In Search of a Chemical Weapons-Free World: Three Decades of Abolishing Chemical Weapons

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Summary

The CWC will celebrate its 25th anniversary in 2022 since its 1997 entry-into-force. The accomplishments of its implementation agency, the OPCW, have been many including safe and verified elimination of over 70,000 metric tons of chemical agents and millions of weapons in eight declared possessor states. However, recent uses of deadly chemical agents in Syria and assassination attempts in Malaysia, Russia, and Britain have presented new challenges to building a world free of a whole class of WMDs. This article will briefly cover this history and point toward new priorities for strengthening this important abolition regime.

Chemical Weapons Demilitarization

Within the next two years, the world will witness a historic turning point – the completion of over three decades of international efforts to safely destroy all declared chemical weapons stockpiles. This has been an enormous and costly task, far beyond what the negotiators of the 1993 Chemical Weapons Convention (CWC) envisioned during their twelve years of treaty drafting and discussion.

But this long wait will be well worth the time, finances, and public debates since the 1980s. Over 72,000 metric tons[1] of deadly chemical agents and millions of varied weapons systems will have been safely and irreversibly destroyed by the eight declared possessor countries – Albania, India, Iraq, Libya, Russia, South Korea, Syria, and the United States. Of those eight countries, Albania, South Korea, India, Iraq, Syria, Libya and Russia have completed destruction of their declared arsenals. Syria, however, may not have declared its entire stockpile.[2] These complicated and dangerous destruction processes have also been verified on-site by the inspectors of the Organization for the Prohibition of Chemical Weapons (OPCW) in The Hague, the international organization tasked with implementing and verifying the CWC.

Russia and the United States accounted for 95% of the declared stockpiles and have been the most challenging stockpiles to destroy. Russia declared 40,000 metric tons of chemical agents at seven large stockpiles, six of which were west of the Urals in the Eurasian part of Russia, and one stockpile east of the Urals on the steps of Siberia. The United States declared 28,600 metric tons at nine stockpiles spread out from Kentucky in the East to Utah and Oregon in the

western US. The US total also included a stockpile on Johnston Atoll, 750 miles west of Hawaii in the Pacific Ocean.

The United States was the first to unilaterally initiate its CW destruction process, seven years before the CWC entered into force. In 1990 the US began operating a prototype incinerator on Johnston Atoll to burn a stockpile of 1,842 metric tons of mustard agent. These weapons had been secretly moved years earlier from the forward deployment in Germany and Okinawa, and were successfully incinerated over a decade. Combined with the second US incinerator which began operating in Tooele, Utah, the US destroyed 1,436 metric tons of chemical agents before the CWC entry into force in April, 1997.

The Soviet Union and the United States had met in the mid-late 1980s to discuss the mutual elimination of their chemical weapons stockpiles, judging them too old and dangerous for any military use and endangering local communities due to leakage and proliferation risks. This resulted in the Wyoming Agreement in 1989 whereby both countries agreed to "a bilateral verification experiment and data exchange related to prohibition of chemical weapons."[3] While this bilateral effort was delayed with the breakup of the Soviet Union two years later, the US organized its first on-site inspection of the easternmost of Russia's chemical weapons stockpiles, Shchuch'ye, in the Kurgan Oblast with 5,400 metric tons of nerve agent weapons in the summer of 1994. This visit, hosted by the Russian chemical corps, included two US representatives, an assistant secretary of defense, and the head of the US Chemical Material Agency, illustrated the lack of security at old Soviet chemical weapons stockpiles, the lack of any demilitarization plan, and Russia's inability to fund any timely destruction process.

The US, with support from Germany, Britain, and other like-minded countries, worked closely with Russia throughout the 1990s to provide much-needed security at two stockpile sites, Shchuch'ye and Kizner, which held portable chemical weapons subject to theft and proliferation, and to determine the most appropriate, Russia-based technologies for safe stockpile destruction. By 2002, twelve years after the US had started its own CW destruction operations, Russia began neutralizing mustard and lewisite agents in bulk containers at Gorny in the Saratov Oblast. Fifteen years later, in 2017, Russia completed the safe destruction of its 40,000 MTs of chemical agents with neutralization, but left much of its neutralized toxic liquid product, 10-15 times the original volume, in storage for later remediation.

