistry, nuclear physics, nuclear engineering, materials science, and analytical chemistry; and

''(B) shall—

''(i) make available for undergraduate study student scholarships, with a duration of up to four years per student, which shall include, whenever possible, at least one summer internship at a national laboratory or appropriate Federal agency in the field of technical nuclear forensics during the course of the student's undergraduate career;

"(ii) make available for graduate study student fellowships, with a duration of up to five years per student, which—

"(I) shall include, whenever possible, at least two summer internships at a national laboratory or appropriate Federal agency in the field of technical nuclear forensics during the course of the student's graduate career; and

"(II) shall require each recipient to commit to serve for two years in a post-doctoral position in a technical nuclear forensics-related specialty at a national laboratory or appropriate Federal agency after graduation;

"(iii) make available to faculty awards, with a duration of three to five years each, to ensure faculty and their graduate students a sustained funding stream; and

"(iv) place a particular emphasis on reinvigorating technical nuclear forensics programs, while encouraging the participation of undergraduate students, graduate

students, and university faculty from historically Black colleges and universities, Hispanic-serving institutions, and Tribal Colleges and Universities;

''(13) provide an annual report to Congress on the activities carried out under paragraphs (10), (11), and (12); and''; and

(2) by adding at the end the following new subsection:

''(b) DEFINITIONS.—In this section:

''(1) HISTORICALLY BLACK COLLEGE OR UNIVERSITY.—The term 'historically Black college or university' has the meaning given the term 'part B institution' in section 322(2) of the Higher Education Act of 1965 (20 U.S.C. 1061(2)).

''(2) HISPANIC-SERVING INSTITUTION.—The term 'Hispanic-serving institution' has the meaning given that term in section 502 of the Higher Education Act of 1965 (20 U.S.C. 1101a).

''(3) TRIBAL COLLEGE OR UNIVERSITY.—The term 'Tribal College or University' has the meaning given that term in section 316(b) of the Higher Education Act of 1965 (20 U.S.C. 1059c(b)).''.

(b) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated the sum of $30,000,000 for

each of the fiscal years 2009, 2010, and 2011 to carry out paragraphs (10) through (13) of section 1902(a) of the Homeland Security Act of 2002, as added by subsection (a) of this section.

Passed the House of Representatives June 18, 2008.

Attest: LORRAINE C. MILLER,

*Clerk.*