

After Ghouta: verifying chemical disarmament in Syria

The UN report into the alleged use of chemical weapons in the Ghouta district of Damascus, released on 14 September, has confirmed that on 21 August 2013 the nerve agent sarin was used there on a ‘relatively large scale’.

According to US estimates in the wake of the attack, over 1,400 people were killed—including hundreds of children. The UN’s report states that the attack involved the use of ‘surface-to-surface rockets capable of carrying significant chemical payloads’. Inspectors mandated by the UN secretary-general to investigate the incident reported that several such rockets were identified and recorded at three sites in Ghouta that they visited. ‘These were carefully measured, photographed and sampled,’ the inspectors noted, with sarin found in ‘a majority of the rockets or rocket fragments.’

In addition, UN inspectors reported that blood, hair and urine samples taken from survivors provided ‘definitive evidence of exposure’ to sarin. This finding is consistent with clinical assessments of survivors’ symptoms—which included breathing difficulties, eye irritation, convulsions and loss of consciousness—as well as statements taken from survivors and first-responder doctors and nurses (many of whom also became ill).

Further evidence was obtained through the gathering of environmental samples—30 of which were taken by the UN inspection team from ‘impact sites and surrounding areas’ during their mission. Following analysis by laboratories designated by the Hague-based Organisation for the Prohibition of Chemical Weapons (OPCW), the majority of these samples were shown to contain sarin or its by-products.

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The overall weight of findings was noted by the UN inspection team to present ‘clear and convincing evidence’ of sarin use in Ghouta. Inspectors were not, however, mandated to draw conclusions as to who was responsible for the atrocity.

Defending the mandate

UN Secretary-General Ban-Ki-moon has repeatedly had to defend the narrowness of this mandate. Responding to a journalist’s question on 3 September as to who set the limits on the mandate, Mr Ban insisted that it was ‘the United Nations’ decision and my decision.’ Speaking to reporters following the release of the report, he reiterated that the team’s job had been ‘to determine whether and to what extent chemical weapons were used, not who used them,’ adding: ‘It is for others to decide whether to pursue this matter further to determine responsibility.’ To what extent the mandate’s bounds really were a unilateral decision by the secretary-general’s office remains unclear.

In any case, the UN report was met with near-universal acceptance. Only one country, Russia, voiced opposition to it, calling the report ‘one-sided’ and arguing that it had been prepared by the UN’s inspectors and its secretariat ‘selectively and incompletely’. By this, Russia may be referring to the report’s sole focus on Ghouta when other alleged cases of chemical weapons use in Syria are yet to be investigated. (Though in fact, the UN team had arrived in Syria to investigate three lesser cases of alleged use and were already in the country when the Ghouta attack—which quickly assumed sole priority—took place.) It was, of course, foreseeable that one or more states might dispute the report. The UN, for its part, has responded firmly. Speaking on 18 September, UN spokesman Martin Nesirky stated that the report’s findings are ‘indisputable’. The facts ‘speak for themselves’ he said, ‘and this was a thoroughly objective report’ into the incident in question.

The rigorousness of process followed by the UN team, and related in great detail in their report, supports the claim of objectivity. In the report, its authors note that they ‘adhered to the most stringent protocols available for such an investigation’ in their work in Ghouta. This included being especially strict on ‘traceability’; that is, the chain-of-custody procedures followed to ensure that their activities would

‘withstand future scrutiny’.

In the case of the Ghouta investigation, samples were recorded and witnessed as they were taken, before being sealed and transported under inspector supervision to a preparatory laboratory with accompanying documentation. The integrity of the seals was then confirmed before the samples were subdivided and re-sealed for transport to OPCW-designated laboratories—again with accompanying documentation and under UN inspection team supervision. At these laboratories, checks were conducted using standard procedures for the receipt, storage and analysis of samples before results were transmitted to the inspection mission for review. The robustness of the process was complemented by an audit trail of receipts. Moreover, all methods used for sample-gathering, interviewing and the preparing of paper records followed standard OPCW and World Health Organization procedures—the inspection team having comprised of trained experts from both bodies.

Intervention forestalled

UN verification of chemical weapons use in Ghouta (with more investigations, of other sites, to come) provided important independent confirmation, but came as little surprise to the vast majority of onlookers due to the weight of anecdotal evidence that emerged in the first hours after the attack and thereafter. Their apparent use saw the United States and other Western governments set in motion preparations for a military response against the Assad regime—to whom they assign responsibility for the attack—even as the UN report was being prepared. But in the days immediately preceding the release of the report, a Syrian decision to give up its chemical weapons and join the Chemical Weapons Convention saw American-led airstrikes averted, for the time being at least.

A joint US-Russian ‘framework’ document released by the US State Department on 14 September codified the key points of Syria’s chemical disarmament. In it, the US and Russia noted their agreement that ‘the most effective control of these weapons’ would be achieved ‘by removal of the largest amounts of weapons feasible, under OPCW supervision, and their destruction outside Syria, if possible.’ Syria was required to submit a ‘comprehensive’ declaration concerning its

chemical weapon stockpiles within one week—‘including names, types, and quantities of its chemical weapons agents, types of munitions, and location and form of storage, production and research and development facilities.’

Syria submitted an initial declaration on 19 September, according to the OPCW, which a US official reportedly described as being ‘better than expected’. Nonetheless, on 27 September the Executive Council of the OPCW adopted a ‘decision’ in which it called upon Syria to submit further information to it within seven days. Within 30 days Syria was also required to submit a full and detailed declaration to the OPCW as required by Article III of the CWC. According to the framework and the OPCW Executive Council decision, the ‘complete elimination of all chemical weapons material and equipment’ is to take place in the first half of 2014. The framework notes that this is to be an effort encompassing everything from production facilities and precursor chemicals to chemical agents and delivery systems. Materials and equipment related to the research and development of chemical weapons were also included.