Much of Russia's successful demilitarization of its large chemical weapons stockpile was due to the financial and technical support by the Global Partnership Against the Spread of Weapons and Materials of Mass Destruction. Also important was the public outreach and education efforts at each stockpile site organized by Green Cross Russia and Green Cross International with the support of the US Cooperative Threat Reduction (CTR) program.[4] This community outreach effort included the establishment of local Citizen Advisory Commissions (CACs), public hearings, a global annual dialogue in Moscow, and independent environmental and public health risk assessments.

The other six declared possessor countries – Albania, India, Iraq, Libya, South Korea, and Syria – all have interesting stories to tell, too long for this article, but these countries all deserve credit for completing their CW destruction programs between 2007 and 2018. All countries missed deadlines under

the CWC, but most States Parties understood that the most important goal was to protect workers, citizens, and the environment rather than meet diplomatic deadlines.[5]

The United States will be the last declared possessor country to complete its CW destruction program, currently on track and approved by the OPCW States Parties to finish by September, 2023. Two chemical weapons stockpiles still remain in the US – Pueblo, Colorado and Blue Grass, Kentucky, originally holding 2,349 and 475 metric tons respectively. The Pueblo stockpile started operations in 2015 and has now safely destroyed 1,902 metric tons of agent, 80% of its stockpile. The Blue Grass stockpile started operations in 2019 and has now safely destroyed 165 metric tons, 35% of its stockpile. Major challenges still remain, including the use of Static Detonation Chambers (SDCs) at both stockpiles for destroying badly corroded weapons, but the neutralization first-stage process has gone relatively well at both stockpiles, and the bioremediation second stage process at Pueblo has also been successful. Super-Critical Water Oxidation (SCWO), a new technology for processing chemical weapons, chosen as a second-stage process at Blue Grass, has unfortunately not been successful, so this has slowed the schedule to date.[6]

Challenges Ahead

CWC Universality: Although declared chemical weapons stockpile destruction, including on-site OPCW verification, will come to a close in the next few years, the OPCW still faces many challenges. First to note is that four countries still have not joined the CWC – Egypt, Israel,[7] North Korea, and South Sudan. Of these four, North Korea – is known to possess an estimated 5,000 metric tons of chemical weapons, most weaponized and deployed along the north/south border. Both Egypt and Israel are suspected of harboring secret stockpiles, and South Sudan is not known to have any chemical weapons. A fifth country, Taiwan, which has one of the world's largest chemical industries, potentially subject to OPCW commercial industry inspections, has not been allowed to join multilateral organizations due to China's "One China" policy. So the OPCW inspectorate could very well have new stockpiles and industries to inspect, should these last CWC holdouts finally join the treaty.

Chemical Assassinations: At least three assassination attempts have happened with chemical agents in recent years. North Korean citizen and half-brother of the North Korean leader, Kim Jong-un, Kim Jong Nam, was assassinated with a VX nerve agent in the Kuala Lumpur airport in 2017. It is clear that North Korea was behind this criminal act and violation of the CWC; while North Korea has neither signed nor ratified the Convention, such blatant use of a banned and deadly chemical agent is a violation of the prevailing norms against the use of chemical agents.

A second assassination attempt took place in Salisbury, the United Kingdom in 2018 when a former Soviet spy, Sergei Skripal, and his daughter, Yulia Skripal, were attacked with Novichok, a Soviet-era military-grade nerve agent, but fortunately survived. Unfortunately, several other British citizens were also impacted by this agent, with one woman dying later that year. Britain has identified two Russian spies as the assassins, but they remain in Russia today. Russia, speaking since then at the OPCW's annual Conference of States Parties and its Executive Council meetings in The Hague, has denied any relation with this attempted assassination, but most informed observers and many States Parties identify this as a clear violation of the CWC.

