



THE SOVIET NUCLEAR LEGACY: URANIUM TAILINGS IN CENTRAL ASIA

After the collapse of the Soviet Union, the newly independent states of Central Asia have confronted a number of unresolved issues related to the Soviet legacy of Weapon of Mass Destruction (WMD) development programs. One of the most serious problems that has public health, environmental and security risk dimensions is the presence across the region of former uranium production and storage facilities such as abandoned uranium mines, related uranium tailings and waste rock dumps. These sensitive unprotected sites contain highly hazardous radioactive and toxic wastes, which were byproducts of uranium mining and reprocessing. Over the years, the Soviet republics of Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan played an important role in the Soviet military-industrial complex hosting a large uranium industry that extracted local uranium and processed uranium transported from Eastern Europe. Uranium tailings that had emerged as a result of inadequate Soviet waste storage practices were not properly maintained in the 1990s and have become a source of grave concern for the Central Asian region and the international community. According to UN experts, uranium production residues in Central Asia amount to 800 million tons, while the International Atomic Energy Agency (IAEA) estimates that this quantity approaches one billion tons.

The majority of uranium waste sites are located close to the densely populated areas, and communities living near them are insufficiently aware of immediate and long-term health dangers. Humans and livestock are exposed to elevated background radiation and radionuclides, as well as toxic heavy metals such as lead, arsenic and cadmium, as people collect scrap metal at such radioactive dumps, graze cattle on contaminated lands, use polluted water and eat unsafe local dairy products and meat. Although there are no cases of acute radiation sickness, regional health officials report that uranium and toxic wastes are the cause of high incidence of different cancer types and a rising number of other illnesses. The health effects also include higher rates of birth anomalies, miscarriages and stillbirths in the affected areas. In fact, negative health effects of uranium tailings are poorly studied, and more medical field monitoring and observation missions are necessary. At the same time, local residents should be educated about existing and potential risks through public-awareness campaigns.

It is also important to note that uranium tailings are situated in the areas that are prone to natural disasters in the immediate vicinity of the Syr Darya, one of the region's major

transboundary rivers, and its tributaries that supply water from upstream Tajikistan and Kyrgyzstan to downstream Uzbekistan and Kazakhstan. Earthquakes or floods near uranium tailings may result in landslides in areas along these rivers leading to contamination of water by radionuclides and toxic substances from radioactive waste dumps. This would be a major catastrophic event that would affect all the Central Asian countries damaging their population's health, environment and national economies. The Ferghana Valley, the agricultural center of the region shared by Kyrgyzstan, Tajikistan and Uzbekistan, would be hit especially hard by environmental consequences of such an emergency situation.

Another factor that is often overlooked is a potential security threat posed by poorly guarded and unprotected radioactive waste storage sites. Radiological security threats in Central Asia stem from the fact that after the break-up of the Soviet Union the regional states lost control over part of radiation sources used for industrial, medical, and research purposes. Such sources contain highly radioactive materials, including cesium-137, strontium-90, cobalt-60, and iridium-192. According to some reports, a certain amount of radioactive sources was buried in uranium tailings and other radioactive dumps. If highly radioactive materials from these sites fall into wrong hands, they can be used to manufacture radiological dispersal devices, or the so-called "dirty bombs". That is one of the region's most serious security risks related to nuclear terrorism. Dirty bombs do not have enough power to inflict mass casualties or serious destruction. However, they can cause radioactive contamination of large territories, leading to public health risks, environmental degradation and lost economic opportunities. Most uranium tailings located in the region are in a dire state and require significant remediation and rehabilitation activities. In late 1990s and 2000s, the Central Asian countries lacked financial, technical and regulatory resources, such as specialized equipment, infrastructure, practical regulations, trained and experienced personnel, to solve the issues associated with Soviet-era radioactive wastes. Sporadic measures taken at the national level and limited support from various countries and international donors were not sufficient. Regional efforts received a major boost after the International Forum on Radioactive Waste Management in Central Asia held in Geneva on June 29, 2009 that issued a joint declaration calling for cooperation in addressing the issue of uranium tailings and for urgent transition to concrete

action plans. Between 2010 and 2012, as part of the \$8.4 million World Bank-funded project, 150,000 cubic meters of waste were relocated from one of Kyrgyzstan's most accident-prone tailings in Mailuu-Suu and reburied in a safer location. A global recognition of the problem came with the adoption of the UN General Assembly resolution No. 68/218 on December 20, 2013. The document calls upon the international community to assist the Central Asian states in resolving the issue and emphasizes the importance of regional cooperation.