Implementing the deal

How this will be carried out in practice, however—and how effectively it can be done within the timelines set and the conditions in the country—remains to be seen. The OPCW is well-versed in the verification and elimination of chemical weapons around the world, having carried out such activities for well over a decade as the implementing body for the CWC. But in Syria, where civil war continues, the situation is far from the norm. Certain parallels can be drawn with the verification and destruction work of UN inspectors in Iraq after the 1991 Gulf War, and more recently in Libya, but these falter when compared to the nature of the situation in Syria.

Security will be the greatest challenge. If circumstances remain as they are today, practical implementation of the US-Russia-Syria agreement will be fraught with danger. Inspectors may get caught up in fighting, or even targeted outright since anti-Assad forces, or some elements within them, may want to ensure that the deal cannot be made to work as its implementation lessens the chance of Western military intervention against the Syrian regime. Even in their few days on the ground in Damascus gathering evidence on the Ghouta attack

the UN team came under unidentified sniper fire, sustaining bullet damage to one of their vehicles.

The framework document requires that OPCW, UN and any supporting personnel are provided with ‘immediate and unfettered access to inspect any and all sites in Syria,’ but as the sniper attack showed, freedom of movement in practice is another matter entirely. Managing security will be uppermost in the minds of those planning destruction and verification activities in Syria. In a statement on 27 September, OPCW Director-General Ahmet Üzümcü noted that security would be an ‘overriding concern’. He added that he was reassured by pledges of support from CWC parties—Russia, for one, has reportedly offered to provide military personnel to assist in the elimination operation—and that the OPCW looked forward to working closely with states ‘to create the conditions necessary for our teams to perform their duties in Syria.’

In practice, it seems reasonable to assume that the verification process would be based as far as possible—in light of the ongoing war—on standard OPCW declaration verification procedures, which involve on-site inspections to verify declarations, the cessation of chemical weapons activities, the destruction of production facilities and weapons themselves, and to enable monitoring of storage facilities to guard against any unauthorised removal. Similarly, any movement of materials or items within the country could follow OPCW protocols for ensuring safe and secure chain of custody and globally-recognised procedures for the transport of hazardous substances. How these can be procedures and protocols can be integrated with security planning will require careful forethought. Media reports indicate, for instance, that inspectors would be wearing both hazardous material clothing and body armour, at least in some situations.

Security will likely need to be planned in consultation with the Syrian army, and possibly with opposition forces, as well as with any foreign military units entering Syria for the specific purpose of assisting in the elimination operation. A UN Security Council resolution on Syria adopted on 27 September urged ‘all Syrian parties and interested Member States with relevant capabilities to work closely together and with the OPCW and the United Nations to arrange for the secu-

rity of the monitoring and destruction mission'. An armed UN protective mission for the inspection and destruction teams could also conceivably be assembled, assuming this could be done quickly enough. The aforementioned Security Council resolution (no. 2118) made no mention of any such force, however, recognising instead the 'primary responsibility' for security rested with the Syrian government.

Destruction methods

The framework notes that the destruction of chemical agents and precursor chemicals themselves will be carried out either within or outside Syria, 'depending upon site-specific conditions'. The specific nature of these conditions are not addressed further by the framework, though one can speculate that this refers to both health and safety issues surrounding the storage of chemicals as well as to the surrounding environment (whether the location is an active area of fighting for instance, or possibly close to clusters of population). If chemicals are to be destroyed within Syria then the framework notes that one option would be for them to be consolidated in the coastal part of the country and destroyed there. It remains unclear what techniques will actually be used in the destruction of Syria's chemical warfare agents, but destruction methods for chemical warfare agents typically fall into two categories, incineration or neutralisation (see 'Destroying chemical weapons', page 11 of this edition), and a mixture of these two may be employed depending on the particular circumstances encountered. If chemical agents are not removed from Syria, mobile destruction systems may be brought in to assist with elimination. And if elimination operations are carried out in the country, Syrians themselves may be involved in the destruction process, with oversight from international inspectors.

On a practical level, some destruction activities will have to take place in-country, particularly of chemical production facilities. This may simply involve destruction through explosive charges, which would be a quick means of eliminating them—as long as facilities are deemed 'clean' of any chemicals that might be dispersed into the air. The dismantlement of facilities, or conversion to civilian uses, would take longer.

Correctness and completeness

As the ultimate goal is to rid Syria of all chemical weapons,

inspectors will also need to maintain a dual focus on both 'correctness' and 'completeness'. That is to say, they will want to be sure that each item presented to them matches its declared specification and that the cumulative total of items declared and presented for verification is in fact the total amount in the country. The timeline for implementation of the Syria deal is tight, and the environment nothing like amenable to verification work. Ensuring correctness under these pressures will be difficult; ensuring completeness—which is likely to require free-ranging movement throughout Syria for inspectors—even more so. The OPCW Executive Council decision mandates that 'any other site' (that is, in addition to those declared) 'identified by a State Party as having been involved in the Syrian chemical weapons programme' is to be inspected as soon as possible. Even so, the conditions on the ground there make it hard to see how that could be accomplished, at least at present. The task will obviously be made much harder if Syria is not entering into the deal in the fullest of good faith.

The next major deadline will be 1 November 2013, by which time the OPCW Executive Council decision requires the destruction of chemical weapon production as well as 'mixing/filling' equipment to be completed. Whether this milestone is met or not may provide a good first indication as to the likelihood that the deal will be fully implemented in the time set—a schedule that many see as being highly ambitious.

