III. Russian–US cooperation on reducing nuclear risks

SHANNON N. KILE

In 2013 Russia and the United States restructured the legal arrangements that had formed the basis of their joint efforts after the cold war to control or destroy former Soviet weapons of mass destruction (WMD) and related material and delivery vehicles. The two countries also completed the implementation of a landmark 20-year-old deal to reduce Russia's excess stock of highly enriched uranium (HEU) used in nuclear weapons.

Changes to the Cooperative Threat Reduction programme

The Cooperative Threat Reduction (CTR) programme—often called the Nunn–Lugar programme after US senators Sam Nunn and Richard Lugar, who co-sponsored the original authorizing legislation in 1992—played the central role in the US Government's efforts to reduce the WMD-related dangers that accompanied the dissolution of the Soviet Union.[1] Launched under the auspices of the US Department of Defense (DOD), its immediate aim was to provide bilateral US financial and other assistance to Belarus, Kazakhstan, Russia and Ukraine for strengthening the security of nuclear materials in these countries. The core CTR programme was later supplemented by a wide range of related programmes around the world aimed at reducing the risk of the spread of chemical, biological, radiological and nuclear (CBRN) weapons and preventing them from falling into the hands of terrorists. Several major initiatives are currently administered by the US departments of Energy, State and Homeland Security.[2] The focus of CTR in recent years has been on biological threat reduction.[3]

On 14 June 2013 Russia and the USA announced that the 'umbrella agreement' that had provided the financial and legal framework for implementing CTR programme activities in Russia since 1992 would be allowed to

[1] For a documentary history of the programme see Blanton, T. and Savranskaya, S. with Melyakova, A. (eds), 'Nunn–Lugar revisited', National Security Archive Electronic Briefing Book no. 447, 22 Nov. 2013, <http://www2.gwu.edu/~nsarchiv/NSAEBB/NSAEBB447/>. On the origins and development of the programme see Lockwood, D., 'Nuclear arms control', *SIPRI Yearbook 1993*, pp. 566–71; and Anthony, I. and Fedchenko, V., 'International non-proliferation and disarmament assistance', *SIPRI Yearbook 2005*.

[2] For a comprehensive overview of US CTR programme activities see Nikitin, M. and Woolf, A., *The Evolution of Cooperative Threat Reduction: Issues for Congress*, Congressional Research Service (CRS) Report for Congress R43143 (US Congress, CRS: Washington, DC, 8 July 2013).

[3] Woolf, A. F., Kerr, P. K. and Nikitin, M. B. D., *Arms Control and Nonproliferation: A Catalogue of Treaties and Agreements*, Congressional Research Service (CRS) Report for Congress RL33865 (US Congress, CRS: Washington, DC, 15 July 2013), p. 22. See also chapter 8, section IV, in this volume.

expire.[4] The agreement would be replaced by a new bilateral protocol to the 2003 Framework Agreement on a Multilateral Nuclear Environmental Programme in the Russian Federation (MNEPR).[5] The MNEPR had historically provided a legal framework under which states could assist Russia with spent nuclear fuel safety and radioactive waste management.[6]

According to the US Department of State, the new framework authorized Russia and the USA to continue working 'in a broad array of nuclear security and nonproliferation areas'.[7] This included projects to improve the security of nuclear and radiological material, to convert research reactors from using HEU to low-enriched uranium (LEU) fuel and to dismantle nuclear submarines.[8]

The new framework did not provide for the continuation of all CTR programme activities. Specifically, Russia would 'assume the costs [of] and complete without further U.S. assistance' two key areas of bilateral cooperation: ballistic missile elimination and chemical weapon destruction. Projects in both areas had been high funding priorities for the US DOD's CTR programme in Russia. They provided essential support for joint work in eliminating surplus and obsolete strategic offensive arms and in constructing facilities needed to destroy Soviet-era chemical weapons. This work had been winding down in recent years as key goals and benchmarks were achieved.[9] Russia and the USA pledged to 'continue to discuss potential technical cooperation on chemical weapons destruction' but stipulated that this would be done outside the new agreement.[10]

In addition to the programmatic changes, an important factor behind Russia's push for the new agreement had to do with its longstanding dissatisfaction with the liability provisions contained in the 1992 umbrella

[4] White House, 'United States and the Russian Federation sign new bilateral framework on threat reduction', Fact sheet, 17 June 2013, <http://www.whitehouse.gov/the-press-office/2013/06/17/fact-sheet-united-states-and-russian-federation-sign-new-bilateral-frame>.

[5] US Department of State, 'A new legal framework for U.S.–Russian cooperation in nuclear nonproliferation and security', Fact sheet, 19 June 2013, <http://www.state.gov/r/pa/prs/ps/2013/06/210913.htm>; and Framework Agreement on a Multilateral Nuclear Environmental Programme in the Russian Federation, signed 21 May 2003, entered into force 26 July 2007, <http://www.oecd-nea.org/law/mnepr-ratification.html>.

[6] The MNEPR was negotiated to allow European partners to give funds to non-proliferation and radiological clean-up projects in Russia under the G8 Global Partnership.

[7] US Department of State (note 5).

[8] US Department of State (note 5); and Guarino, D. P., 'New U.S.–Russian security deal greatly scales back scope, experts say', Global Security Newswire, 18 June 2013, <http://www.nti.org/gsn/article/new-us-russian-security-deal-greatly-scales-back-scope-experts-say/>.

[9] E.g. the amount of funding requested by the DOD in 2014 for strategic offensive arms elimination had declined sharply because most elimination activities necessitated by the 2010 New START treaty had been completed. Nikitin and Woolf (note 2), pp. 19–20. For a summary and other details of New START see annex A, section III, in this volume. On chemical weapon destruction see chapter 8, section II, in this volume.

