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US-RUSSIA NUCLEAR SECURITY: MOVING TOWARDS INSECURITY?

Hina Pandey
Associate Fellow, CAPS

United States and Russia hold 90% of the world's nuclear arsenal. Their nuclear dynamics had greatly shaped the Cold War for fifty years and has continued to dominate the nuclear order. It is recognized that both the countries are primarily responsible for maintaining global nuclear security. To their credit, both have concluded many bilateral and multilateral nuclear arms control and security arrangements. An important one of these is the agreement to secure weapons grade plutonium, a material of which they are the largest possessors. Concluded in 2000, the agreement marked a major milestone. But, in 2016, it stands suspended.

Under the, 2000 Plutonium Management and Disposition Agreement (PMDA), both the US and Russia were required to dispose of 34-metric tonnes of weapons grade plutonium. To simplify it means that each side was to get rid of a large surplus of existing weapons grade plutonium that could have been used to build approximately 17, 000 nuclear weapons. The disposed plutonium was to be used to power commercial power reactors to generate electricity. This was a significant step as it eliminated the possibility of 'weapons grade nuclear material' to ever to be used again for military purposes. It further made the entire process of nuclear arms reduction irreversible[1]

Additionally, the PDMA also included non-proliferation guarantees. The agreement specified that the plutonium received for conversion shall also not be used for any other military purpose such as '*research, development, design or testing*'[2] . Furthermore, Article VI of the agreement also prohibited the plutonium from being exported to a third party unless it was done in a written format under international safeguard assurances including the CPPNM agreement.

On 19 October 2016, the Russian Duma passed a bill that called for the suspension of the PMDA[3] which brings an end to a 16 year long nuclear security cooperation between the US and

Russia. Russia claims that the change in the American approach in conducting the plutonium disposition had compelled it to take this step. The text of the agreement clearly specified the ways that to be employed while disposing the weapons grade plutonium. It specified a Mixed Oxide Fuel (MOX) route, implying that, that plutonium is to be used to fabricate mixed-oxide (MOX) fuel that would then be used in existing nuclear power reactors. In 2010, the agreement was amended to change the specified disposition methods. Russia abandoned the option of using MOX and continued with a alternative approach that required irradiating plutonium in its fast-neutron reactors, BN-600 and BN-800. The United States decided not to pursue this and committed itself completely to the MOX route. Over the years, the MOX route had become costly for the US. The MOX Fuel Fabrication Facility at the Savannah River Site in South Carolina had encountered serious problems that escalated the cost of project to more than $30 billion. This has implications for the future of the programme for the US. It was estimated that the US would have to spend about a million dollars per kilogram to dispose off its weapon-grade plutonium. This was viewed as impractical and the US decided to terminate the facility and adopt a 'dilute and dispose' method which is not specified in the PDMA. The change is approach is allowed only through the written consent of both the parties. The US possibly expected that Russia would reciprocate the gesture and allow the US to change its disposition method. Russia, on the contrary, objected to it and as alleged that the 'US not following its obligations under the agreement.'[4]It is apprehended by Russia, that the change in approach which requires the US to dilute the plutonium and bury it, might prove to be counterproductive, as the buried plutonium could possibly be retrieved for use in weapons-grade material [5]

It is reported that the agreement can be saved the with the fulfilment of certain conditions, as put forward by Russia. These conditions include geopolitical demands such as reduction of US military infrastructure and troops in countries that joined NATO after September 2000. Russia has also demanded the lifting of all US sanctions against herself, that were imposed after the Crimean episode two years ago.[6] It must be noted that the demands raised by Russia are not directly linked to the agreement pertaining to plutonium reduction. It is clear that souring of US-Russia relations have begun to impact the nuclear security issues. The prelude to the big picture had already become evident when Russia chose to boycott the Nuclear Security Summit 2016.

The suspension of the agreement is worrisome if viewed in the light of doubts pertaining to the ongoing trend of modernization in the Russian nuclear forces. The recent *Bulletin of Atomic Scientists' Nuclear Notebook* has highlighted that there seems to be a shift in the

nuclear trend in Russia, which is- moving away from 'shrinking of its nuclear arsenal'[7]. A concern on Russia's lowering of nuclear threshold is also raised.