Overall, Syria's agreement to give up its chemical weapons and join the CWC, now leaving just six outsiders, stands as one of the few positive developments in a crisis that has recently reached a dark new low. Underlying this stands the norm against the use of chemical weapons that has been built up over the course of the 20th century and reinforced since the introduction of the CWC (see following article for a fuller discussion of this point). That the use of chemical weapons in Syria has led, quickly, to Syria's decision—in the face of military action and global condemnation—to rid itself of them illustrates, if nothing else, that this is a norm holding strong. •

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Legal issues concerning chemical weapons use in Syria

On 16 September 2013, the UN secretary-general shared the report of the 'UN Mission to Investigate Allegations of the Use of Chemical Weapons in the Syrian Arab Republic' with UN member states and expressed 'his profound shock and regret at the conclusion that chemical weapons were used'. The first part of this article discusses the legal and procedural aspects of the UN secretary-general's mechanism, under which the investigation occurred, and the legal avenues for ensuring accountability of the perpetrators of chemical weapons use. The second part considers the legal aspects of Syria's accession to the Chemical Weapons Convention (CWC) on 14 September and the importance of universality of the convention. While closely related, these parts are legally separate as Syria's accession to the CWC does not change the fact that a grave crime was committed for which the perpetrators have to be held accountable.

The UNSG's mechanism and accountability

Pursuant to the UN secretary-general's fact-finding authority under Article 99 of the UN Charter to 'bring to the attention of the Security Council any matter which in his opinion may threaten the maintenance of international peace and security', two UN General Assembly resolutions in 1982 and 1987 established a specific investigation mechanism concerning allegations of biological and chemical weapons use. The mechanism was reinforced by a UN Security Council resolution in 1988 and is formally known as the 'United Nations Secretary-General's Mechanism for Investigation of Alleged Use of Chemical and Biological Weapons'.

The procedures for this mechanism, as endorsed by the UN General Assembly and established and most recently reviewed by a group of qualified experts in 2007, are as follows: based on information provided by a reporting UN member state(s), the UN secretary-general, with the assistance of expert consultants, will discuss whether an investigation is warranted. The secretary-general is to look for a 'degree of sufficiency, conclusiveness and credibility' in the member

state's report. If the information in the report is unclear, the secretary-general can ask the reporting member state for clarification, which should be given within 24 to 36 hours. The secretary-general may also consider information provided by other member states. His decision should be taken quickly, 'no later than 24 hours after the receipt of the report, if possible.'

Once the decision is taken, the secretary-general has to arrange access for a team of qualified experts to the territory in question. The member state should be called on by other member states not to refuse access and should grant rapid access to the site. Experts should be dispatched to the site of the alleged incident as quickly as possible, no later than 48 hours after the decision has been taken to carry out such an investigation. Once at the site, the secretary-general's mechanism has guidelines as to how samples should be collected, handled, stored, transported and analysed. It also has guidelines to ensure chain-of-custody of these samples, which is crucial for ensuring their reliability.

The UN secretary-general stated in his note accompanying the report of 16 September that chemical weapons use 'is a war crime and grave violation of the 1925 Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare (1925 Geneva Protocol) and other relevant rules of customary international law'. The study 'Customary International Humanitarian Law' by the International Committee of the Red Cross stated in 2005 that the use of poison weapons, chemical weapons and biological weapons is prohibited during peacetime and also in both international and non-international armed conflicts.

Moreover, the International Criminal Tribunal for the former Yugoslavia (ICTY) noted in 1995, in *Prosecutor v. Tadic*, that 'there had undisputedly emerged a general consensus in the international community on the principle that the use of chemical weapons is also prohibited in internal

armed conflicts.’ In his note accompanying the report to the UN Security Council and UN General Assembly, the UN secretary-general underscored that ‘the international community has a moral responsibility to hold accountable those responsible’ for chemical weapons use in Syria.

Back in 1988, in response to the use of chemical weapons by Iraq against Iran, the UN Security Council decided ‘to consider immediately, taking into account the investigations of the secretary-general, appropriate and effective measures in accordance with the Charter of the United Nations, should there be any future use of chemical weapons in violation of international law, wherever and by whomever committed’. Today, in terms of accountability, holding the perpetrators individually accountable at the International Criminal Court (ICC) is one such measure the UN Security Council can take.

Because Syria is not a state party to the Rome Statute establishing the ICC, a referral to the court by the UN Security Council is the only way for the ICC to have jurisdiction over the situation. In UN Security Council resolution 2118 adopted on 27 September this year, no such referral was made, but this does not preclude such referral in the future. A referral would have allowed the prosecutor of the court to determine whether to carry out a criminal investigation, covering acts of both governmental and opposing actors, and to start a prosecution.

The prosecutor’s team would consist of technical and legal experts headed by a senior lawyer. They would be expected to question individuals, collect documents and other material, and carry out forensic research in a manner that will meet the necessary standards for trial. This means they should protect the rights of suspects, victims and witnesses while carrying out their work and make sure that the evidence collected can be used in court.

It should be noted that if any suspects of chemical weapons use were prosecuted at the ICC, they would not be charged with using chemical weapons, but with the use of ‘poison or poisoned weapons’ and ‘asphyxiating, poisonous or other gases, and all analogous liquids, materials or devices’. This war crime was already in the court’s statute for inter-

national armed conflicts, but was only added to apply to non-international armed conflicts in 2010. Thanks to this revision, the perpetrators in Syria can be held accountable for poison use. The fact that the Rome Statute does not prohibit ‘chemical weapons’ and ‘biological weapons’ per se, however, is a shortcoming that still needs to be addressed by the Rome Statute’s states parties.

Syria could also prosecute perpetrators in its national courts in a post-conflict situation where its national courts have the capacity to process such cases. This is important because it is the policy of the ICC to only prosecute those who bear the greatest responsibility for the crimes in its statute. Former Chief Prosecutors of the various international criminal tribunals such as the ICTY, International Criminal Tribunal for Rwanda (ICTR) and Special Court for Sierra Leone (SCSL) have also suggested establishing a ‘Syrian Extraordinary Tribunal’, which would be a national court incorporating international elements. It would function in addition to the regular national courts, which would focus on ‘lower level’ perpetrators, and to an international court such as the ICC, if that were to happen, which would focus on the highest.