A third prominent assassination attempt took place in Omsk, Russia in 2020 of a Russian political candidate, Alexei Navalny, once again using another version of Novichok nerve agent. Fortunately, Navalny was flown to Germany for medical treatment and survived. Once again, most observers identify Russia as the assassin, but Russia has continued to deny any involvement and has accused Germany and other countries as the culprits. The OPCW and States Parties have smartly updated the CWC Schedules of banned chemical agents and precursors to include Novichok, and have requested Russia to clarify its past CWC declarations which have not included any Novichok information.

Chemical Warfare: Since 2012 Syria has used chemical weapons, primarily Sarin nerve agent and chlorine, a dual-use chemical, to attack rebel forces and civilians in the deadly Syrian civil war. The use of chemical weapons became most apparent when the eastern suburb of Damascus, Ghouta, was attacked with nerve agent bombs in August, 2013, killing a reported 1,400 Syrians. Under international pressure, especially from Russia and the United States, Syria joined the CWC two months later and declared 1,308 metric tons of banned chemical agents and precursors to the OPCW. This stockpile, the great majority of which were precursor chemicals, was removed by ship from Syria in 2014 and safely neutralized on board the modified US Merchant Marine ship, MV Cape Ray, and incinerated ashore in Germany, Finland, Britain, and the United States.[8]

The accession of Syria and the timely destruction of its declared chemical stockpile was a major step forward for the OPCW and the global ban on chemical weapons. However, it quickly became apparent that Syria had either not fully declared its chemical stockpile and/or illegally imported precursor chemicals for additional weapons production. Syria continued to attack rebel forces and civilians in Syria with Sarin nerve agent and chlorine barrel bombs, validated by OPCW reports of the Investigation and Identification Team (IIT) and the Fact-Finding Mission (FFM), along with United Nations reports of the Joint Investigative Mission (JIM).[9]

Although Syria continues to deny any use of chemical weapons over the past decade, some non-governmental groups have estimated that some 300 strikes with chemical agents have been made by Syrian military forces.[10] Syria has also been criticized by the OPCW Director General Fernando Arias, as well as his predecessor DG Ahmet Uzumcu and the Declaration Assessment Team (DAT) for incomplete declarations to the OPCW of chemical weapons and related facilities and activities; this year DG Arias, for example, stated again in his monthly report to the Executive Council on Syria that because of "…identified gaps, inconsistencies, and discrepancies that remain unresolved, the Secretariat assesses that the declaration submitted by the Syrian Arab Republic still cannot be considered accurate and complete in accordance with the Convention,"[11]

Because of Syria's failure to adequately respond to ongoing questions regarding its required declarations and the numerous reported uses of chemical weapons in Syria, the 25th CWC Conference of States Parties (CSP-25) voted, 87-15, to sanction Syria, withdrawing its voting and other rights as a CWC State Party.[12] And over the past year, Syria has refused to respond to a number of OPCW inquiries and has recently refused visas to OPCW inspectors.

The blatant use of chemical weapons in Syria, in direct violation of Syria's obligations under the Chemical Weapons Convention, along with the continued denial of such actions by

Syria, and its refusal to abide by its clear obligations under the Convention have led to a number of split votes on major issues including the OPCW annual budget, the funding of investigative mechanisms, and the sanctioning of Syria. Fortunately, all votes have passed by large majorities of States Parties, but these actions appear to be efforts by a few States Parties to erode the authority of the world's most universal arms control agreement.

Final Points

The Organization for the Prohibition of Chemical Weapons (OPCW) will celebrate its 25th anniversary in 2022 since its entry-into-force in 1997. The world has now witnessed the success of its century-old global effort to ban chemical weapons and a whole class of weapons of mass destruction. The OPCW is now almost universal and is just a couple of years away from completing the safe and sound elimination of over 72,000 metric tons of deadly chemical agents, and millions of weapon systems, in eight declared possessor states.

