



OPCW

Technical Secretariat

Verification Division
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NOTE BY THE DIRECTOR-GENERAL

SUMMARY OF VERIFICATION ACTIVITIES IN 2008

1. The Second Special Session of the Conference of the States Parties to Review the Operation of the Chemical Weapons (hereinafter “the Second Review Conference”) reaffirmed the importance of the reporting by the Technical Secretariat (hereinafter “the Secretariat”) on verification results “in the interests of transparency and continued assurance of States Parties’ compliance” (paragraph 9.51 of RC-2/4, dated 18 April 2008). Accordingly, the Secretariat has prepared the attached OPCW Verification Summary for 2008, which reflects the verification work undertaken by the Secretariat in that year.
2. The summary provides valuable feedback on the Secretariat’s verification activities, especially to States Parties that lack representation in The Hague. In terms of public outreach, it is consistent with the OPCW Media and Public Affairs Policy (C-I/DEC.55, dated 16 May 1997) and presents pertinent information on such work to a wider audience.
3. The summary has a similar structure to the Verification Summary for 2007 (S/784/2009, dated 7 August 2009), and does not contain any confidential information.

Annex: OPCW Verification Summary for 2008



Annex

OPCW VERIFICATION SUMMARY FOR 2008

1. EXECUTIVE SUMMARY

- 1.1 During 2008, the Chemical Weapons Convention (hereinafter “the Convention”) entered into force for the Congo (3 January 2008), Guinea-Bissau (18 June 2008), and Lebanon (20 December 2008). On 31 December 2008, there were 185 States Parties to the Convention, including five declared possessors of chemical weapons.
- 1.2 As at 31 December 2008, 13 States Parties had not yet submitted their initial declarations pursuant to the Convention¹, and three States Parties had submitted unfinished declarations. In addition, several States Parties had yet to submit their full declarations regarding riot control agents (RCAs).
- 1.3 There were four signatory States not Party² and six non-signatory States³, for which no verification activities could be undertaken.

Verification operations

- 1.4 With regard to chemical weapons disarmament and non-proliferation, the Secretariat performed 396 inspections/rotations in 2008, including 196 connected to chemical weapons demilitarisation under Articles IV and V, and 200 associated with industry verification under Article VI of the Convention. The number of inspection days related to chemical weapons was 15,487 (84%), while 3,018 inspection days (16%) were allocated pursuant to Article VI of the Convention. No challenge inspection or investigation of alleged use (IAU) was requested in 2008. The Secretariat was able to meet the mandated inspection aims at all inspections carried out in 2008. No inspections resulted in registered uncertainties. Issues requiring further attention (IRFAs) were registered at 12 chemical weapons-related inspections and at nine Article VI inspections.
- 1.5 The Secretariat continued to verify the efforts of the States Parties with declared stockpiles of chemical weapons to meet their destruction obligations. During 2008, the Secretariat verified the destruction of 4,137.277 metric tonnes (MTs) of chemical weapons at 13 chemical weapons destruction facilities (CWDFs) in four of the five States Parties with such stockpiles. No destruction took place in the Libyan Arab Jamahiriya.
- 1.6 A State Party⁴ completed the destruction of all of its declared chemical weapons on 10 July 2008, ahead of the 31 December 2008 extended deadline established by the Conference of the States Parties (hereinafter “the Conference”).

¹ Including Lebanon, whose initial declaration was not due until 19 January 2009.

² The Bahamas, the Dominican Republic, Israel, and Myanmar.

³ Angola, the Democratic People’s Republic of Korea, Egypt, Iraq, Somalia, and the Syrian Arab Republic.

⁴ As the State Party in question has requested that its name be regarded as highly protected information, for the purpose of this report it is hereinafter referred to as “A State Party”.

- 1.7 Eight States Parties reported discoveries of old chemical weapons⁵ (OCWs) in 2008. With regard to chemical weapons abandoned by Japan on the territory of China, recovery, excavation, identification, and over-packing operations continued throughout 2008, as did the preparations for the destruction of such weapons. The Secretariat performed seven OCW inspections in six States Parties, as well as six abandoned chemical weapons (ACW) inspections in China.
- 1.8 In terms of Article VI of the Convention, on-site inspections were carried out to verify declared activities at 200 declared facilities and plant sites in 40 States Parties during the year in review. This comprised 11 Schedule 1 facilities (41% of the number of inspectable facilities), 42 Schedule 2 plant sites (25%), 29 Schedule 3 plant sites (7%), and 118 other chemical production facility (OCPF) plant sites (2.6%). Declarations received in 2008 indicated that 120 States Parties had been involved in transfers of scheduled chemicals during the preceding year.
- 1.9 The Secretariat received notifications from six States Parties with regard to 16 transfers of Schedule 1 chemicals anticipated to take place in the year 2008.
- 1.10 In addition, declarations were received in 2008 regarding 194 transfers of Schedule 2 chemicals (involving 43 States Parties), and 1,138 transfers of Schedule 3 chemicals (involving 119 States Parties) in the preceding year.

Year-end status

- 1.11 The Secretariat verified the following year-end status of destruction of chemical-warfare agents at the end of the review period:
- (a) A total of 30,463.699 MTs, or 43%, of the total declared chemical weapons of 71,316.201 MTs had been destroyed.
 - (b) A State Party and Albania had destroyed all of the chemical weapons declared to the OPCW. India, the Libyan Arab Jamahiriya, the Russian Federation, and the United States of America had yet to complete destruction.
 - (i) The Russian Federation had destroyed 30%, and the United States of America 57%, of their respective declared quantities of Category 1 chemical weapons.
 - (ii) The Libyan Arab Jamahiriya had destroyed 39% of its Category 2 chemical weapons, and was still preparing for the destruction of its Category 1 and remaining Category 2 chemical weapons.
 - (c) The OPCW had certified the destruction or conversion of 61 of the 65 chemical weapons production facilities (CWPFs) declared under the Convention in nine of the 12 States Parties having declared such facilities.

⁵ Chemical weapons produced before 1925 or chemical weapons produced between 1925 and 1946 that have deteriorated to such an extent that they can no longer be used as chemical weapons.

One CWPF in India, two in the Libyan Arab Jamahiriya, and one in the Russian Federation had yet to be certified as destroyed or converted.

- (d) According to declared information, 78 of the States Parties maintained at least one declarable facility pursuant to Article VI of the Convention.

Optimising the verification regime

- 1.12 With regard to Article VI inspections, the use of sequential inspections (conducting several inspections during one mission) continues to be an important efficiency measure. In 2008, the Secretariat increased the number of sequential inspections compared to earlier years significantly, from 26 in 2007 to 37 in 2008. In addition, the average team size for Schedule 3 and OCPF inspections was decreased further, although with due regard for the need to ensure the ability of each team to fulfil its inspection mandate.
- 1.13 The Secretariat concluded the start-up phase in the use of sampling and analysis (S&A) during inspections. S&A was used during nine Schedule 2 inspections in 2008. Lessons learned were reviewed, with a view to making the best possible use of S&A as a verification tool. Several missing scheduled chemicals were added to the OPCW Central Analytical Database (OCAD).
- 1.14 The Secretariat made its electronic declarations software for National Authorities (EDNA) available to interested States Parties during 2008. Seventy-six officials from 54 States Parties received training on the EDNA in connection with the Thirteenth Session of the Conference and the 2008 National Authority days.
- 1.15 The Secretariat's ability to implement its verification responsibilities effectively and efficiently was adversely affected by, inter alia, outstanding initial declarations and by late or outstanding annual declarations from a number of States Parties. Moreover, the continued high number of transfer discrepancies complicated the task of data monitoring.