States parties to the CWC that have appropriate legislation in place can also investigate and, if warranted, prosecute those that may be involved in chemical weapons production, transfer and use relating to Syria. These states parties may also want to consider keeping their enforcement mechanism under review, if they are not already doing so, especially given recent news reports on national authorities allowing dual-use chemicals that could be used to produce sarin to be transferred to Syria.

Accession and universality

Syria sent a letter to the UN secretary-general on 12 September informing him of a legislative decree to accede to the CWC. A ‘legislative decree’ is a national legal document approving Syria to accede to the convention. Syria was also required to send an international legal document, known as an ‘instrument of accession’, to the UN secretary-general (in his function as the Depositary of the Convention as stated in Article XXIII of the CWC) to formally join the convention. According to the Vienna Convention on the

Law of Treaties, accession, like ratification, 'is the international act [...] whereby a State establishes on the international plane its consent to be bound by a treaty' (Article 2 (1) (b)). Its consent to be bound is demonstrated with such an instrument of accession upon its deposit with the depositary (Article 16 (b)).

Syria deposited its instrument of accession on 14 September, a move welcomed by the UN secretary-general. Article XXI (2) of the CWC states that the convention will enter into force for a state one month after the deposit of the instrument of accession, in Syria's case therefore on 14 October 2013. Legally speaking, Syria then has to declare its chemical weapon stockpiles and chemical weapon production facilities along with a 'general plan for destruction' a month after entry into force, that is by mid-November (Article III). However, Syria has asked for provisional application of the convention and given the extraordinary circumstances of its accession, a framework agreement with earlier deadlines for destruction of the chemical weapons was formulated between the United States and Russia.

The decision taken by the Executive Council of the Organisation for the Prohibition of Chemical Weapons (OPCW), which oversees implementation of the CWC, on 27 September was informed by this framework agreement and includes several deadlines relating to inspection and destruction activities. It also provides that any problems arising with the implementation of the decision can be referred to the UN Security Council in accordance with Article VIII of the convention.

The CWC now has 190 states parties with Syria's accession and has rightfully prided itself on its high number of states parties. By 2003, just five years after its entry into force, the convention already had 154 states parties. By 2009, it had reached near universality with 188 states parties. Since both Somalia and Syria joined this year, only six states remain outside the convention. Following the alleged and later confirmed use of chemical weapons in Syria, the overwhelming condemnation by the international community is testament to the international norm that the CWC has helped to build, namely the prohibition of use of chemical weapons in any circumstances. After the 21 August sarin attack, the

OPCW Director-General Ahmet Üzümcü stated that 'any use of chemical weapons is abhorrent and stands fully condemned by the international community as embodied in the CWC and underlined in its near universal acceptance.' State practice since the attacks further serves to reinforce this norm. A statement released by the White House condemning the use of chemical weapons in Syria was formally joined by 37 states. During the first six days of the UN General Assembly's General Debate, 87 states unequivocally condemned the chemical weapon attacks.

However, the situation in Syria has also been a reminder that near-universality is not sufficient to uphold the norm against chemical weapons use. Syria was one of seven states that had not joined the convention and, given the significant outreach in support of adherence to the convention, it can be deduced that certain of these non-states parties remain outside the convention quite deliberately. This non-state party status legally entitles them to produce and stockpile chemical weapons, although CWC states parties may not transfer certain chemicals to them which could facilitate the development of such weapons. However, any use of these weapons would still constitute a violation of the 1925 Geneva Protocol (for states that have joined that treaty, which includes Syria) or customary international law, as described above. Nevertheless, chemical weapons possession facilitates chemical weapons use, whether by a state programme or by other actors who may acquire them through theft, diversion or illicit production. It is therefore critical that all of the states that remain outside the convention (Angola, Egypt, North Korea, South Sudan and signatories Israel and Myanmar) join it without delay and that all CWC states parties give effect to their implementation obligations through national law. •

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The IAEA safeguards resolution: return to consensus

Sonia Drobysz and Hassan Elbahtimy, London

For the first time since 2006, the General Conference of the International Atomic Energy Agency (IAEA) has unanimously supported a resolution on the agency's international nuclear safeguards. The resolution was adopted during the last hours of this year's General Conference which took place in September at the agency's headquarters in Vienna and is the largest annual meeting of IAEA member states. Over the years, the resolution has become one of the highlights of the conference and is often the focus of long and protracted negotiations over its drafting and language.

The resolution was first introduced in 1991 by Australia and 12 other countries to support efforts to strengthen the effectiveness and efficiency of the agency's safeguards. At that time, the resolution enjoyed wide support and was adopted by consensus. This was largely due to the agency's experience of safeguards implementation in Iraq that had highlighted gaps, vulnerabilities but also what many considered as systematic shortcomings in the application of nuclear safeguards.

Ever since, however, the resolution has grown both in length and complexity to reflect the main safeguards issues of the day. In the early 1990s it echoed growing appreciation of the importance of extending verification to undeclared sites and facilities. In 1997, it started to include references in support of the Additional Protocol. From 2006, it has been linked with various issues related to the Middle East fuelled by Arab states' frustration on lack of progress on a regional nuclear weapons free zone as well as controversies related to the Iranian nuclear issue. The consensus on the resolution eventually broke in 2007 and since then the future of the resolution has been subject to annual speculation. The adoption of the resolution by consensus is particularly significant this year given that the conference did not adopt one in 2011 and was passed last year with a majority vote rather than consensus.

This year's resolution includes notable changes that potentially mark a departure from the resolutions adopted in previous years. Importantly, the title of the resolution has changed. When first introduced in 1991, the resolution was simply called 'Strengthening the safeguards system.' After the introduction of the Additional Protocol in 1997, it was replaced with a rather long title but one that reflected the development of the new instrument: 'Strengthening the effectiveness and improving the efficiency of the safeguards system and application of the Model Additional Protocol.' This year's resolution went back to a pre-1997 formula and removed the reference to the Additional Protocol from the resolution's title.

