Follow the Knowledge: Tracking ‘Nuclear-Capable’ People and Organizations

By Andre Buys

It is comforting to believe that if a country abandons its nuclear weapons program, as South Africa did in the early 1990s, a threat to nuclear proliferation has ended. But as Andre Buys, who was closely involved in the South African program, argues, there remains the challenge of tracking all of the individuals and organizations that have the nuclear knowledge to pose a continuing threat.

He calls on the Seoul Nuclear Security Summit to consider creating a registry of “nuclear-capable” people and organizations.

Imagine that tomorrow, Kim Jong Un agreed to the international community’s demands that North Korea dismantle its nuclear weapons program and return to the global non-proliferation regime.

Like South Africa when it reversed gears and wound down its nuclear weapons program 20 years ago, the North would still have scores of “nuclear-capable” individuals whose knowledge of nuclear weapons design, materials and fabrication would remain a threat. Even with inspectors crawling all over the country, how could the world be confident that North Korea was not exporting its nuclear test data to Iran, for example?

Such data could be sent to proliferating states or sold to non-state actors through a variety of channels — memory sticks, torrent bursts by encrypted download over the Internet or direct person-to-person exchanges in North Korea, in Iran or at some innocuous site — an international airport transit lounge, for example.

Such people — and sometimes entire organizations — cannot be easily controlled. Among them, the world’s nuclear weapons states probably have on the order of thousands of such individuals. There is, however, a difference between the total number of skilled personnel mobilized in a nuclear weapons program and the number of scientists and technicians who represent a proliferation threat by virtue of their knowledge and potential mobility.

In the case of South Africa, only about 400 individuals were involved in nuclear explosives or weapons work, of whom an estimated 55 percent had knowledge that would be of proliferation concern. Of these, an even smaller fraction, perhaps 10 to 15 people, were truly walking “bomb-heads” (as nuclear weapons designers at the US Sandia National Laboratory call themselves in lighter conversational moments).1

Most of these people are honorable and would not cross over to the dark side. Some of South Africa’s nuclear bomb-heads became distinguished international civil servants dedicated to nuclear non-proliferation and disarmament in UN agencies. Others, however, were disgruntled and represented a potential conduit through which significant nuclear weapons knowledge could have leaked to state and non-state proliferators.

Ironically, ensuring that such individuals and organizations are accountable after they leave a nuclear weapons program is not even on the agenda at the Seoul Nuclear Security Summit.

The North Korean problem is only the tip of an iceberg that is no less dangerous for not being visible. One study of personnel in Russia’s nuclear weapons cities, for example, found that 62 percent of the Russian experts surveyed in its “nuclear cities” earn less than $50 per month; 14 percent would like to work outside of Russia; and 6 percent express interest in moving “any place at all.”2

Ultimately, the only solution to problems like North Korea’s bomb-heads is one that is global in scope, and sets consistent standards of accountability and tracking for nuclear knowledge embodied in nuclear-capable individuals.

An International Registry

One solution, which I first raised at the Nautilus Institute’s 1540 Workshop in Washington in April 2010, is to create an international registry of nuclear-capable individuals and organizations. UN Security Council resolution 1540 (2004) requires all states to adopt and enforce appropriate and effective laws and enforce effective domestic controls to prevent the proliferation of nuclear, chemical or biological weapons and their means of delivery and related materials. Yet, tracking of individuals and organizations is ad hoc today, and implemented largely via national or bilateral means, and often after the fact, via Interpol.3

Although the Nuclear Suppliers Group (NSG) seeks to contribute to the non-proliferation of nuclear weapons through guidelines for the export of nuclear and nuclear-related dual-use items and technologies, their guidelines do not require registration of nuclear-capable individuals and organizations.

UN Resolution 1540 provides for the establishment of a committee to gather comprehensive data on measures taken by states to implement this resolution. According to the committee’s report presented to the Security Council on July 30, 2008, 155 states had submitted their national reports on the implementation of the resolution to the committee by July 1. Annex XI.B of this report provided an assessment of implementation for 192 member states with regard to nuclear weapons and related materials. It said that 36 states reported having measures in place to undertake reliability checks of personnel working with nuclear weapons and related materials, and 83 states reported having licensing requirements in place for nuclear facilities or personnel who use nuclear-related materials.

Registers of nuclear-capable individuals and organizations can be used to track and monitor them. The non-proliferation regime will be strengthened if such information could be shared between states.