2. INSPECTIONS

Overview

- 2.1 During the reporting period, the Secretariat conducted 396 inspections/rotations, which accounted for 18,505 inspector days at 252 sites in 40 States Parties. On average, 33 inspections, equivalent to 1,542 inspector days, were carried out each month. The Secretariat performed 3,582 inspections/rotations in 81 States Parties between entry into force of the Convention and 31 December 2008. Table 1 lists the number and types of inspections or rotations completed in 2008 and other summary statistics on inspection activities.

TABLE 1: INSPECTIONS COMPLETED IN 2008

	Inspections / Rotations	Facilities or Sites Inspected	Inspector Days
Chemical weapons-related inspections			
CWDF	147	15	14,258
CWSF ⁶	24	17	745
CWPF	11	7	197
OCW	7	7	87
ACW	6	6	148
DHCW ⁷	1	0	52
Subtotal	196	52	15,487
Article VI inspections (chemical industry-related)			
Schedule 1	11	11	154
Schedule 2	42	42	1,050
Schedule 3	29	29	378
OCPF	118	118	1,436
Subtotal	200	200	3,018
Total	396	252	18,505

- 2.2 There was a marked decrease in the number of States Parties receiving Article VI inspections in 2008 compared with previous years. Two key determinants behind this development were a dwindling number of States Parties with not yet inspected Schedule 3 plant sites and OCPFs, and the introduction of a revised site-selection mechanism for OCPFs⁸, with a stronger focus on States Parties with a large number of declared OCPFs. As a result, the number of Article VI inspections fell by more than 30%, from 58 in 2007 to 40 in 2008 (see Table 2). Moreover, just six States Parties accounted for more than 50% of the 200 industry inspections conducted during the year. By comparison, 13 States Parties accounted for 50% of the inspections in 2007.

TABLE 2: DISTRIBUTION OF ARTICLE VI INSPECTIONS

	2004	2005	2006	2007	2008
No. of inspections	150	162	180	200	200
No. of States Parties hosting inspections	54	53	54	58	40
No. of States Parties accounting for 50% of the inspections	11	9	11	13	6

- 2.3 The six States Parties accounting for 50% of the Article VI inspections in 2008 were China, France, Germany, India, Japan, and the United States of America, each of which received more than 10 industry inspections during the reporting period. China hosted the largest number of industry inspections, followed by the United States of America. Another 10 States Parties received four or more industry inspections in 2008. Table 3 shows the regional distribution of industry inspections during the reporting period.

⁶ CWSF = chemical weapons storage facility.

⁷ Destruction of hazardous chemical weapons.

⁸ See S/641, dated 25 May 2007 and Corr.1, dated 4 June 2007.

TABLE 3: INDUSTRY INSPECTIONS BY REGION

Regional Group	No. of Industry Inspections	Percentage of Total
Africa	2	1%
Asia	79	40%
Eastern Europe	16	8%
Latin America and the Caribbean	10	5%
Western Europe and Other Countries	93	46%

Challenge inspections and investigations of alleged use

- 2.4 As in previous years, no challenge inspection or IAU was requested in 2008. However, the Secretariat continued to maintain a high standard of readiness to conduct challenge inspections and IAUs in accordance with the provisions of the Convention, as requested by the States Parties.
- 2.5 In addition to other training of relevance to challenge inspections, the Secretariat participated in a small-scale challenge inspection exercise in the United Kingdom of Great Britain and Northern Ireland.
- 2.6 In order to maintain the readiness of the Secretariat to carry out an IAU, 20 nominated officials were assigned as qualified experts by the OPCW and received training at its Headquarters. Their expertise in either the medical, munitions, or disaster management field would be required in the event of an IAU of chemical weapons or RCAs as a method of warfare. Furthermore, Tunisia offered to hold a major IAU exercise (ASSISTEX 3) in 2010.

Training of new inspectors

- 2.7 Thirty-three professionals from 18 States Parties joined the OPCW inspectorate in 2008, having successfully completed the 12-week intensive training course for new inspectors (Group H (28 trainees) and Group H+ (five trainees)). The new inspectors included specialists in chemical munitions, chemical production, health and safety, and analytical chemistry.
- 2.8 The training programme included lectures by chemical demilitarisation and industry verification experts, case studies, table-top exercises to ensure familiarity with on-site inspection procedures, and field training. The field training was designed to enhance protection skills and provide training related to risk management in the handling of potential toxic exposure. Inspectors gained hands-on experience in dealing with live chemical-warfare agents and in OPCW health-and-safety procedures. One of the core training components involved the trainees carrying out a set of mock inspections at declared facilities.

3. CHEMICAL WEAPONS⁹

Overview

- 3.1 The Secretariat verifies the destruction of chemical weapons by maintaining a continuous presence at all operating CWDFs, which allows for monitoring of ongoing declared activities, either by direct physical observation or by monitoring with on-site instruments. For the purpose of verification, inspectors are granted access so that they can monitor process parameters and review relevant documentation. Furthermore, S&A allows the Secretariat to verify the type of chemical-warfare agent being destroyed. By observing the S&A of generated waste products, the Secretariat can verify that declared quantities of chemical weapons have been completely destroyed. Inspections are also carried out at CWSFs to ensure that no undetected removal of chemical weapons takes place.

Verification operations

- 3.2 Inspections involving CWDFs and CWSFs totalled 15,003 inspector days in 2008, which included 745 inspector days (24 inspections) at CWSFs.
- 3.3 In 2008, 4,137.277 MTs of chemical weapons were verified as destroyed by the Secretariat, compared with 9,719.430 in the year before. Thirteen CWDFs were involved in the destruction of Category 1 chemical weapons: one in A State Party, one in India, three in the Russian Federation, and eight in the United States of America (see Table 4). No destruction operations took place in the Libyan Arab Jamahiriya.
- 3.4 In 2008, the Secretariat verified the completion of destruction by A State Party of all of its declared stockpiles of chemical weapons.
- 3.5 At the end of the year, the Secretariat had verified the destruction of 30,463.699 MTs of chemical weapons in A State Party, Albania, India, the Libyan Arab Jamahiriya, the Russian Federation, and the United States of America.

⁹ OCWs and ACWs to which Part IV(B) of the Verification Annex to the Convention (hereinafter “the Verification Annex”) applies are covered in section 5 of this report.

TABLE 4: CHEMICAL WEAPONS DESTRUCTION FACILITIES IN SERVICE OR UNDER CONSTRUCTION IN 2008

A State Party
One remaining CWDF
India
One remaining CWDF
Libyan Arab Jamahiriya
Ruwagha Chemicals Reloading System and Rabta Toxic Chemical Disposal Facility*
Russian Federation
Kambarka CWDF Leonidovka CWDF Maradykovsky CWDF Kizner CWDF* Pochev CWDF* Shchuchye CWDF*
United States of America
Anniston Chemical Agent Disposal Facility Newport Chemical Agent Disposal Facility Pine Bluff Explosive Destruction System Pine Bluff Chemical Agent Disposal Facility Recovered Chemical Weapons Destruction Facility Prototype Detonation Test and Destruction Facility Tooele Chemical Agent Disposal Facility Umatilla Chemical Agent Disposal Facility Blue Grass Chemical Agent Destruction Pilot Plant* Pueblo Chemical Agent Destruction Pilot Plant*

* Facility under construction as at the end of 2008.

- 3.6 Of the 24 systematic inspections of CWSFs conducted in 2008, two were final inspections, namely, at the Kambarka CWSF in the Russian Federation and the Newport CWSF in the United States of America. During these inspections, OPCW inspection teams confirmed that all chemical weapons previously stored at those CWSFs had been either transferred to a CWDF for destruction or withdrawn in accordance with the Convention. The two CWSFs are now considered closed, and are thus no longer subject to systematic verification. Fifteen CWSFs (one in India, one in the Libyan Arab Jamahiriya, five in the Russian Federation, and eight in the United States of America) remained under systematic verification at the end of the review period.