Also, interestingly, the newly adopted resolution seems to have been purged of most references to the 'state-level' concept, which has been the focus of many discussions in the IAEA recently. As described by IAEA's Director General Amano in the Board of Governors meeting earlier in September, the concept 'involves giving consideration to a state as a whole, rather than focusing primarily on declared nuclear material and facilities.' The director general re-emphasised the role of the state-level concept in his address to the General Conference by stating that 'the state-level approach...is indispensable to discharge...safeguards responsibilities under budget constraints,' as it enables the agency to concentrate its efforts on areas that it considers to have greater safeguards significance.

Individual state-level approaches are currently being implemented in 53 countries, and the concept itself is supported by the European Union and the United States among others. Nonetheless, other states have been vocal in expressing their concerns about the risk of discriminatory application of safeguards and that political factors could affect or influence safeguards implementation and evaluation. They also raise issues focusing on the agency's use of a wide and expanding spectrum of information. These concerns have posed some challenges to wider acceptance of the concept.

As part of the on-going discussion in the agency about the state-level concept, the IAEA secretariat reported on the ‘conceptualization and development’ of the concept to this year’s September meeting of the Board of Governors (as it was requested to do by last year’s General Conference). The report, however, did not meet some states’ expectations. For example, Russia, in its statement to the General Conference, took note of the report but said that the work of the secretariat was ‘far from complete.’ It also pointed out that ‘any changes in the safeguards application methodology shall be subject to discussion among the IAEA member states, and shall be underpinned by the decision of the IAEA Board of Governors.’ Iran further noted that the state-level concept was ‘still vague and that there are several ambiguities in the secretariat’s recent report [which] needs further elaboration and clarification’.

This year’s safeguards resolution seems to indicate that a cautious attitude toward the state-level concept had the upper hand. For example, last year’s preambular paragraph ‘m’ in which the General Conference took ‘note of the work being undertaken by the Secretariat in conceptualizing and developing State-level approaches to safeguards’. Also, operative paragraph 20 that urged ‘the Secretariat to continue to improve the effectiveness and efficiency of safeguards through the use of a State-level approach in the planning, implementation and evaluation of safeguards activities’ was deleted from the new resolution.

As these references to the concept were deleted, new text was inserted that reflects the anxieties of some of the states cautious about the state-level concept. In one instance, new language was inserted that stresses that safeguards ‘should remain non-discriminatory and only objective factors should be used to determine safeguards implementation, while political or other extraneous considerations are not included.’ (preambular paragraph ‘r’). In another instance, the new resolution calls on the agency to draw ‘independent objective conclusions using only impartial and technically based evaluation methods.’ (operative paragraph 7) The new resolution also takes note that the director general will produce a ‘supplementary document’ on state-level approaches providing further clarification and information on the issue.

Disarmament and the application of safeguards in nuclear-weapons states have traditionally occupied a prominent place in discussions on the resolution. This year, they featured again as important issues during negotiations. Failure to agree on disarmament language was one of the reasons, if not the main driver, for the failure to adopt the resolution in 2011.

This year’s resolution, however, sees two new preambular paragraphs that specifically address the issue. The first recalls ‘the IAEA Statute and in particular article III.B.1 which states that, in carrying out its functions, the Agency shall conduct its activities...in conformity with policies of the United Nations furthering the establishment of safeguarded worldwide disarmament and in conformity with any international agreements entered into pursuant to such policies.’ The second further recalls that ‘the 2010 NPT Review Conference in Action 30 of the Final Document called for the wider application of safeguards to peaceful nuclear facilities in the nuclear-weapon States...and stressed that comprehensive safeguards and additional protocols should be universally applied once complete elimination of nuclear weapons has been achieved.’

The resolution’s unanimous adoption is certainly a welcome development in as much as it fosters a spirit of cooperation and harmony on a topic that can trigger heated discussions in the agency’s corridors. That said, the resolution is likely to have little bearing on the actual implementation of safeguards since that is governed by international treaties, safeguards agreements and established procedures and practices. The resolution might, however, give some guidance on possible trends for the evolution of safeguards practice. Arguably, the resolution’s true value is in how much it reflects state positions on safeguards issues but also in providing room for such positions to mature and evolve, and for observers of the process to follow these developments. The consensus achieved this year was based on a fine balance between positions but one that has introduced some daring changes to the resolution. ●

Upcoming OPCW budgets loom

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The recent use of chemical weaponry in Syria has forced these weapons to the forefront of the international agenda. The Organisation for the Prohibition of Chemical Weapons (OPCW) is tasked with the verified destruction of these weapons, as well as making sure that they do not re-emerge. The total expenditure appropriated in 2013 was €69,803,800, of which about 46 per cent was related to verification costs.

According to the Chemical Weapons Convention (CWC), these costs are primarily covered by the organisation's member states, in accordance with the United Nations scale of assessments, adjusted to take into account membership differences between the two organisations.

The convention also requires state parties to cover the costs incurred in destroying their chemical weapons and their production facilities. But because of the expensive nature of such an enterprise, some countries request external assistance to fulfill this obligation. Recently, the director general of the OPCW announced the creation of a Trust Fund to manage voluntary contributions in support of the new inspections activities in Syria.

While inspection activities in Syria are likely to incur substantial financial costs, the organisation also expects an increase in its overall work in verifying destruction activities in the period 2013-2015. This is due to the introduction of a new destruction facility in the Russian Federation, resumption of chemical weapon destruction in Libya as well as the destruction of abandoned Japanese chemical weapons in China. However, as the organisation progresses towards completing the verified destruction of all chemical weapons, which is only one of its core missions, its budget is expected to continue to decrease.

Like so many other organisations dealing with multilateral verification, the OPCW has seen its budget slashed over the last few years. Since 2010, the organisation has lost 13 per cent of its verification budget. However, taking inflation into account, the cut has been deeper, almost 20 per cent. It does not end there: pressure on the OPCW to reduce

staffing levels in 'non-operational programmes' is also mounting (those are programmes that are not delivering verification services or international cooperation and assistance).

