

## Syrian Chemical Weapons Crisis - The Challenges

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### Summary

In October 2013 Syria joined the CWC and became the 190th State Party. Syria was coerced to join the regime and after this the OPCW-UN Joint Mission in Syria has established a verification and elimination process of the chemical weapons in Syria.

### Alleged Use of CW - Joint Investigation

The incidents of alleged Chemical Weapons (CW) attack which killed more than 1400 innocent civilians in Syria in August, 2013 has raised the concerns of the international community. Following this, the United Nations (UN) Secretary-General requested the Organisation for the Prohibition of Chemical Weapons (OPCW), the watchdog body for the Chemical Weapons Convention (CWC) to assist in the conduct of an investigation. For the first time in the history of the CWC, which entered into force in April 1997, the OPCW faced such an unprecedented situation to investigate the alleged use of CW in a country that is not even party to the Convention.

The request is consistent with the Relationship Agreement between the OPCW and the UN, which provides for the cases involving a State Not Party to the Convention, wherein the OPCW shall closely cooperate with the Secretary General of the UN. Subsequently, a joint UN, OPCW and World Health Organisation (WHO) Verification Mission was launched in August, 2013. The investigation team concluded in its report that "chemical weapons have been used in the ongoing conflict between the parties, also against civilians on a relatively large scale". However, the report could not pinpoint the perpetrators of the CW attack.

### Syria Joins the CWC

On 14 September 2013, a framework for elimination of Syrian CW was agreed upon by the United States and the Russian Federation. Syria was coerced to join the Convention against the background of extraordinary circumstances. On 14 October 2013, the CWC entered into force for Syria,

making it the 190th State Party to the Convention. Consequently, the OPCW-UN Joint Mission in Syria was established in order to achieve the timely verification and elimination of the Syrian CW programme in the safest and most secure manner possible.

Syria established the CWC mandated National Authority, headed by Deputy Foreign Minister Faisal Mekdad and submitted to the OPCW its formal initial declaration covering its CW programme. Such declarations provide the basis for planning systematic, total and verified destruction of declared CW and CW production facilities. Syria has submitted to the OPCW, its inventories of Chemical Weapons Storage Facilities (CWSFs), that include munitions, chemical agents and precursors; information regarding components of binary weapons; site diagrams for CWSFs, including buildings and their current condition; site diagrams and process flow diagrams for certain Chemical Weapons Production Facilities (CWPFs); information on the nature of activities conducted and current status of CWPF buildings and equipment, including fixed and mobile mixing and filling facilities; information about the nature of activities at research and development facilities; and information about the test and evaluation sites.<sup>1</sup>

### **Syrian CW Declarations**

Syria declared 41 CW facilities at 23 sites. The declared installations thus comprise 18 CWPFs (including fixed filling facilities), 12 CWSFs, 8 mobile filling units, and 3 CW-related facilities. According to the OPCW report, Syria declared just under 1,300 metric tonnes of chemical warfare agents: approximately 1,000 metric tonnes of Category 1 CW (largely binary chemical weapon precursors) agents and precursors listed in Schedule 1 of the CWC;

approximately 290 metric tonnes of Category 2 CW, which refers to all warfare agents other than the ones listed in Schedule 1; and approximately 1,230 unfilled chemical munitions, i.e., Category 3 CW.<sup>2</sup>

### **CW Verification Joint OPCW - UN Mission**

The Joint OPCW-UN Mission has inspected 21 of the 23 sites declared by Syria, and 39 of the 41 facilities located at those sites. The Joint Mission also verified the functional destruction of critical equipment for all of its declared CW production facilities and mixing and filling plants, rendering them inoperable.<sup>3</sup> The Syrian CW programme is based primarily on binary systems which means two toxic substances have to be brought together to create a highly toxic chemical warfare agent. The chemicals are stored in bulk containers and drums; they are not contained within bombs, shells or warheads and there are no explosives associated with them. A quantity of mustard agent ready-to-use chemical warfare agent is also stored in bulk containers and drums, not in munitions.<sup>4</sup>

### **Transportation and Destruction of CW**

Normally, destruction of CW in accordance with CWC would entail setting up of CW destruction facility in Syria. That would take a very long time. Therefore, to meet the destruction timeline set for 30 June 2014, for the reasons of safety, security and on Syria's request, it was decided to transport the CW out of Syria and destroy them on the sea in international waters. The transportation and subsequent destruction poses a great challenge to the international community.