Progress in meeting destruction obligations

Overall progress in meeting destruction obligations

- 3.7 At the end of the review period, six States Parties had between them declared a total of 71,316.192 MTs of chemical weapons (69,550.109 MTs in Category 1 and 1,766.083 in Category 2), contained in 8,262,837 munitions and containers. Approximately 43% of these chemical weapons, or a total of 30,463.699 MTs (29,548.124 MTs in Category 1 and 915.575 MTs in Category 2), had been verified as destroyed. These States Parties had also declared 416,313 items of Category 3 chemical weapons, which had been destroyed in accordance with the Convention's

deadline. The following destruction had been verified by the Secretariat as at 31 December 2008:

- (a) Category 1 chemical weapons: The Secretariat had verified the destruction of 29,548.124 MTs of these chemical weapons, 28,328.164 MTs of which were unitary chemical weapons (4,115.293 MTs in 2008), including lewisite, sarin (GB), sulfur mustard (including H, HT, and HD), and tabun (GA), VX, and Vx, contained in 2,599,126 munitions and containers (230,500 destroyed in 2008), as well as in other storage vessels that had a volume of less than 2m³ and in larger-volume storage tanks, from which the chemical-warfare agent had been drained. Another 1,219.960 MTs were binary chemical weapons, which included the following: 489.416 MTs of the key binary components DF (15.859 MTs in 2008) and QL, as well as 730.545 MTs of another binary component, OPA (6.125 MTs destroyed in 2008). Overall, the Secretariat had verified the destruction of 785,066 binary items (14,672 items destroyed in 2008), including 415,108 artillery projectiles, 369,958 separately declared DF and OPA canisters, and 306 other containers for binary components.
- (b) Category 2 chemical weapons: The Secretariat had verified the destruction of 915.575 MTs (0.010 MTs in 2008) of Category 2 chemical weapons: a chloroacetophenone CNS, thiodiglycol (TDG), 2-chloroethanol (2-CE), phosgene, sodium sulphide, sodium fluoride, chloroacetophenone (CN), and adamsite (DM); and 3,847 artillery projectiles.
- (c) Category 3 chemical weapons: Prior to 2008, the Secretariat had verified the destruction of all 416,313 items of Category 3 chemical weapons declared to the OPCW.

A State Party

- 3.8 The Conference at its Eleventh Session extended to 31 December 2008 the deadline for completion of the destruction of all chemical weapons stockpiles for A State Party, which had previously met its extended 20% and 45% destruction deadlines¹⁰. Ahead of that deadline, A State Party completed the destruction of all its declared Category 1 chemical weapons on 10 July 2008. Prior to that, by October 1999, A State Party had completed destruction of all items of declared Category 3 chemical weapons. It has not declared any Category 2 chemical weapons.

¹⁰ C-11/DEC.12, dated 8 December 2006.

India

- 3.9 India was granted an extension of the deadline for the destruction of all of its Category 1 chemical weapons stockpiles¹¹. This was the first extension requested by India for the destruction of its chemical weapons. According to the extension granted by the Conference, India is due to destroy all of its Category 1 chemical weapons stockpiles no later than 28 April 2009. At the end of 2008, India had destroyed 98.52%, of its Category 1 chemical weapons. It had also destroyed all of its declared Category 2 and Category 3 chemical weapons.

Libyan Arab Jamahiriya

- 3.10 In 2006, the Conference established new dates for the intermediate destruction deadlines for the Libyan Arab Jamahiriya: phase 1 (1%) to be completed by 1 May 2010; phase 2 (20%) to be completed by 1 July 2010; and phase 3 (45%) to be completed by 1 November 2010. The Conference also granted a deadline extension until 31 December 2010 for the complete destruction of all of its Category 1 chemical weapons stockpiles¹². In the same decision, the Conference called upon the Libyan Arab Jamahiriya to complete the destruction of its Category 2 chemical weapons as soon as possible, but in any case, not later than 31 December 2011. No destruction activities took place in the Libyan Arab Jamahiriya during the review period. Consequently, destruction levels remained at 0% of its Category 1 chemical weapons and 39% of its Category 2 chemical weapons (246.625 MTs of sodium sulphide and 304.725 MTs of sodium fluoride). The Libyan Arab Jamahiriya has destroyed all of its declared Category 3 chemical weapons (3,563 items).

Russian Federation

- 3.11 The Conference established 31 December 2009 as the extended intermediate deadline for the destruction of 45% of the Russian Federation's declared stockpile of Category 1 chemical weapons¹³, and 29 April 2012 as the final extended destruction deadline for Category 1 chemical weapons¹⁴ in the Russian Federation. In 2008, the Secretariat verified the destruction of 2,183.557 MTs of Category I chemical weapons (6,359.961 MTs in 2007) at two destruction facilities, located at Kambarka and Maradykovsky. As at 31 December 2008, the Russian Federation had destroyed 11,946.102 MTs, or 29.8%, of its declared stockpile of Category 1 chemical weapons. The Russian Federation has destroyed all its declared Category 2 chemical weapons (10.616 MTs) and Category 3 chemical weapons (330,024 items).

¹¹ C-11/DEC.16, dated 8 December 2006.

¹² C-11/DEC.15, dated 8 December 2006.

¹³ C-11/DEC.14, dated 8 December 2006.

¹⁴ C-11/DEC.18, dated 8 December 2006.

United States of America

- 3.12 The Conference has established 29 April 2012 as the final extended destruction deadline for Category 1 chemical weapons in the United States of America¹⁵. In 2008, the United States of America, using eight destruction facilities, destroyed 1,874.817 MTs of chemical weapons¹⁶ (3,082.518 MTs in 2007). This included 0.010 MTs of Category 2 chemical weapons (a-chloroacetophenone (CNS) contained in three 4.2-inch cartridges), which were declared and destroyed during the review period. As at 31 December 2008, the United States of America had destroyed 15,949.481 MTs, or 57.44%, of its declared stockpile of Category 1 chemical weapons. The State Party had also completed the destruction of its Category 3 chemical weapons prior to the deadline (80,968 items).

4. CHEMICAL WEAPONS PRODUCTION FACILITIES

Overview

- 4.1 The Secretariat conducts inspections to verify progress at those CWPFs that have not yet been fully destroyed or converted for purposes not prohibited under the Convention¹⁷. Verification ceases once the Director-General certifies that destruction has been completed at a CWPF, whereas facilities that have been certified as converted remain subject to systematic inspections for at least 10 years.
- 4.2 In 2008, the Secretariat carried out 11 inspections at seven CWPFs in four States Parties, which amounted to 197 inspection days.
- 4.3 Between entry into force of the Convention and 31 December 2008, 65 CWPFs were declared to the OPCW by 12 States Parties. All but four of those had been destroyed or converted for purposes not prohibited at the end of the review period. No CWPF completed destruction or conversion operations in 2008, and the following four declared CWPFs remained to be destroyed or converted at the end of the review period:
- (a) Last remaining CWPF in India (temporarily converted to a CWDF to be destroyed upon completion of chemical weapons destruction);
 - (b) Rabta Pharmaceutical Factory 1, Libyan Arab Jamahiriya (to be converted);
 - (c) Rabta Pharmaceutical Factory 2, Libyan Arab Jamahiriya (to be converted);
 - (d) Facility for production of a Vx-type substance and filling it into munitions, Federal State Unitary Enterprise (FGUP) GosNIIOKhT, Novocheboksarsk, Russian Federation (to be converted).

¹⁵ C-11/DEC.17, dated 8 December 2006.

¹⁶ This figure represents the amount of Category 1 chemical weapons destroyed at CWDFs, and does not include what was withdrawn for purposes not prohibited by the Convention.

¹⁷ See subparagraph I(c) of Article III, and Article V of the Convention, as well as Part V of the Verification Annex.