An overall reduction of the scale of OPCW activities has long been feared and forecasted by those close to the organisation. The OPCW director general's 'Advisory Panel on Future Priorities', for instance, cautioned in their 25 July 2011 report that the 'decrease in the verification effort due to the completion of destruction operations at several chemical weapons destruction facilities projected for the coming years must therefore not lead to a loss of competence and capacity'.

Undeniably, given current events in Syria this is a pertinent point. A cursory glance at the OPCW budget sheet would indicate that there are cost-savings to be had without necessarily cutting into the verification and inspection budget. As noted above, some reductions in the overhead is already being implemented. However, OPCW members need to take great care when forcing cuts onto the organisation, as they risk cutting too deeply too rapidly.

The Eighteenth Session of the Conference of States Parties to the CWC is scheduled to convene in the World Forum Convention Centre, The Hague, on 2-6 December 2013. The conference annually considers and adopts the budget for the OPCW. While the organisation has already announced the establishment of a special fund and called for voluntary contributions in support of inspection activities in Syria, these arrangements remain ad-hoc and temporary in nature. Member states of the organisation could seize this opportunity to provide more stable and enduring mechanisms to allow the organisation to address the increased emphasis on eliminating chemical weapons worldwide. ●



Destroying chemical weapons

Russell Moul, London

Destroying chemical weapons or their precursors poses a complex challenge. The technical operations involved require specific expertise and technologies to safely and irreversibly eliminate these weapons and their agents in an efficient and controlled manner. Also, these operations can be expensive and may take many years to complete.

The US-Russian 'Framework for the Elimination of Syrian Chemical Weapons' released on 14 September 2013 asked the Executive Council of the Organisation for the Prohibition of Chemical Weapons (OPCW) to 'set ambitious goals for the removal and destruction of all categories of [chemical weapons] related materials and equipment with the objective of completing such removal and destruction in the first half of 2014.' Russia has since proposed that the destruction process could—and should—be organised within Syrian territory.

Regardless of where the destruction takes place, the process will likely have to meet certain criteria set out in the Chemical Weapons Convention (CWC). These principally relate to public health and environmental considerations. For example, paragraph 12 and 13 of Part 4A of the CWC's verification annex strictly prohibit destroying chemical weapons agents through dumping in any body of water, land burial or open pit burning. Furthermore, any facilities used in the destruction of chemical weapons must be specifically designated and appropriately designed and equipped.

The OPCW separates chemical weapons destruction technologies into two main groups:

- High temperature destruction technologies designed to burn chemical agents and munitions in furnaces (incineration), and;
- Low-temperature destruction technologies that rely on

chemical hydrolysis and post-treatment of the generated by-products (neutralisation).

Although alternative methods do exist (for example, using plasma reactors, steam reactors, and super-critical water oxidation reactors), incineration and neutralisation are by far the most widely-used methods. State parties to the CWC may elect and apply their own destruction methods. Incineration is the standard method used in destroying chemical weapons in the US. The UK and Canada also used this method to eliminate their stocks of the blister agent sulphur mustard. Russia, on the other hand, uses the neutralisation method to eliminate its stocks.

Whichever process is chosen, individual munitions like rockets or artillery shells must first be safely disassembled. In most cases remote-controlled equipment separates the weapon into three groups of component parts: the agent (often in liquid form), the explosives and some metal parts.

If incineration is to be used, the chemical agents are captured in holding tanks, which enter into a liquid furnace. The first chamber heats the agent to about 1,482°C, while the after-burner (second chamber) heats it to approximately 1,093°C. According to the OPCW, this process results in a 99.9999 per cent destruction and full mineralisation of organic compounds. The drained munitions cases and empty containers are also decontaminated through thermal treatment in a metal parts furnace. Gaseous emissions generated by the process, such as oxide or acid gas, are then removed through multiple wet and dry filters and released into the atmosphere through smokestacks.

There are many advantages to using incineration technologies to destroy chemical weapons. Most chemical weapons, except for the nerve agent sarin, are flammable and have a high calorific value—the amount of heat per unit mass-produced by complete combustion—making them extremely susceptible to incineration. The process is also reasonably safe and controllable.

Chemical hydrolysis on the other hand, usually involves draining the chemical weapons container or weapon itself and placing the liquid agent in a tank where it is mixed with hot water or a caustic reagent such as sodium hydroxide, or both. Nerve agents, for example, can be neutralised by treatment with a 10-20 per cent (by volume) solution of sodium or potassium hydroxide.

One drawback to this process is that it creates byproducts that require further treatment to prevent them being reconstituted into a chemical weapon agent or a precursor. Typically, Russia and the US transport the hydrolysis products off-site to a commercial treatment and disposal facility where they are incinerated.

At present it is not clear what methods will be used for chemical weapon destruction in Syria. The timelines for destruction activities in the country are ambitious, implying an emphasis on speed. Historically, open-pit burning (among other techniques) was used for chemical weapon destruction in Iraq, however this method is now prohibited by the CWC. The selection of destruction methods for Syrian chemical weapons will have to balance the desire to rid the country of its arsenal quickly with serious considerations on safety and thoroughness.

It is important to note that even trace amounts of many chemical weapons agents can be extremely harmful. Consequently ensuring the safety of the destruction teams, the general public and the environment, is only achievable by experienced and expertly trained personnel. The CWC's verification annex contains detailed procedures for monitoring and inspecting the destruction of chemical weapons within a country. However, the situation in Syria could severely impede this process, especially since 7 out of 19 of the chemical weapons facilities are located within conflict zones at this time, according to Syria's Foreign Minister Walid Muallem. •

Upcoming events

Nuclear security 'kit' ready for soft launch

VERTIC has developed a 'National Legislation Implementation Kit on Nuclear Security', at the request of the Government of Indonesia, which the President of Indonesia proposed during the Seoul Nuclear Security Summit in 2012 as their gift to the summit in 2014. The kit will be officially offered by the government of Indonesia to the Nuclear Security Summit in March 2014.