In June 2015, the European Bank for Reconstruction and Development (EBRD) established the "Environmental Remediation Account for Central Asia" at the request of the European Commission. This account is regarded as a vehicle to channel international efforts towards finding long-lasting solutions to the uranium legacy problem, and in 2016, the European Union contributed €16.5 million to make the fund operational. The money will be used to finance remediation of high-priority sites such as Mailuu-Suu and Min-Kush in Kyrgyzstan and Taboshar in Tajikistan. In January 2017, the EBRD signed relevant framework agreements with Kyrgyzstan and Tajikistan, and rehabilitation works in these countries are set to begin in 2017 in collaboration with the IAEA and Russia. A major challenge for international donors will be to ensure transparency of the remediation projects and improve accountability of the participating Kyrgyz and Tajik government institutions. As for the two remaining states, Uzbekistan cooperates with the IAEA to procure laboratory equipment, arrange training of staff and conduct onsite exercises, as well as explores ways to work with the EBRD, while Kazakhstan as the most advanced Central Asian economy is expected to address the issue on its own.

Nevertheless, cross-border cooperation between the Central Asian states is needed to promote effective and efficient remediation of uranium tailing sites in accordance with international safety standards and practices. In this regard, the parties can use the provisions of the Central Asian Nuclear Weapon Free Zone (CANWFZ) Treaty. The treaty preamble states that one of the CANWFZ purposes is "promoting cooperation in the environmental rehabilitation of territories affected by radioactive contamination", and Article 6 specifically deals with the Soviet nuclear legacy. Establishing a cooperative mechanism in the CANWFZ framework would enable its member states to pursue a more coordinated policy in such areas as safety and security of uranium tailings and radioactive waste disposal.

Written by Dauren Aben,
Eurasian Research Institute, Kazakhstan

Politics, Foreign Affairs and Security

- The President of Turkmenistan, Gurbanguly Berdimuhamedov, decreed to appoint the Deputy Chairman of the Cabinet of Ministers, Orazmyrat Gurbannazarov, as interim Deputy Prime Minister for Economic Affairs. Byashimmyrat Hojamammedov, who previously held this position, was dismissed for health reasons.
- During his official visit to Budapest, the President of Russia, Vladimir Putin, and the Prime Minister of Hungary, Viktor Orban, discussed further prospects for strengthening trade and economic cooperation between the two countries. During his visit to Hungary, the President of Russia also held a meeting with the President of Mongolia, Khaltmaagiin Battulga. The parties discussed plans for further expansion of cross-border trade.
- During his official visit to Beijing, the President of Tajikistan, Emomali Rahmon, and the President of China, Xi Jinping, discussed the ways to boost economic cooperation between the two countries under the Belt and Road Initiative focusing on the development of transport, energy, ports and network infrastructure. As a result of bilateral talks, the two Presidents signed a Joint Statement on establishing a comprehensive strategic partnership. Moreover, during the visit, a series of cooperation documents, including a bilateral cooperation plan, and agreements on science, agriculture, energy, infrastructure, human resources and media, were signed.
- On the sidelines of the 9th BRICS Summit held in Xiamen, the leaders of Brazil, Russia, India, China and South Africa discussed prospects for strengthening their strategic partnership in priority areas such as trade and investment, politics and security giving their attention to the situation in the Middle East and the Korean Peninsula and the fight against international terrorism. The parties also exchanged views on the work of the key BRICS instruments, namely, the New Development Bank and the Contingent Reserve Arrangement.
- The Foreign Ministry of Russia reported that the U.S. authorities seized buildings of the Russian Consulate General in San Francisco and the Trade Representation in Washington. Moreover, the access to the building of the Trade Representation's branch in New York was also closed for the Russian representatives. The U.S. State Department announced that the decision to close three Russian diplomatic properties was made in response to Russia's order to dismiss the U.S. diplomatic staff in the country.

- The Head of the Revolutionary Guards' Air Defence of Iran, Farzad Esmaili, reported that the country's home-grown air defense system, namely, the Bavar-373 system, designed to match the Russian S-300 was tested. It is planned that Iran's first long-range missile defense system is set to be operational by March 2018.