- 4.4 As at 31 December 2008, the Secretariat had confirmed the destruction of 42 CWPFs and certified the conversion of 19 others. Verification activities had ceased at the destroyed CWPFs, while verification continued in accordance with the Convention at the 19 converted former CWPFs in A State Party (one facility), the Russian Federation (15 facilities), and the United Kingdom of Great Britain and Northern Ireland (three facilities).

Residual production capacity

- 4.5 The Convention provides that States Parties shall reduce residual production capacity (RPC) at their former CWPFs to zero level ten years after the entry into force of the Convention, that is, by 29 April 2007 (see Table 5). For the Libyan Arab Jamahiriya, RPC was due to reach zero by 29 July 2008, as per the approved conversion request for its remaining CWPFs. In 2007, the Libyan Arab Jamahiriya informed States Parties that it expected to complete conversion of its two CWPFs after the approved date, but not later than December 2009.

TABLE 5: REQUIREMENTS REGARDING RESIDUAL PRODUCTION CAPACITY

No.	Period After Entry into Force	Date	RPC
1.	End of year 5	29 April 2002	60%
2.	End of year 8	29 April 2005	20%
3.	End of year 10	29 April 2007	0%

- 4.6 By 29 April 2007, the zero RPC level had been reached at 61 of the 65 declared CWPFs in nine of the 12 States Parties that had declared CWPFs. By the end of 2008, the Secretariat assessed the RPC for all States Parties that had declared CWPFs and found that the remaining RPC was 3.19 for India, 9.74 for the Libyan Arab Jamahiriya, and 8.69 for the Russian Federation.

5. OLD AND ABANDONED CHEMICAL WEAPONS

Overview

- 5.1 With regard to OCWs, the Secretariat's verification work includes inspections at declared storage sites in States Parties declaring OCW holdings, in order to verify the consistency of any changes (recoveries or destruction) reported in the semi-annual declarations. The Secretariat carries out inspections to monitor ongoing activities at recovery/excavation and storage sites for ACWs. Moreover, once destruction activities are initiated with respect to chemical weapons abandoned by Japan on the territory of China, it is foreseen that such activities will also be subject to systematic verification by the Secretariat.
- 5.2 In 2007, the Council granted Italy an extended deadline for the destruction of all of its declared OCWs until 29 April 2012. The Council had granted a similar request by China and Japan in 2006 with regard to chemical weapons abandoned by Japan on the territory of China, establishing the same extended destruction deadline.

Declared stocks

- 5.3 Between the entry into force of the Convention and 31 December 2008, 13 States Parties—Australia, Austria, Belgium, Canada, France, Germany, Italy, Japan, the Russian Federation, Slovenia, the Solomon Islands, the United Kingdom of Great Britain and Northern Ireland, and the United States of America—had declared a total of 54,858 OCWs produced before 1925 (seven States Parties) and 69,369 produced between 1925 and 1946 (nine States Parties). At the end of the review period, eight States Parties had stored around 41,000 OCWs on their territories.
- 5.4 As at 31 December 2008, the number of States Parties that had declared ACWs on their territories remained at three: China, Italy, and Panama. Japan had declared ACWs on the territory of China. At the end of the period under review, around 46,600 chemical weapons abandoned by Japan on the territory of China were being kept at storage sites in China.

Verification activities

- 5.5 New OCW discoveries were declared by nine States Parties in 2008. The Secretariat conducted seven OCW inspections in seven States Parties during the year. No significant verification issues were encountered during any of these inspections.
- 5.6 The Secretariat conducted six ACW inspections, each of which concerned chemical weapons abandoned by Japan on the territory of China.
- 5.7 With regard to Japanese ACWs in China, recovery and excavation operations continued throughout the year, and, with the announcement of plans to introduce mobile destruction technologies in the near future, the two States Parties continued their preparations for the next major phases of recovery and destruction in China. The Secretariat, China, and Japan met twice in 2008 to discuss the anticipated increase in activity in 2009 and 2010 and the verification measures the OPCW might take in response.

6. INDUSTRY VERIFICATION

Overview

- 6.1 States Parties to the Convention undertake to declare facilities and activities related to chemicals that are listed in Schedule 1, 2, and 3 of the Convention's Annex on Chemicals—as well as OCPFs that produce discrete organic chemicals (DOCs)—for purposes not prohibited by the Convention.
- 6.2 At the end of the review period, 5,633 facilities and plant sites worldwide were declared in connection with the industry verification regime.
- 6.3 In 2008, the Secretariat verified, through on-site inspections, the declared activities at 200 Article VI facilities and plant sites. This comprised 11 Schedule 1 facilities, 42 Schedule 2 plant sites, 29 Schedule 3 plant sites, and 118 OCPF plant sites. IRFAs were recorded in connection with two Schedule 1 inspections and seven Schedule 2

inspections. With regard to Schedule 1 inspections, IRFAs were recorded because of differences between the declared and verified figures for production, consumption, storage, closing stocks, and transfers of some Schedule I chemicals. The most common reason for IRFAs resulting from Schedule 2 inspections concerned incomplete declarations for newly declared plant sites. In five cases, while the States Parties had submitted declarations of past or anticipated activities, the inspection team found that the plant sites carried out declarable activities within the three calendar years preceding their initial declaration, an occurrence that had not been fully covered in the annual declarations on past activities (ADPAs) submitted by the States Parties. In connection with two inspections at which IRFAs were recorded, the production, processing, or consumption of the Schedule 2 chemicals was correctly declared, but import or export data was missing. In all cases, the necessary declarations and/or amendments to ADPAs were received by the Secretariat and the inspection files were closed.

- 6.4 The year 2008 saw a lower overall number of States Parties receiving inspections, a higher usage of sequential inspections, a lower number of inspections at plant sites that turned out to be non-inspectable, and a lower average inspection team size at Schedule 3 plant sites and at OCPFs. It also saw the completion of the start-up phase for the use of S&A during Schedule 2 subsequent inspections, and the release of the Secretariat's software for preparing Article VI declarations in electronic form.

Sampling and analysis at Schedule 2 plant sites

- 6.5 In 2005, the Director-General announced that, beginning in September 2006, on-site S&A would be used during Schedule 2 inspections, in order to provide the Secretariat with a useful tool to verify the absence of undeclared scheduled chemicals¹⁸. During the start-up period—from September 2006 to March 2008—S&A was carried out at 13 Schedule 2 inspections in 13 States Parties. The objective was for the Secretariat and States Parties to gain the broadest possible experience. Each inspection involving S&A was preceded by meetings between representatives of the Secretariat and the State Party concerned. In some cases, there were also familiarisation visits to the OPCW Laboratory in Rijswijk, which displayed and demonstrated the equipment and procedures used during inspections involving S&A.
- 6.6 The analytical equipment for S&A was used in different environments, including in laboratories outside the inspected plant site. Samples were collected at key points within the plant sites, and analysed by OPCW inspectors using the approved instrumental analytical chemistry methods of gas chromatography combined with mass spectroscopy. The inspections confirmed the Secretariat's ability to conduct inspections using S&A in an effective and professional manner, and in a way that ensured that confidentiality restrictions were strictly maintained.
- 6.7 Based on the lessons learned from the start-up period, the OPCW identified chemicals that had been missing in the OCAD, the addition of which had the potential of improving the implementation of S&A. The spectra for a number of such chemicals were added to the OCAD in order to enable inspectors better to identify such

¹⁸ See paragraph 28 of Part VII of the Verification Annex.

chemicals during inspections using S&A. The OPCW Laboratory was also tasked with investigating the possibility of developing semi-quantitative analytical procedures that would allow the team to evaluate the approximate concentration of the chemicals identified. In this way, in case of a positive identification, the question of whether a scheduled chemical was below or above the low-concentration threshold would be unequivocally answered.