[10] US Department of State (note 5).

agreement.[11] These provisions had shielded the US Government and its contractors from financial and legal liability in the Russian judicial system for accidents that could occur during CTR programme work in Russia.[12] In contrast, the Russian–US protocol to the MNEPR signed on 14 June set out more limited liability protection for threat-reduction work as well as stronger provisions by which the Russian Government could seek legal redress.[13]

In the view of some observers, the new bilateral framework for threat reduction activities reflected the evolution of Russian–US relations since the end of the cold war, in the direction of a more equal partnership.[14] Russia had indicated in October 2012 that it did not want to continue the CTR agreement, in part because it no longer needed the USA's financial assistance to carry out programme activities on its own territory and did not wish to be seen as a recipient of international assistance. Russian officials were also increasingly unwilling to risk revealing sensitive information to the USA by providing access to defence-related facilities and personnel.[15]

The Russia–USA highly enriched uranium deal

After the end of the cold war the disposal of HEU became a high priority for Russia and the USA, with both countries holding stocks of the material in excess of their defence requirements. The disposal of HEU from the Russian nuclear weapon complex was a particularly urgent priority in the wake of the dissolution of the Soviet Union. This challenge was addressed by the landmark 1993 Russian–US HEU Purchase Agreement, sometimes called the 'Megatons to Megawatts' programme.[16]

The HEU Purchase Agreement is widely considered to be one of the most successful post-cold war cooperative efforts to reduce the risk of the illicit diversion of weapon-usable nuclear material. Under the terms of the deal, Russia agreed to blend down 500 tonnes of HEU from nuclear weapons into LEU over a 20-year period and send it to the USA, where it was made

[11] Agreement between the Russian Federation and the United States of America concerning the Safe and Secure Transportation, Storage, and Destruction of Weapons and the Prevention of Weapons Proliferation (CTR Umbrella Agreement), signed 17 June 1992, expired 17 June 2013.

[12] Woolf, Kerr and Nikitin (note 3). There had also been disputes at the operational level over the tax-exempt status of US contractors in Russia.

[13] Nikitin and Woolf (note 2), p. 12; and Horner, D. and Collina, T. Z., 'Nunn–Lugar program scaled back', *Arms Control Today*, vol. 43, no. 6 (July/Aug. 2013).

[14] Horner and Collina (note 13).

[15] Guarino, D. P., 'Nunn–Lugar program could survive despite Russian objections, experts say', Global Security Newswire, 11 Oct. 2012, <http://www.nti.org/gsn/article/ctr-program-could-survive-despite-russian-objections-experts-say/>.

[16] Russian–US Agreement Concerning the Disposition of Highly Enriched Uranium Extracted from Nuclear Weapons, signed and entered into force 18 Feb. 1993, <http://www.armscontrol.ru/start/docs/heu93t.htm>.

into fuel for nuclear power plants. The agreement was implemented through a contract between the US Enrichment Corporation (USEC) and Techsnabexport (Tenex), a subsidiary of the Russian state nuclear energy company Rosatom, which acted as executive agents for the US and Russian governments. The original terms of the contract were adjusted in 2002 to incorporate a more flexible market-based pricing mechanism.[17] The total value of the completed deal was approximately $17 billion.[18]

In December 2013 the implementation of the deal concluded with the arrival in the USA of a final shipment of down-blended LEU from Tenex's enrichment plant in Zelenogorsk, Krasnoyarsk Krai. The fuel was sent to the USEC's gaseous diffusion plant in Paducah, Kentucky, to be fabricated into fuel assemblies for US nuclear power plants. Beginning in 1995 USEC purchased more than 14 000 tonnes of such LEU—equivalent to approximately 20 000 eliminated nuclear warheads, which involved more than 250 shipments from Russia. Since then, approximately one-half of US nuclear power generation facilities have used the down-blended uranium fuel from Russia, which accounted for nearly 10 per cent of the electricity produced in the USA.[19]

The completion of the HEU deal did not mark the end of Russian–US commercial arrangements for nuclear fuel purchases. In 2011 USEC entered into a multi-year contract with Tenex for the supply of Russian LEU until 2022, at approximately one-half the level supplied by Tenex under the HEU deal. Unlike the HEU deal, however, the quantities supplied under the new contract will come from Russia's commercial enrichment activities rather than from down-blending of Russian weapon material.[20] Russia had rejected US proposals to extend the HEU deal without a commitment by the USA to blend down its own stock by a commensurate amount. Statements by Russian officials have suggested that the 500 tonnes of HEU eliminated under the deal may have been slightly less than half of Russia's total Soviet-era stockpile.[21]

[17] 'Megatons to Megawatts program concludes', World Nuclear News, 11 Dec. 2013, <http://www.world-nuclear-news.org/ENF-Megatons-to-Megawatts-program-concludes-1112134.html>.

[18] Scoblic, J. P., 'United States, Russia approve new "HEU Deal" contract', *Arms Control Today*, vol. 32, no. 6 (July/Aug. 2002).

[19] USEC, 'Final Megatons to Megawatts shipment completes historic program', Press release, 10 Dec. 2013, <http://www.usec.com/news/final-megatons-megawatts-shipment-completes-historic-program>; 'Megatons to Megawatts 2.0: Russia eyes new nuclear project with US energy industry', RT.com, 11 Dec. 2013, <http://rt.com/news/heu-leu-agreement-over-037/>; and 'Megatons to Megawatts program concludes' (note 17).

[20] USEC (note 19).

[21] Gutterman, S., 'Uranium shipment signals end of US-Russian nuclear deal', Reuters, 14 Nov. 2013. For estimates of Russian and US stockpiles of civil and military HEU see chapter 6, section X, in this volume.