The Syrian CW bulk containers and drums are all being securely packed and loaded into

standard shipping containers. The containers are then transported to Latakia port for loading on to the Danish and Norwegian cargo ships (MV Ark Futura and MV Taiko, respectively). Such toxic chemicals are routinely transported around the world and there are specific laws and regulations in place regarding their safe transportation. The cargo ships have additional capacity to deal with chemical spills or emergencies and a special chemical response team is available, along with expert chemical response personnel from Finland.<sup>5</sup>

Once all of the containers have been collected from Latakia and stored aboard the MV Taiko and MV Ark Futura, one of these ships will sail to the Italian port of Gioia Tauro. At the port, those shipping containers holding certain Priority 1 chemicals will be transloaded to a US ship, the MV Cape Ray. The remaining chemicals will be transported to commercial facilities in Finland, the UK, and the USA for destruction. The facilities in Finland and the USA were selected through a solicitation process conducted by the OPCW.

### **CW Destruction Process**

Some Priority 1 chemicals will be destroyed through a two-step process. The first step, hydrolysis, will occur at sea on board the MV Cape Ray. The chemicals will not be dumped or buried in the sea at any stage, and therefore no chemicals will be released into the environment. The US Department of Defense has installed two Field Deployable Hydrolysis Systems (FDHS) on board the MV Cape Ray, which have been designed on the basis of technology used over the past four decades in the US chemical weapons destruction programme to hydrolyse chemical warfare agents. The FDHS uses water, sodium hydroxide (NaOH), sodium hypochlorite (NaOCl) and heat to hydrolyse the chemicals with 99.9 percent effectiveness.

All of the effluent resulting from the hydrolysis process will be safely stored on board the MV Cape Ray.<sup>6</sup>

The remaining chemicals removed from Syria, and the effluent produced by the hydrolysis process on board the MV Cape Ray, will be destroyed at commercial facilities. For this purpose, the OPCW published a Call for Proposals for Transport, Treatment and Disposal of Hazardous and Non-Hazardous Organic and Inorganic Chemicals, Effluents and Related Materials. Following technical and commercial evaluation of the bids, the preferred bidders were announced and contracts have been signed with two companies – Ekokem Oy Ab from Finland and Veolia Environmental Services Technical Solutions from the USA. Two Priority 1 chemicals will be transported to the UK for destruction in a commercial facility at Ellesmere Port. The effluent created by the hydrolysis of one of the Priority 1 chemicals aboard the MV Cape Ray, will be destroyed at a government facility in Germany.<sup>7</sup>

### **Security during Transportation**

Security poses a great challenge while transporting the CW in Syria and on the seas. Naval vessels from Denmark, Norway, and the UK are providing continuous security to the cargo ships until the chemicals are off-loaded. Naval vessels from the People's Republic of China and the Russian Federation are providing security to the cargo ships while in Syrian territorial waters.

### **Progress on Transportation & Destruction of CW**

The OPCW-UN Joint Mission has confirmed that as on 25 April 2014, the overall portion of chemicals removed from Syria to 86.5% of the total, including 88.7 % of the Priority 1 chemicals and 84.3% Priority 2 chemicals.

The Joint Mission has also confirmed that approximately 87% of Syria’s chemical weapons material has been removed or destroyed in-country. This development will contribute to meeting the 30 June 2014 target set by the OPCW Executive Council for the completion of Syria’s entire chemical weapon programme.

<sup>5</sup> Ibid.

<sup>6</sup> Ibid

<sup>7</sup> Ibid

## Conclusion

The Syrian CW crisis has thrown many challenges to the international community: investigation of alleged use of CW by a non-party state; investigation team operating in the proximity of fighting zones; verification of CW stockpile; destruction of production facilities; transportation of CW securely by road to Latakia port and then onwards to the ships at sea; destruction of CW in international waters aboard a ship; and the short time lines set right by the international community to achieve the total destruction of Syrian CW.

Note: Information Sourced from  
www.opcw.org and the web

## Endnotes:

<sup>1</sup> Zanders, Jean Pascal (2013), “Syria’s CW Declaration: One third larger than assumed”, 31 October 2013, Available online at <http://www.the-trench.org/syrias-cw-declaration-one-third-larger-than-assumed/>

<sup>2</sup> Ibid.

<sup>3</sup> OPCW (2013), “Syria completes Destruction Activities to render inoperable Chemical Weapons Production Facilities and Mixing/Filling Plants”, 31 October 2013, Available online at <http://www.opcw.org/news/article/syria-completes-destruction-activities-to-render-inoperable-chemical-weapons-production-facilities-a/>

<sup>4</sup> OPCW (2013), “Frequently Asked Questions: Syria”, Available online at <http://www.opcw.org/special-sections/syria-and-the-opcw/frequently-asked-questions/>