- 6.8 In the view of the Secretariat, S&A is a valuable additional tool in the verification process. Over time, the procedures for S&A are expected to become more efficient as they are streamlined and as more implementation experience is gained, so that the best possible use may be made of S&A as a verification tool.

Non-inspectable other chemical production facilities

- 6.9 In the year 2008, the number of inspections conducted at sites that proved to be not inspectable decreased significantly, from 13 in 2007 to five in 2008, which is equal to the number recorded in 2006.
- 6.10 The causes for the five inspections at non-inspectable sites can be grouped in two categories, namely:
- (a) the failure of the States Parties concerned to update their OCPF declarations in a timely manner; and
 - (b) errors in the interpretation of the OCPF declaration requirements.

By way of example of the first category, an inspection was carried out in 2008 to a plant site that had ceased all production activities, while the declarations covering its activities had not been updated to reflect this new state of affairs. From the second category, there were two inspections to plant sites where the aggregate DOC production was below the declaration threshold of 200 MTs. In two other cases, there were inspections to plant sites where none of the chemicals produced was a DOC (in one case, only oligomers were being produced; in the other case, only polymers were being produced).

- 6.11 The Secretariat has continued to highlight to States Parties the need to review and update their lists of declared OCPFs through bilateral meetings, presentations at workshops, and reconciliation letters that are sent out every year. In 2008, in part as a result of this work, several additional States Parties submitted updated ADPAs, where relatively large numbers of no longer declarable OCPFs had been removed; however, the overall number of declared OCPFs did not change significantly, given that new OCPFs were declared during the same period.

Transfers of scheduled chemicals

Transfers of scheduled chemicals between States Parties

- 6.12 According to 26 notifications that the Secretariat received concerning the transfers of Schedule 1 chemicals received in 2008, six States Parties were anticipated to be involved in 16 Schedule 1 transfers during the year, including three exporting and four importing States Parties. The total amount of Schedule 1 chemicals to be transferred in 2008 was 8.057 kg. Ten transfers anticipated to take place in 2008 were notified by both the sending and receiving States Parties.
- 6.13 The ADPAs for 2007 provided by States Parties in 2008 indicate that 43 had transferred Schedule 2 chemicals in 2007 and 119 had transferred Schedule 3 chemicals in that year. The total reported volume of trade in 2008 came to approximately 5,500 MTs of Schedule 2 chemicals and 298,000 MTs of Schedule 3 chemicals.

Transfers of scheduled chemicals to States not Party to the Convention

- 6.14 No transfers of Schedule 2 chemicals to States not Party in 2007 were reported to the Secretariat. Twelve States Parties reported exports in 2007 of six Schedule 3 chemicals to seven States not party, with total exports amounting to 3,128 MTs, whereby thionyl chloride accounted for 48% of the those exports.

Optimisation of verification activities

- 6.15 During the review period, the Secretariat continued its ongoing efforts to optimise the size of inspection teams, depending on the type of facility or plant site and with due regard for the need to ensure that the teams remain able to fulfil the inspection mandate. The year 2008 also saw a higher usage of sequential inspections. Sequential inspections are an important efficiency measure, and further efficiencies could be achieved should additional States Parties agree to the conduct of sequential inspections on their territories, in particular those with large numbers of yearly Article VI inspections.
- 6.16 In 2008, the Secretariat made available the first version of the EDNA. This gives States Parties the option of using the EDNA to prepare their OCPF declarations, and their aggregate national data (AND) declarations for Schedule 2 and 3 chemicals. The electronic declaration is stored by the State Party's National Authority on a CD-ROM that is submitted to the Secretariat. In 2009, EDNA was to be expanded to Schedule 1, Schedule 2, and Schedule 3 facility data.

Secretariat support to consultations on Article VI issues

- 6.17 The Secretariat continued to provide support to the facilitators of the Industry Cluster, which, in 2008, considered the topics of:
- (a) transfer discrepancies in AND declarations;
 - (b) enhancement of OCPF declarations; and
 - (c) applicable concentration limits for mixtures of chemicals containing Schedule 2A and 2A* chemicals.

7. OTHER VERIFICATION-RELATED ACTIVITIES

Implementation matters

- 7.1 This section provides information about a few ongoing matters that constitute challenges to the Secretariat's ability to effectively discharge its verification responsibilities. This is not an exhaustive list. By highlighting these subjects, the Secretariat is giving States Parties an opportunity to see how they are affected by remedial action taken by the Secretariat and States Parties, and how the challenges develop over time.

Outstanding initial declarations

- 7.2 Despite ongoing efforts to remind States Parties with outstanding declarations of their obligations and to provide declaration training to States Parties' representatives, a number of States Parties have still not submitted their initial declarations, as required pursuant to the Convention. The Secretariat is not able to fulfil its verification tasks with regard to these States Parties.

Follow-up actions

- 7.3 Since the entry into force of the Convention, the Secretariat has reminded States Parties of their declaration obligations through, inter alia, reminder letters, bilateral meetings, and presentations at regional and subregional meetings and workshops.
- 7.4 In November 2007, the Council adopted a decision on the timely submission of Article VI declarations, by which it requested, inter alia, that all the States Parties concerned ensured that their Article VI declarations were submitted on time, and that the Secretariat continued to inform States Parties of their reporting requirements. It also called on States Parties to inform the Secretariat of the circumstances for not meeting their reporting obligations, and asked them to indicate whether they would welcome assistance from the Secretariat in order to meet their obligations.

Progress and status

- 7.5 In 2008, the Secretariat received initial declarations from the following five States Parties pursuant to Article III and/or Article VI of the Convention: Afghanistan,

Liberia, Mozambique, Suriname, and Yemen. That means that, by the end of 2008, 172 of the 185 States Parties¹⁹ had submitted their initial declarations.

7.6 As at 31 December 2008, the following 13 States had not yet submitted their required initial declarations pursuant to the Convention: Barbados (6 May 2007), Cambodia (17 September 2005), Cape Verde (9 December 2003), the Comoros (17 October 2006), the Congo (2 February 2008), Guinea-Bissau (19 July 2008), Haiti (23 April 2006), Lebanon (19 January 2009), Niue (20 June 2005), Timor-Leste (6 July 2003), Tonga (28 July 2003), Tuvalu (19 March 2004), and Vanuatu (15 November 2005).

7.7 In addition, two States Parties—Kiribati and the Solomon Islands—had yet to submit their initial declarations under Article VI, and one, Saint Vincent and the Grenadines, had yet to submit its chemical weapons-related initial declaration pursuant to Article III of the Convention. These States Parties' initial declarations thus remained unfinished at the end of the review period.

Outstanding or late annual declarations

7.8 In order for the OPCW to be able to continue to perform its verification tasks effectively, it is of the utmost importance that States Parties continue to submit ADPAs and annual declarations on anticipated activities (ADAAs) in a timely manner. When planning its inspection activities, the Secretariat uses the most recent information available on file, in order to determine inspectable facilities and plant sites and the relevance of these for the object and purpose of the Convention. Outdated information not only leads to erroneous site selections, but also risks increasing the rate of inspections at non-inspectable sites. Both of these scenarios involve an inefficient use of inspection resources. In addition, late submission of AND can cause transfer discrepancies, thus resulting in unnecessary requests for clarification. This imposes a burden on States Parties that have submitted their AND declarations on time, but then receive a request for clarification of a transfer discrepancy due to the late submission by the other State Party involved in the transfer.

Follow-up actions

7.9 In order to avoid the above scenarios, the Secretariat has consistently recommended that States Parties submit their ADPAs and ADAAs in full and on time, including, where applicable, nil declarations, so that the Secretariat has access to up-to-date information on any facilities that are involved in declarable activities.

Progress and status

7.10 Eighty-four States Parties submitted ADPAs for 2007 during 2008. These included:

- (a) thirty-eight States Parties that met the deadline of 30 March 2008;

¹⁹ See also footnote 1.