Economy, Finance and Energy

- The Managing Director of Pars Special Energy Economic Zone for Customs Affairs of Iran, Ahmad Pour Heidar, reported that the South Pars oil and gas fields exported over 17.8 million tons of gas condensates since last year, which is 31% growth. The value of the exported gas condensates reached \$6.9 billion. The goods were exported to China, Japan, South Korea, India, Hong Kong, Indonesia, Turkey, Egypt, UAE and Kuwait.
- The Kazakh Energy Minister, Kanat Bozumbayev, and the U.S. Deputy Secretary of Energy, Dan Brouillette, signed an agreement in Astana to cooperate on nuclear energy. According to the agreement, the United States and Kazakhstan will work together to advance civil nuclear power recognizing its importance as a zero-emissions source for electricity.
- On the sidelines of the 9th BRICS Summit, Russia's oil company Rosneft and China's energy company Huaxin signed an agreement on strategic cooperation and a long-term contract for oil supplies. The documents were signed by Rosneft's Chief Executive Director, Igor Sechin, and Huaxin's President, Chen Qiutu. The agreement provides the implementation of joint production projects in Western and Eastern Siberia and envisages cooperation between the two companies in areas such as oil refinery and petrochemistry, trade in oil and oil products.
- Kazakhstan inaugurated a Low Enriched Uranium (LEU) Bank backed by the International Atomic Energy Agency (IAEA) and located at the Ulba metallurgical plant in the city of Ust-Kamenogorsk. The facility will store up to 90 tons of LEU and will serve as a last-resort mechanism to provide confidence to countries to obtain LEU for the manufacture of fuel for nuclear power plants in case of an unforeseen, non-commercial disruption to their supplies.
- The Chinese Customs Administration reported that the trade turnover between Iran and China stood at \$20.8 billion in the first seven months of 2017. It was also noted that China's exports to Iran in the 7-month period amounted to \$10.428 billion, which is 21.3% increase year-on-year, while China's imports from Iran reached \$10.433 billion worth of goods, which

is 32% more compared to the 7-month period of 2016.

- The Turkish Statistical Institute reported that the trade turnover between Iran and Turkey stood at \$5.32 billion during the first half of 2017, which is 10.9% increase compared to the same period of 2016. The trade turnover between the two countries reached \$873.89 million in June 2017. In June 2017, the exports of Turkey to Iran reached \$250.5 million, while the imports reached \$623.392 million.
- The Head of the Kyrgyz National Energy Holding, Aibek Kaliev, reported that Uzbekistan paid off \$9.3 million to Kyrgyzstan for electricity for the autumn-winter period of 2017-2018. It was also stated that the water level in the Toktogul reservoir of 19.6 billion cubic meters allows the export of electricity to the neighboring countries. The total amount of Kyrgyzstan's exports to Uzbekistan should amount to 1.2 billion kWh at 2 cents per 1 kWh.
- Turkmenistan's Parliament adopted the Law on cotton growing, which defines the legal, economic and organizational basis of cotton-growing in the country and regulates relations related to the turnover of raw cotton and cotton products. In 2017, over 545,000 hectares were allocated for cotton and it is planned to harvest 1,050,000 tons of raw materials in Turkmenistan.

Society and Culture

- On September 2, Uzbekistan marked the Day of Remembrance of Islam Karimov, the first President of the country. Samarkand hosted a ceremony of opening a monument for Islam Karimov. The current President of Uzbekistan, Shavkat Mirziyoyev opened the monument.
- According to the Global Firepower rating for 2017, the Uzbekistan's army outstripped all other countries of the Central Asian region in terms of the strength of the armed forces. Uzbekistan ranked 48th out of 133 countries in the list, while Kazakhstan is on the 55th place. The army of Turkmenistan ranked 86th, Kyrgyzstan - 108th, while Tajikistan took 112th place in the rating.
- The opening ceremony of the new training and methodology center for sustainable development goals (SDG) took place at the Institute of International Relations in the Turkmen Foreign Ministry. The creation of the center is aimed at educating young people on the importance of SDGs. The ceremony was attended by the Head of UNICEF in Turkmenistan, Shaheen Nilofer, who launched the center on behalf of all UN agencies.