In matters of nuclear security, the presence and participation of the US and Russia as the two most important pillars in the evolving global nuclear security architecture matters. In-fact the balance in maintaining/ sustaining nuclear security can only be secured when both cooperate. Together, both the countries have been responsible for other most successful arms control and nuclear risk reduction measures. Their Cooperative Threat Reduction (CTR) programme, for instance, had remarkable success in deactivating over 7,600 warheads, destruction of 2,300 missiles and securing of 24 nuclear weapons storage sites[8] Similar to the suspended programme, US-Russia had engaged bilaterally in reduction of 500 tonnes of Highly Enriched Uranium (HEU) from Russia. The HEU had been down blended to LEU, which was further used by the United States to fuel its nuclear power reactors. For approximately 15 years this served as the fuel for nuclear reactors in the US that generated nearly 10% of all US electricity.[9] The endeavor contributed to nuclear security as the process involved the elimination of nuclear weapons material. It was concluded successfully in 2013.

But, in the context of the PMDA, the US too doesn't appear to be in a cooperative mood for now. While the nuclear agenda for the US in the eight years has been reducing nuclear dangers, the abrupt change in approach towards the plutonium reduction agreement, as opposed to what is specified in the agreement was bound to invite opposition from Russia. It was reported that US did not even communicate with Russia directly before announcing for a change in approach. Those who observe US-Russia nuclear dynamics largely agree that this could be the worst development for the future of arms control. Additionally, it must be observed that while the UNSC has recently passed a resolution on treaty banning nuclear tests for strengthening the taboo on nuclear use; the reinforcement of belief of US[10]-Russia in their nuclear arsenal for national security might prove to be counterproductive.

(Disclaimer: The views and opinions expressed in this article are those of the author and do not necessarily reflect the position of the Centre for Air Power Studies [CAPS])

Notes

[1] What Is The U.S.-Russia Plutonium Management And Disposition Agreement?, October 04, 2016, Available at http://www.rferl.org/a/plutonium-management-and-disposition-agreement/28031672.html, Accessed on October 19, 2016.

[2] Unofficial Composite Text Of The United States-Russian Federation 2000 Plutonium Management And Disposition Agreement , As Amended
Available at
http://www.state.gov/documents/organization/213493.pdf, Accessed on October 19, 2016.

[3] Russian News, "The State Duma The Applause Passed A Law To Suspend The Agreement With The US On Plutonium Disposition" October 19, 2016, Accessed on October 22, 2016, Available at http://en.news-4-u.ru/the-

state-duma-the-applause-passed-a-law-to-suspend-the-agreement-with-the-us-on-plutonium-disposition.html,

[4] PavelPodvig, "Can the US-Russia Plutonium Disposition Agreement Be Saved?",*Bulletin of Atomic Scientists, April 2, 2016* Available at http://thebulletin.org/can-us-russia-plutonium-disposition-agreement-be-saved9389, Accessed on October 20, 2016.

[5] Alexey Arbatov , " Ominous End of the Russia-U.S. Plutonium Agreement", October 17, 2016, Available at http://carnegie.ru/commentary/?fa=64869&mkt_tok=eyJpIjoiT1RRMVpEWTRaREJtWXpNeCIsInQiOiJsTlJnSjZxMG85TE5DZ3p6NWJDQjM5NnNtYXp1Zml2eTgzUGtGSjl6YVRVRGNFZ0U2RVNxK1Z0MmtYeGNtQ3c3YmNZbzhhV1cyNFRkTjhxS0ZoMTFyZHNuNFdGaXpXZk5NczJwb3pZQXVRST0ifQ%3D%3D, Accessed on October 20, 2016.

[6] Russia Suspends Plutonium Agreement with USA, *World Nuclear News,* October, 04, 2016, Available at http://www.world-nuclear-news.org/NP-Russia-suspends-plutonium-agreement-with-USA-04101601.html, Accessed on October 09, 2016.

[7] Hans M. Kristensen and Robert Norris, " Russian Nuclear Forces, 2016" , *Bulletin of Atomic Scientists,* Vol. 72, No.3, pp.125-134.

[8] Fact Sheet, "The Nunn-Lugar Cooperative Threat Reduction Program Securing and Safeguarding Weapons of Mass Destruction", *American Security Project,* Available at https://americansecurityproject.org/ASP%20Reports/Ref%200068%20-%20The%20Nunn-Lugar%20Cooperative%20Threat%20Reduction%20Program.pdf, Accessed on October 12, 2016.

[9] Megatons to Megawatts program concludes, *World Nuclear News,* Available at http://www.world-nuclear-news.org/ENF-Megatons-to-Megawatts-program-concludes-1112134.html, Accessed on October 17,2016.

[10] It is reported that US too is undergoing a nuclear overhaul in its nuclear forces .