- (b) forty-two States Parties that submitted their ADPAs for 2007 between 31 March and 31 December 2008; and
 - (c) four States Parties that had submitted ADPAs for 2007 with no declarable facilities and activities (nil declarations).
- 7.11 By the end of the review period, the Secretariat had received ADAAs for 2009 from 49 States Parties. These included:
- (a) thirty-seven States Parties that met the deadline for submitting their required 2009 ADAAs (19 States Parties for Schedule 1 chemicals and facilities (2 October deadline); and 36 for Schedule 2 and 3 chemicals and facilities (2 November deadline));
 - (b) seven States Parties that submitted their required ADAAs for 2009 after the deadline, but before 31 December 2008; and
 - (c) six States Parties that reported no declarable facilities or activities (nil declarations).
- 7.12 The Council, in its 2007 decision related to timely declarations, requested that States Parties anticipating difficulties in the timely submission of their declarations inform the Secretariat at the earliest possible date of the circumstances of such difficulties. The reasons given by States Parties for missing the deadline of ADAAs for 2009 all fall under the category of “logistical difficulties with regard to the transmission of declarations to the Secretariat” (six States Parties).

Transfer discrepancies

- 7.13 Since entry into force of the Convention, discrepancies between the Schedule 2 and 3 transfer data provided by the importing States Parties and those provided by the exporting States Parties in respect of the same transfer have been of such magnitude (approximately 76% of transfers between States Parties have discrepancies) that data monitoring for non-proliferation purposes is very difficult to achieve. One reason for this is that, until recently, there has been no common understanding of the meaning of the terms “import” and “export” for declaration purposes. A 2002 Conference decision²⁰ contained guidelines for reporting ANDs, but it stopped short of containing such a definition.

Follow-up actions

- 7.14 In 2008, the Conference adopted a decision setting out voluntary guidelines for the declaration of import and export data for Schedule 2 and 3 chemicals²¹, with the intention of reducing the number of transfer discrepancies. This decision, which focused on the physical movement of scheduled chemicals, rather than on customs

²⁰ C-7/DEC.14, dated 10 October 2002.

²¹ C-13/DEC.4, dated 3 December 2008.

procedures, included a definition of the meaning of the terms “import” and “export” (albeit solely for the purposes of submitting declarations).

- 7.15 The Second Review Conference encouraged the Secretariat to continue efforts to resolve ambiguities and discrepancies in close consultation with the States Parties, and to provide them with appropriate assistance²². In this regard, the Secretariat organised several regional and national workshops in 2008, to provide in-depth training for customs authorities on practical ways of implementing the transfer provisions of the Convention with a view to reducing discrepancies.

Progress and status

- 7.16 Based on AND declarations on exports and imports for 2007 received by the Secretariat in 2008, the equivalent of 194 Schedule 2 transfers between States Parties and 495 Schedule 3 transfers between States Parties were above the applicable declaration thresholds. Of these, 49% of Schedule 2 transfers (47% in the preceding year) and 34% of Schedule 3 transfers (34%) were declared by just one of the two States Parties involved.
- 7.17 According to the aforementioned decision of the Conference²¹, the Secretariat is tasked with reporting back to the Council in 2011 about the progress achieved following the adoption of the voluntary export/import guidelines. The Secretariat will continue to monitor how the situation evolves in the coming years.

Status of required declarations

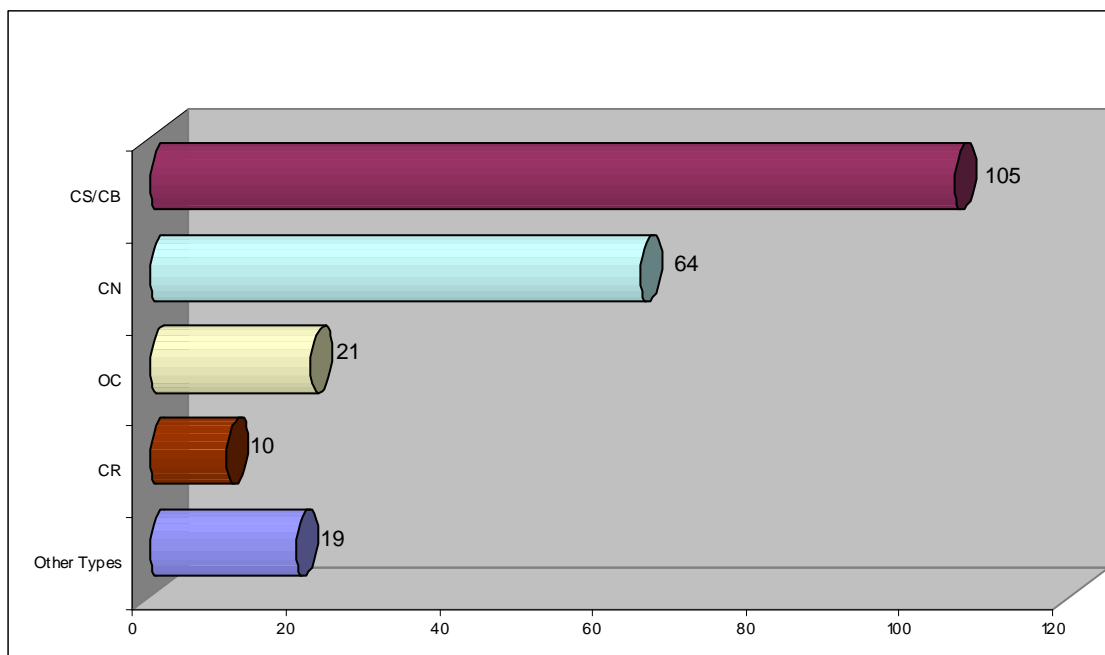
Riot control agents

- 7.18 During the period under review, three States Parties—Afghanistan, Liberia, and Mozambique—submitted their initial RCA declarations, although the declarations received from Liberia and Mozambique were deemed incomplete. Two States Parties—the Islamic Republic of Iran and Yemen—submitted amendments providing updated information on RCAs to their initial declarations.
- 7.19 By the end of the reporting period, RCA information was missing from two of the 171 States Parties having submitted Article III declarations—Kiribati and the United Republic of Tanzania. Of the 169 States Parties that provided information on their RCAs, 125 had declared possession of RCAs, while 44 States Parties declared that they did not possess RCAs. Sixteen of the 125 States Parties that declared possession of RCAs had yet to provide other information required under subparagraph 1(e) of Article III of the Convention (namely, the chemical name of the RCAs, their structural formulas, and Chemical Abstracts Service (CAS) registry numbers, if assigned).

²²

Paragraph 9.45 of RC-2/4.

FIGURE 1: NUMBER OF STATES PARTIES HAVING DECLARED RIOT CONTROL AGENTS - BY TYPE OF AGENT²³



7.20 As at 31 December 2008, 28 other facilities primarily for the development of chemical weapons²⁴ had been declared by 10 States Parties. This included 16 proving-and-testing grounds, and 12 laboratories and research-and-defence establishments. At the end of the period under review, four such facilities were being used as research centres or laboratories for defence and protective purposes, or for OCW destruction.

Handling of declarations

Clarification of declarations

7.21 In 2008, the Secretariat issued a single request for clarification (RFC) addressing inspectability-related issues, involving the non-submission of declarations for a Schedule 3 plant site. In addition, a small number of other inspectability-related issues were identified during the period. In each case, these issues were quickly resolved through discussions between the Secretariat and the States Parties concerned, without the need for RFCs to be issued.