As this treaty regime, along with the States Parties, has matured over these years, we've learned many lessons including the need for transparency and accountability; the need to not only verify the destruction of declared chemical weapons, but assure that chemical weapons do not reemerge; the need to improve public outreach and education; the need to identify treaty violations and to work closely with States Parties and the United Nations for accountability; and the need to liaison with other treaty regimes and multilateral organizations in order to create a much safer and sustainable world.

As we move closer, to complete the elimination of all declared chemical weapons stockpiles, the OPCW must focus more on old and abandoned chemical weapons, those that were either buried on land or dumped at sea. All States Parties must survey their own territories and waters for these toxic legacies of the two world wars and other chemical weapons use over the past century.[13] And we all must push forward with efforts to promote peaceful uses of chemistry and universality of the treaty. Only with all countries and regions as part of the Chemical Weapons Convention can we be sure that weapons stockpiles have been eliminated and that there is no proliferation or diversion from chemical laboratories, industry, and facilities.

Endnotes:

1 See the OPCW total, 72,304 metric tons, as of November 17, 2021, https://www.opcw.org/media-centre/opcw-numbers. This total has varied slightly over time when on-site measurements are taken during destruction processes.

2 Chemical Weapons: Fact Sheets and Brief, Arms Control Association, August 2020, https://www.armscontrol.org/factsheets/Chemical-Weapons-Frequently-Asked-Questions.

3 Goldblat, Jozef, and Thomas Bernauer. "The US–Soviet Chemical Weapons Agreement of June 1990: Its Advantages and Shortcomings." Bulletin of Peace Proposals, vol. 21, no. 4, Sage Publications, Ltd., 1990, pp. 355–62, http://www.jstor.org/stable/44481537.

4 See www.gpwmd.com for background on the Global Partnership.

5 For more information on CWC deadlines for stockpile destruction, see Part IV(A) of the CWC Annexes on "Principles and methods for destruction of chemical weapons," https://www.opcw.org/chemical-weapons-convention/annexes/verification-annex/part-iva-destruction-chemical-weapons-and.

6 For additional information on these processes, see https://www.peoacwa.army.mil/.

7 Israel has signed the CWC in 1993 but has yet to ratify the treaty; it regularly attends the annual CWC Conference of States Parties (CSP) in The Hague and recently contributed to the new OPCW ChemTech Center construction.

[8] For more information on this destruction process, see Paul F. Walker, "Syrian Chemical Weapons Destruction: Taking Stock and Looking Ahead," Arms Control Today, December 2014, https://www.armscontrol.org/act/2014-12/features/syrian-chemical-weapons-destruction-taking-stock-looking-ahead.

[9] See the OPCW on investigations of alleged use of chemical weapons at https://www.opcw.org/work/responding-use-chemical-weapons.

[10] See, for example, Bellingcat at https://www.bellingcat.com/, and the Global Public Policy Institute at https://www.gppi.net/.

[11] OPCW, "Report by the Director General: Progress in the Elimination of the Syrian Chemical Weapons Programme," EC-98/DG.24, 24 September 2021, page 4, paragraph 19, https://www.opcw.org/sites/default/files/documents/2021/09/ec98dg24%28e%29.pdf.

[12] See the CSP-25 final report for specifics on this vote, 87 States Parties in favor, 15 opposed, and 34 abstentions, paragraph 9.24, https://www.opcw.org/sites/default/files/documents/2021/04/c2505%28e%29.pdf.

[13] Many of the former chemical weapons possessor states have been removing and destroying "non-stockpile" chemical weapons, especially in the former warring regions of Europe. But the United States is the only country which has produced a public report on suspected burial sites of chemical weapons. See U.S. Army Program Manager for Chemical Demilitarization, "Survey and Analysis Report: Second Edition," Project Manager for Non-Stockpile Chemical Materiel, December 1996.