The kit includes model legislative provisions to implement the following instruments:

- 1980 Convention on the Physical Protection of Nuclear Material (CPPNM)(and 2005 amendment);
- 2005 International Convention for the Suppression of Acts of Nuclear Terrorism (ICSANT);
- 2003 IAEA Code of Conduct on the Safety and Security of Radioactive Sources and 2011 Revised Guidance on the Import and Export of Radioactive Sources;
- 2010 Convention on the Suppression of Unlawful Acts Relating to International Civil Aviation (Beijing Convention);
- 1988 Convention for the Suppression of Unlawful Acts against the Safety of Maritime Navigation (as amended by the 2005 Protocol);
- 1988 Protocol for the Suppression of Unlawful Acts against the Safety of Fixed Platforms Located on the Continental Shelf (as amended by the 2005 Protocol).

The model legislative provisions cover: definitions, including for 'nuclear material' as defined in the CPPNM and ICSANT; offences and penalties; jurisdiction; accounting for, securing and physically protecting nuclear and other radioactive material; the control of transfers (e.g., imports and exports) of nuclear and other radioactive material; and national enforcement and international co-operation.

National Implementation Measures Programme

Over the past three months, VERTIC staff completed legislation surveys related to nuclear security, the Chemical Weapons Convention and the Biological Weapons Convention (BWC) for five countries in Southeast Asia. The completion of these surveys as well as survey overviews was undertaken under the European Union CBRN Centres of Excellences Project 8 on 'Prerequisite to strengthening CBRN national legal frameworks'. VERTIC is leading the implementation of Project 8. Our two project partners are the Federal Office of Economics and Export Control, a German federal agency, and the United Nations Office on Drugs and Crime (UNODC).

VERTIC staff also reviewed one country's draft ordinance on the security of nuclear material and radioactive sources, and sent a BWC ratification package to another country.

Additionally, VERTIC completed the first draft of the National Legislation Implementation Kit on Nuclear Security, at the request of the Indonesian government. The kit will be launched and delivered by the Indonesian Government as a 'gift' to the 2014 Nuclear Security Summit. The draft is currently being circulated to relevant stakeholders, including the Nuclear Security Summit sherpas.

VERTIC also attended the International Atomic Energy Agency (IAEA) International Conference on Nuclear Security in Vienna from 1-5 July where staff raised awareness about VERTIC's activities on nuclear security legislation to delegates and the National Legislation Implementation Kit on Nuclear Security. .

From 11 to 16 August, VERTIC staff attended the BWC Meeting of Experts in Geneva and participated in the European Union BWC Action Working Meeting on its BWC National Implementation Guide. Bilqees Esmail, Legal Officer, delivered a statement to the Meeting of Experts, while Mr Spence, presented on 'Strengthening National Implementation of the BWC' to a plenary session.

VERTIC participated in a regional workshop for national implementation of the BWC in South and Southeast Asia, held in Kuala Lumpur, Malaysia on 3 and 4 September. VERTIC was represented there by Sonia Drobysz, Legal Officer, who gave a presentation on the status of implementation of the BWC and UN Security Council Resolution 1540 in the region.

The Fourth Summer Programme on Disarmament and Non-Proliferation of WMD, held at the TMC Asser Institute for International Law in The Hague on 6 September saw Scott Spence speak on 'The UN investigative mission to Syria on the alleged use of chemical weapons', and 'Engaging academia and civil society in WMD disarmament and non-proliferation'. Mr Spence also spoke, this time on nuclear security, at a VERTIC event held in collaboration with the Vienna Center for Disarmament and Non-Proliferation on the margins of the IAEA General Conference.

The past quarter also saw Yasemin Balci, Legal Officer, attend the 2013 summer session of the International School of Nuclear Law in Montpellier, France. •

Verification and Monitoring Programme

In July, VERTIC staff travelled to Vienna to attend the IAEA nuclear security conference. Also in July in Vienna, VERTIC participated in a simulated meeting of the CT-BTO Executive Council where Andreas Persbo, VERTIC's Executive Director, played the role of Director-General. VERTIC staff also travelled to Oslo, Norway, in July to take part in a student simulation on the verification of warhead dismantlement. The simulation was organised by King's College London and the Norwegian Institute for Energy Technology.

In August, VERTIC participated in a project group meeting run by the Nuclear Threat Initiative held in Stockholm, Sweden. The meeting addressed the potential role of non-nuclear-weapon states in verifying nuclear disarmament. August also saw Hassan Elbahtimy attending the 2013 sum-

mer session of the International School of Nuclear Law in Montpellier, France.

In September, VERTIC participated in a conference on nuclear disarmament organised by the Czech Foreign ministry. Mr Persbo gave a presentation titled: 'Prague and Berlin: Two Speeches, Same Vision' which is available on the VERTIC website. In his address, he discusses the so-called Prague agenda (to work toward a world without nuclear weapons) set in motion by President Obama in 2009 and reaffirmed by him in Berlin earlier this year.

September also saw a sizeable delegation of VERTIC staff attend the IAEA General Conference in Vienna. During the conference, VERTIC hosted an evening reception, and, in collaboration with the Vienna Center for Disarmament and Non-Proliferation, a side-event that highlighted some of VERTIC's current projects. At the side-event, Larry MacFaul presented on our activities on the IAEA Additional Protocol. VERTIC staff also engaged with country delegations on the Additional Protocol during the week.

Lastly, in late September, Andreas Persbo travelled to Brussels, Belgium, to speak at a meeting of the EU Non-Proliferation Consortium.

Over the past three months VERTIC has published two briefs: one on chemical weapons detection in Syria, and a second on the IAEA's safeguards work by International Verification Consultants Network member John Carlson.