Processing of declarations

7.22 In 2008, the Secretariat received 903 declarations and other verification-related documents, comprising 18,816 pages, from States Parties. Five hundred and

²³

Legend for RCAs and CAS registry numbers:

CS/CB = 2698-41-1: (2-chlorophenyl)-methylene; propanedinitrile

CN = 532-27-4: 2-chloro-1-phenyl-ethanone

OC = 404-86-4: (6E)-N-(4-hydroxy-3-methoxybenzyl)-8-methylnon-6-enamide

CR = 257-07-8: Dibenz(b,f)-1,4-oxazepine

²⁴

Pursuant to subparagraph I(d) of Article III of the Convention.

twenty-one, or 58%, of these documents, comprising 3,119 pages, were unclassified. However, the majority of the pages that were received continued to be classified: 142 documents (8,733 pages) were classified as “OPCW Highly Protected”, 94 (4,426 pages) as “OPCW Protected”, and 146 (2,538 pages) as “OPCW Restricted”. In other words, 42% of the documents (38% in 2007), and 83% of the pages (84% in 2007) were classified. There was little or no significant change from previous years in the classification profile of the declarations or other verification-related documents submitted by States Parties in 2008. All the steps required for the processing of these documents—that is, the registration, classification-marking, database input, scanning, indexing, photocopying, document control, and checking—along with the evaluation of the verification-related information in the documents—continued to require substantial resources in 2008 in order to ensure continuing compliance with the requirements of the OPCW confidentiality regime.

- 7.23 In accordance with the Convention²⁵, the Secretariat provides redacted information on ADPAs and ADAAs to a number of States Parties each year. In 2008, the Secretariat, for the first time, provided redacted information on ADPAs for 2007 in electronic form.
- 7.24 Thirty-five States Parties received redacted information in hard copy. Almost 86,000 pages from declarations containing information classified up to and including “OPCW Highly Protected” were provided to these States Parties in 2008. Seventeen States Parties received information on CD-ROM. The information that was provided included classified materials, including material that was “OPCW Highly Protected”. While only two States Parties relied exclusively on the data provided on CD-ROM in 2008 (the 15 States Parties concerned received information both in hard copy and on CD-ROM), this way of providing information could potentially lead to a substantial reduction in the workload with regard to the dissemination of information.

Electronic declarations

- 7.25 Seven States Parties provided their original ADPAs for 2007, either solely or additionally in electronic format, and the same number of States Parties submitted their original ADAAs for 2009 in electronic format. This facilitated the processing of declarations. In a few cases, where the electronic data provided could not be loaded immediately into the Secretariat’s system, since the technical specifications for electronic submission had not been fully followed, the submitting States Parties were informed accordingly, and formal or content corrections were applied to the data before it could be processed by the Secretariat.
- 7.26 It is expected that the EDNA will lead to an increased number of States Parties providing declarations electronically. Since the EDNA informs the user of when the technical specifications for electronic declarations are not followed, the use of the EDNA by States Parties could potentially eliminate the need for corrections to the submitted electronic declarations.

²⁵

See subparagraph 2(b)(i) of the Confidentiality Annex to the Convention.

8. TECHNICAL SUPPORT FOR VERIFICATION ACTIVITIES

OPCW Laboratory accreditation

- 8.1 On 31 October 2008, the Dutch Accreditation Council, the *Raad voor Accreditatie* (RVA), conducted its annual surveillance assessment of the OPCW Laboratory. One nonconformity was noted, which the Secretariat addressed within the required timeframe. The Laboratory also received two internal audits by the Office of Internal Oversight (OIO) in 2008, as part of the OPCW quality-management system (QMS). All nonconformities and other observations had been addressed by the end of the reporting period.

OPCW Laboratory reorganisation

- 8.2 The year 2008 saw the implementation of an internal reorganisation, whereby the OPCW Equipment Store in Rijswijk, the Netherlands, was separated functionally from the OPCW Laboratory. While the OPCW Laboratory continues to report to the Director of Verification, the equipment store is now part of the Inspectorate Division.
- 8.3 In 2008, the Secretariat completed the Twenty-Second (initiated in October 2007) and the Twenty-Third Official OPCW Proficiency Tests. It also started the Twenty-Fourth test, which will be completed in early 2009. As a result of the tests conducted in 2008, the Director-General designated one new laboratory, namely, the Centre for Analysis of Chemical Toxins of the Indian Institute of Chemical Technology. Moreover, for several designated laboratories, the suspended status was lifted. The attachment provides a list of designated laboratories as at 31 December 2008. Information about the outcome of the tests is contained in Table 6 below.

TABLE 6: SUMMARY OF THE TWENTY-SECOND, TWENTY-THIRD, AND TWENTY-FOURTH OFFICIAL OPCW PROFICIENCY TESTS

	Twenty-Second Proficiency Test	Twenty-Third Proficiency Test	Twenty-Fourth Proficiency Test
Sample preparation	Laboratory for CWC Verification, Military Institute of Chemistry and Radiometry, Poland	Fabrica Nacional La Marañosa, Spain	OPCW Laboratory
Evaluation of the results	The Defence Science and Technology Laboratory (Dstl), United Kingdom	Defence Laboratories Department (DLD), Belgium	Lawrence Livermore National Laboratory Forensic Science Center, United States
Number of nominations ²⁶	22	16 for regular participation 7 for trial participation	27
Results	14 As; 0 Bs; 2 Cs; 4 Ds; 1 failure; 1 withdrawn	8 As; 2 Bs; 1 Cs; 3 Ds; 1 failure; 1 withdrawn	Will be made available in 2009

²⁶

Including sample preparation/evaluation laboratory.

OPCW Central Analytical Database

- 8.4 The Validation Group met on two occasions in 2008 and recommended the inclusion of 424 new spectra in the OCAD. The Council subsequently approved 387 new spectra, and also endorsed the Secretariat's proposal that 10 spectra be eliminated. These changes were incorporated into the new version of the OCAD (v.11_2008), which was certified by the OIO and released in December 2008. The contents of the OCAD approved by the Council by the end of 2008 are as presented in the table below:

TABLE 7: CONTENTS OF THE OPCW CENTRAL ANALYTICAL DATABASE

Number of Analytical Data in the OCAD (Status at the End of Each Year)								
	2001	2002	2003	2004	2005	2006	2007	2008
MS ²⁷	1495	2138	2824	3372	3476	3571	3742	3940
IR ²⁸	670	670	713	811	859	903	921	925
NMR ²⁹	1255	1305	1389	1389	1389	1389	1389	1391
GC(RI) ³⁰	2011	2598	3482	4244	4250	4356	4370	4616

- 8.5 The Council approved the addition to the OCAD of spectra for a number of Schedule 2 chemicals that were declared by States Parties, but had not yet been included in the OCAD. Specific spectra were sought from designated laboratories, and, in addition, the OPCW Laboratory measured the retention index and spectra for a number of such chemicals, which were subsequently included among the newly approved OCAD data.
- 8.6 In 2008, the Secretariat implemented changes to the OCAD that would allow the system to be fully maintained using software supported by the Secretariat. In addition, software tools to allow the members of the Validation Group to directly access the OCAD remotely in order to improve the validation process were deployed.

OPCW Laboratory support for sampling and analysis for verification purposes

- 8.7 The Laboratory continued to support inspection teams in verification activities related to on-site S&A, by providing extracts from the OCAD in hard copy and in electronic form issued to inspection teams. All such hard copy and electronic data are provided with an OIO certificate of authenticity.
- 8.8 The Laboratory calibrated, prepared, and launched the gas chromatography-mass spectrometry (GC-MS) instruments for nine inspections involving S&A in 2008. In each case, the instrumentation was fully certified by the OIO.

²⁷ MS = mass spectrometry.

²⁸ IR = infrared.

²⁹ NMR = nuclear magnetic resonance spectrometry.

³⁰ GC(RI) = gas chromatography-retention indices.

- 8.9 Assistance and support were provided to the analytical-chemist inspectors, in preparation for Schedule 2 inspections involving S&A. This included acquiring the chemicals needed to emulate process streams and consultations on the methods used for analysing the results.