It therefore appears as if many UN member states already gather, license and register their nuclear-capable facilities and personnel. For example, in the case of South Africa, the Non-Proliferation Act (Act No. 87 of 1993) requires those persons in control of any activity with regard to controlled goods or who have controlled goods in their possession or custody or under their control to register with the Council for the Non-Proliferation of Weapons of Mass Destruction. Additional requirements regarding the processes and procedures for registration, including the registration form, have been prescribed in Government Notice No. R.16 of Feb. 3, 2010.

Any person in the United States who engages in the business of either manufacturing or exporting defense articles, defense services or related technical data, is required to register with the Office of Defense Trade Controls. Registration is not required for persons whose manufacturing and export activities are licensed under the amended Atomic Energy Act of 1954. National registration for defense export control appears to be a general practice in many countries. For example, the Montenegro Law on Foreign Trade in Weapons, Military Equipment and Dual-use Items determines that foreign trade in controlled goods may only be conducted by a person who is listed in the Register of Persons for Conducting Foreign Trade in Controlled Goods.

To what extent this is also a common practice in the nuclear field is unclear. For example, Australia’s Weapons of Mass Destruction (Prevention of Proliferation) Act (1995) does not require any registration. Neither does India’s Weapons of Mass Destruction and their Delivery Systems (Prohibition of Unlawful Activities) Act, Act 21 of 2005.

This very preliminary survey suggests that some states might already have registers of nuclear-capable individuals and organizations. Such information can therefore be used to track and monitor the activities of these individuals and organizations. The non-proliferation regime will be strengthened if such information could be shared between states. The questions are: is this achievable in practice, and what are the stumbling blocks to such collaboration?

UN Resolution 1540 calls upon all states to take co-operative action. This requirement was expanded and elaborated on by the International Convention for the Suppression of Acts of Nuclear Terrorism (2005). Article 7-1(b) of the Convention makes provision for exchanging information and co-ordinating administrative and other measures taken to detect, suppress and investigate the offences set forth in Article 2 of the convention and also to prevent such offences.

Confidentiality is a stumbling block to sharing national information regarding nuclear-capable individuals and organizations, because such information would be classified for national security reasons. The public disclosure of such information would also be undesirable as it could make the registered individuals and organizations targets for proliferators. The International Convention for the Suppression of Acts of Nuclear Terrorism (2005) recognizes this danger and therefore does not require state parties to the Convention to provide any information that would jeopardize the security of the state concerned or the physical protection of nuclear material (Article 7-3). It does, however, require states and international organizations to take appropriate measures to protect the confidentiality of any information that they receive in confidence (Article 7-2).

CONCLUSIONS
Denying rogue states access to controlled, or dual-use, items and technologies can delay such programs and make the acquisition of nuclear weapons prohibitively expensive. An area of concern in this regard is the large number of suppliers of components, equipment, materials and services to nuclear weapons programs. Many of these non-state actors have knowledge, skills or capabilities of proliferation concern — as shown in the South African case with the proliferation activities of the network of A.Q. Khan, the father of Pakistan’s nuclear program.

The South African case also highlights the fact that nuclear non-proliferation laws and regulations are necessary, but not sufficient, to prevent illegal nuclear trade. A registry of such individuals and organizations might be established, maintained and used by both national authorities and the international community as a whole.

National registration for defense export control appears to be a general practice in many countries. Such information can therefore be used to track and monitor the activities of these individuals and organizations. The safeguards system of the International Atomic Energy Agency (IAEA) could be strengthened by requiring states to submit their national information to an international register of nuclear-capable individuals and organizations established, maintained, and used by the IAEA. Such a register could be a valuable resource to monitor and investigate suspicious affiliations and trade relations.

Finally, must we wait for hundreds of thousands of people to die in a nuclear 9/11 before the international community realizes that the time has come to abolish nuclear weapons altogether?

The complete abolition of all nuclear weapons might not be possible or even desirable in the foreseeable future. The deterrence value of nuclear weapons cannot be denied. It can be argued that nuclear deterrence in the Cold War era prevented a Third World War.

Between maintaining strategic deterrence and realizing nuclear abolition, an achievable and urgent goal is to ensure that all nuclear weapons, their technology and materials are secured and safeguarded. To this end, the Seoul Nuclear Security Summit should consider establishing an international registry of nuclear-capable individuals and organizations.

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FURTHER READING