In addition, VERTIC staff have been engaged on work on the Additional Protocol, including the production of country surveys and assistance materials as well as coordination activities. VERTIC has also continued to investigate the application of robotics to nuclear disarmament verification. We have furthermore continued activities and commenced new work streams under our grant to investigate the role of intergovernmental organisations in nuclear disarmament verification. •

Recent publications

VERTIC Brief No. 22: 'Chemical weapons detection: inspecting Syria', David Cliff, Russell Moul and Ariane Jugieux (August 2013)

In this brief, David Cliff, Russell Moul and Ariane Jugieux consider the legal and technical aspects of the detection of chemical weapons use—both in the immediate and later stages after an alleged attack.

This brief also looks at the UN Secretary-General's 'Mechanism for Investigation of Alleged Use of Chemical and Biological Weapons' (as seen recently in Syria) and at the various technical tools available to investigators and first-responders.

VERTIC Brief No. 21: 'The IAEA safeguards function', John Carlson and Andreas Persbo (August 2013)

In this brief, John Carlson and Andreas Persbo discuss the function of IAEA safeguards. This paper emphasises the role of the safeguards system in preventing the use of nuclear material for proscribed purposes, and discusses what this means for the authority to investigate nuclear weaponisation activities, the standard of proof, and the agency's responsibility to provide early warning.

It concludes that 'safeguards are not an adversarial system, a zero-sum game where either the state or the IAEA 'wins' and the other loses. Rather, for the overwhelming majority of states that have made a non-proliferation commitment, cooperation with the IAEA helps the state to demonstrate that it is meeting this commitment.'

Verification Quotes

*We need resolution in a reasonable time. If it's three months that would be Iran's choice, if it's six months that's still good. It's a question of months not years—*Iranian President Hassan Rouhani speaks of his ambitions for ending his country's long-running nuclear standoff with the West (26 September).

*One meeting and a change in tone, which was welcome, doesn't answer those questions [about Iran's nuclear activities] yet, and there's a lot of work to be done—*US Secretary of State John Kerry strikes a note of caution over the apparent softening of Iran's position (27 September).

*But I think it's important for us to keep the pressure on, and to quote or to paraphrase at least, former US President Ronald Reagan, it's not enough just to trust, I think we're going to have to verify—*US President Barack Obama on Russia's suggestion that Syria's chemical weapons be put under international control (9 September).

*We didn't say that we are joining partially... We joined fully. We sent the letter. We sent the document. And we are committed to the full requirement of this agreement—*Syrian President Basahr al-Assad on Syria's accession to the Chemical Weapons Convention in the wake of the Ghouta massacre (19 September).

*We have to go through it in detail and plan how to conduct the on-the-ground inspection mission, to verify the accuracy of the declaration and put seals on all the materials to make sure they are secure—*OPCW spokesman Michael Luhan on the mechanics of inspecting Syria (21 September).

*The OPCW team in that investigation played its part; bravely and professionally. We now face a mission of much bigger proportions. Yet, every staff member in this organisation will bring the same zeal, commitment and motivation to this endeavour—*OPCW Director-General Ahmet Üzümcü reflecting on the OPCW's activities so far in Syria and looking ahead to the implementation challenges that the verified destruction of Syrian chemical weapons poses (27 September).

*It might be a case of smashing something up with a sledgehammer. It might be a case of driving a tank into something—*Unnamed OPCW inspector on possible means of quickly destroying Syrian chemical weapons mixing and production facilities, quoted in the *Financial Times* (29 September).

*This isn't just extraordinary for the OPCW. This hasn't been done before: an international mission to go into a country which is involved in a state of conflict and... oversee the destruction of an entire category of weapons of mass destruction which it possesses—*OPCW spokesman Michael Luhan on the unprecedented challenge facing the OPCW in Syria (30 September).

*I am sure our government will consider it seriously—*Israel's president, Shimon Peres, indicates that the Israeli government could join the Chemical Weapons Convention following the Syrian decision to become a party (30 September).

Grants and administration

This month, VERTIC welcomed two new staff members: Russell Moul and Alberto Muti. Russell and Alberto both formerly worked as consultants at VERTIC and have now joined our staff as research assistants.

In late September, Ariane Jugieux completed her three-month internship at VERTIC and her efforts during that time were very well-received. As an intern, Ariane wrote several articles for the VERTIC blog, assisted staff with a range of research projects and co-authored VERTIC's recently-released briefing paper on the technical and procedural aspects of chemical weapons detection in Syria and elsewhere. Ariane is now beginning a Master's in International Relations at the London School of Economics.

September also saw Dominic Bright begin an internship at VERTIC. Dominic has recently finished his Master's in law from King's College London and will be working with the National Implementation Measures programme for the next few months. •

building trust through verification

VERTIC is an independent, not-for-profit non-governmental organization. Our mission is to support the development, implementation and effectiveness of international agreements and related regional and national initiatives, with particular attention to issues of monitoring, review, legislation and verification. We conduct research, analysis and provide expert advice and information to governments and other stakeholders. We also provide support through capacity building, training, legislative assistance and cooperation.

PERSONNEL Mr Andreas Persbo, *Executive Director*; Ms Angela Woodward, *Programme Director*; Dr David Keir, *Programme Director*; Mr Larry MacFaul, *Senior Researcher, Editor-In-Chief, VERTIC publications*; Mr Scott Spence, *Senior Legal Officer*; Mr Hassan Elbahtimy, *Senior Researcher*; Ms Yasemin Balci, *Legal Officer*; Mr David Cliff, *Researcher*; Ms Bilqees Esmail, *Legal Officer*; Ms Sonia Drobysz, *Legal Officer*; Ms Katherine Tajer, *Administrator/Research Assistant*; Mr Russell Moul, *Research Assistant*; Mr Alberto Muti, *Research Assistant*; Ms Renata Dalaqua, *Volunteer Consultant* (2011-13); Mr Ryoji Sakai, *Volunteer Consultant* (2012-13); Ms Ariane Jugieux, *Intern* (June-September 2013); Mr Dominic Bright, *Intern* (September-November 2013).

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