Approved equipment

- 8.10 During the course of the year, the Secretariat notified States Parties about the procurement of approved equipment, and invited them to familiarise themselves with all the operational characteristics before the equipment was placed into service. Such inspection equipment and laboratory-familiarisation visits by seven States Parties were hosted by the Secretariat in 2008.

Training

Training of new inspectors

- 8.11 The Laboratory trained four new Group H inspectors, who are analytical chemists, in OPCW S&A procedures. The OPCW Laboratory also provided a series of lectures on the basic aspects of chemical weapons analysis for this group.
- 8.12 The Laboratory prepared samples for 10 certification exercises for these analytical chemists and prepared samples and instruments for a two-week training course in Wassenaar, the Netherlands.

Training provided to States Parties

- 8.13 In 2008, the Secretariat hosted laboratory-familiarisation visits by Pakistan and the United States of America.

Attachment

LIST OF DESIGNATED OPCW LABORATORIES³¹

	State Party	Laboratory Name and Address	Laboratory Contact	Date of Designation
1.	Belgium	Defence Laboratories Department (DLD) Kwartier Majoor Housiau Martelarenstraat 181 B-1800 Vilvoorde (Peutie)	Mr Mark Kemps Tel: +32 2755 5816 +32 4688 63177 Fax: +32 2755 5808 Mark.kemps@mil.be	12 May 2004
2.	China	The Laboratory of Analytical Chemistry Research Institute of Chemical Defence P.O. Box 1043 Yangfang Town, Changping District, Beijing 102205	Mr Chongxi Wei Tel: +86 106 976 0259 +86 136 61288823 Fax: +86 106 976 5318 ricdlacl@public.bta.net.cn	17 November 1998
3.	China	Laboratory of Toxicant Analysis Academy of Military Medical Sciences Institute of Pharmacology & Toxicology, Beijing 100850	Mr Jianwei Xie Tel: +86 106 822 5893 +86 13 501189022 Fax: +86 106 822 5893 Xiejw1964@yahoo.com.cn	14 September 2007
4.	Czech Republic	Research Institute for Organic Syntheses, Analytical Department Centre of Ecology, Toxicology and Analytics (CETA)* Rybitvi 296 CZ-532 18 Pardubice	Mr Ivan Kolb Tel: +42 046 682 2145 Fax: +42 046 682 2978	29 June 1999
5.	Finland	Finnish Institute for Verification of the Chemical Weapons Convention (VERIFIN) P.O. Box 55 A.I. Virtasen aukio 1 FIN-00014 University of Helsinki	Mr Martin Söderström Tel: +35 89 191 50438 Fax: +35 89 191 50437 Martin.soderstrom@helsinki.fi	17 November 1998
6.	France	DGA - Centre d'Etudes du Bouchet (CEB) 5 rue Lavoisier P.O. Box 3 F-91710 Vert le Petit	Ms Anne Bossée Tel: +33 1 69908421 Fax: +33 1 64935266 Anne.bossee@dga.defense.gouv.fr	29 June 1999

³¹

An asterisk (*) next to the name of a laboratory means that its status as an OPCW designated laboratory remained suspended as at the end of the reporting period because of the performance in a recent official OPCW Proficiency Test. These laboratories will not be considered for receipt of samples taken for off-site analysis until they perform satisfactorily in future OPCW Proficiency Tests.

	State Party	Laboratory Name and Address	Laboratory Contact	Date of Designation
7.	Germany	Armed Forces Scientific Institute for Protection Technologies NBC Protection (WIS-120) P.O. Box 1142 Humboldtstrasse 1 D- 29633 Münster	Mr Damian Mageria Tel: +49 51 92 13 6433 Fax: +49 51 92 13 6355 Damian.magiera@bwb.org	29 June 1999
8.	India	Defence Research & Development Establishment VERTOX Laboratory Jhansi Road Gwalior 474002	Mr D.K. Dubey Tel: +91 751 2233488 Fax: +91 751 2341148 dkdubey@rediffmail.com	18 April 2006
9.	India	Centre for Analysis of Chemical Toxins (CACT) Indian Institute of Chemical Technology (IICT) Tarnaka, Hyderabad 500 607	Mr R. Srinivas Mr J.S. Yadav Tel: +91 4027193482 Fax: +92 40 7193156 srini@iict.res.in sragampeta@yahoo.co.in	
10.	Netherlands	TNO Defence, Security and Safety Lange Kleiweg 137 NL-2288 GJ Rijswijk	Ms Marieke van Deursen Tel: +31 15 284 3831 Fax: +31 15 284 3991 Marieke.vandeursen@tno.nl	17 November 1998
11.	Poland	Laboratory for Chemical Weapons Convention Verification Military Institute of Chemistry and Radiometry* a1. Antoniego Chrusciela 105 PL-00-910 Warsaw	Mr Andrzej Chalas Tel: +48 22 516 9931 Fax: +48 22 673 5180 Andrzej.chalas@wichir.waw.pl	29 June 1999
12.	Republic of Korea	Chemical Analysis Laboratory, CB Department Agency for Defence Development* 179-1 Su-Nam Dong Yuseong, Taejon 305-600	Mr Deasik Hong Tel: +82 42 821 4670 Fax: +82 42 821 2391 deasikhon@hanmail.et hpark@add.re.kr	17 November 1998
13.	Russian Federation	The Laboratory for the Chemical and Analytical Control of the Military Research Centre Brigadirsky pereulok, 13 105005 Moscow	Mr I. Rybalchenko Tel: +7 495 267 5107 Fax: +7 495 693 3857 riv@lumex.ru	4 August 2000
14.	Singapore	Verification Laboratory DSO National Laboratories Block 6, 11 Stockport Road Singapore 117605	Ms Sng Mui Tiang Tel: +65 6871 2901 Fax: +65 6872 6219 smutian@dso.org.sg	14 April 2003
15.	Spain	Laboratorio de Verificación de Armas Químicas Fábrica Nacional La Marañosa * Carretera San Martin de la Vega. Km. 10.5 San Martin de la Vega Madrid 28330	Mr Juan Carlos Fernández Fernández Tel: +34 91 8098591 Fax: +34 91 8098571 jcfernandez@oc.mde.es aferlop@oc.mde.es	16 August 2004

	State Party	Laboratory Name and Address	Laboratory Contact	Date of Designation
16.	Sweden	Swedish Defence Research Agency (FOI) Division of CBRN Defence Cementvägen 20 SE-901 82 Umeå	Mr Crister Åstot Tel: +46 90 106808 Fax: +46 90 106800 astot@foi.se	17 November 1998
17.	Switzerland	Spiez Laboratory CH 3700 Spiez	Mr Peter Siegenthaler Tel: +41 33 228 1730 Fax: +41 33 228 1402 Peter.siegenthaler@babs.admin.ch	17 November 1998
18.	United Kingdom	Defence Science and Technology Laboratory (Dstl) Porton Down Salisbury, Wiltshire SP4 OJQ	Mr James Riches Mr Robert Reed Tel: +44 1980 61 3397 Fax: +44 1980 61 3834 Jriches_s@dstl.gov.uk rwread@dstl.gov.uk	29 June 1999
19.	United States	Edgewood Chemical and Biological Forensic Analytical Center AMSSB-RRT-CF, Bldg. E5100 5183 Blackhawk Road Aberdeen Proving Ground, MD 21010-5424	Mr Lynn D. Hoffland Tel: +1 410 436 8600 Fax: +1 410 436 3384 Lynn.hoffland@us.army.mil	29 June 1999
20.	United States	University of California Lawrence Livermore National Laboratory Mail Stop L-175 7000 East Avenue Livermore, CA 94550-9234	Mr Armando Alcaraz Tel: +1 925 423 6889 Fax: +1 925 423 9014 alcarazl@llnl.gov	29 June 1999