

The Safeguards Statement for 2003

The Agency's findings and conclusions for 2003 are based upon an evaluation of all the information available to the Agency in exercising its rights and fulfilling its safeguards obligations for that year.

1. Safeguards activities were implemented for 40 States¹ with both comprehensive safeguards agreements in force and additional protocols in force or being otherwise applied. Only for such States are Agency safeguards able to provide credible assurance not only regarding the non-diversion of nuclear material but also regarding the absence of undeclared nuclear material and activities.

- (a) For 19 of those States, the Agency completed sufficient activities and evaluation and found no indication of the diversion of nuclear material placed under safeguards and no indication of undeclared nuclear material or activities for the State as a whole. On this basis, the Agency concluded that all nuclear material within the territories of those States, under their jurisdiction or under their control anywhere had been placed under safeguards and remained in peaceful nuclear activities or was otherwise adequately accounted for.
- (b) For 19 States the Agency found no indication of the diversion of nuclear material placed under safeguards. Evaluations aimed at drawing a conclusion regarding the absence of undeclared nuclear material and activities for each of these States as a whole remain in progress. On this basis, the Agency concluded for these States that the nuclear material placed under safeguards remained in peaceful nuclear activities or was otherwise adequately accounted for.
- (c) The Islamic Republic of Iran and the Libyan Arab Jamahiriya, having been engaged in undeclared nuclear activities, were in breach of their obligations to comply with their respective safeguards agreements.

2. Safeguards activities were implemented for 98 States with comprehensive safeguards agreements in force but without additional protocols in force or being otherwise applied. For those States, the Agency found no indication of the diversion of nuclear material placed under safeguards. On this basis, the Agency concluded that for these States, the nuclear material placed under safeguards remained in peaceful nuclear activities or was otherwise adequately accounted for.

As a result of the unilateral actions of the Democratic People's Republic of Korea (DPRK) to terminate the Agency's safeguards activities in late 2002, the Agency was not able to implement safeguards inspections in the DPRK in 2003 and could not, therefore, draw any safeguards conclusions in respect of nuclear material in that State.

3. Safeguards activities were implemented in four States with INFCIRC/66/Rev.2-type safeguards agreements in force. For those States, the Agency found no indication of the diversion of nuclear material or of the misuse of facilities, equipment or non-nuclear material placed under safeguards. On this basis, the Agency concluded that the nuclear material and other items placed under safeguards remained in peaceful nuclear activities or were otherwise adequately accounted for.

4. Safeguards activities were implemented in selected facilities in four of the five nuclear-weapon States with voluntary offer safeguards agreements in force. For those States, the Agency found no indication of the diversion of nuclear material under safeguards. On this basis, the Agency concluded

¹ Safeguards, including the measures of the Model Additional Protocol, were also applied in Taiwan, China, which has significant nuclear activities. With regard to Taiwan, China, the Agency found no indication of the diversion of nuclear material placed under safeguards, while the Agency's evaluation regarding the absence of undeclared nuclear material and activities was still on-going.

that the nuclear material under safeguards remained in peaceful nuclear activities or was otherwise adequately accounted for.

5. As of the end of 2003, 45 non-nuclear-weapon States party to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) had not yet brought into force comprehensive safeguards agreements with the Agency as required by Article III of that Treaty. For 44 of those States², the Agency could not implement safeguards and could not, therefore, draw any safeguards conclusions.

6. In Iraq, the Agency was able to implement its United Nations Security Council resolution-related mandate in 2003 until 17 March and, as of that time, had not found any evidence or plausible indication of the revival of a nuclear programme. Under its comprehensive safeguards agreement with Iraq, the Agency verified in June 2003 that, in spite of the looting that took place in April 2003, the amount of uranium that may have been dispersed was not of proliferation concern.

² Cuba acceded to the NPT on 4 November 2002. However, in 2003 safeguards were still being applied under INFCIRC/66/Rev.2-type safeguards agreements.

Background to the Safeguards Statement and Executive Summary

1. The Safeguards Statement

1. The text below describes how the Agency derived the safeguards conclusions contained in the Safeguards Statement for 2003. The Safeguards Statement reflects the Agency's findings and conclusions for that year based upon an evaluation of all the information available to it.

1.1. States with Comprehensive Safeguards Agreements and Additional Protocols in Force or otherwise Applied

Coverage

2. As of 31 December 2003, 40 States^{3 4} — as compared with 27 States in 2002 — had both comprehensive safeguards agreements in force and additional protocols in force or otherwise applied. Of these, 25 States are known to have significant nuclear activities⁵. The other 15 States had operational 'small quantities protocols' (SQPs) to their safeguards agreements, which held in abeyance most of the provisions of Part II of their comprehensive safeguards agreements⁶. During 2003, comprehensive safeguards agreements with additional protocols entered into force with Burkina Faso and Georgia and additional protocols to existing comprehensive safeguards agreements entered into force with Chile, the Democratic Republic of the Congo, Cyprus, Iceland, Jamaica, Kuwait, Madagascar and Mongolia. In Ghana, the additional protocol continued to be applied provisionally. By the end of the year, both Iran and Libya had agreed to the implementation of the measures of their additional protocols pending entry into force.

3. Safeguards verification activities were performed in 2003 in the 25 States with significant nuclear activities (17 States in 2002). For the 15 other States, only limited safeguards activities were undertaken because of the minimal amount of nuclear material or activities in those States.

Deriving Conclusions

4. Under a comprehensive safeguards agreement, the Agency has the right and obligation to ensure that safeguards are applied, in accordance with the terms of the agreement, on all source or special fissionable material in all peaceful nuclear activities within the State, under its jurisdiction or carried out under its control anywhere (paragraph 2 of INFCIRC/153 (Corrected)).

5. To be able to draw a conclusion that all nuclear material has been placed under safeguards and remains in peaceful nuclear activities or has been otherwise adequately accounted for, the Agency must draw conclusions of both the non-diversion of declared nuclear material and the absence of undeclared nuclear material and activities for the State as a whole.

³ The additional protocol for the Republic of Korea entered into force on 19 February 2004.

⁴ See footnote 1.

⁵ In the context of this report, a State with 'significant nuclear activities' means a State having any amount of nuclear material in a facility or location outside facilities (LOF) or nuclear material in excess of the limits in paragraph 37 of INFCIRC/153 (Corrected).

⁶ The paragraphs of Part II of INFCIRC/153 (Corr.) not held in abeyance are 33, 34, 39, 42 and 91.

6. For a State with a comprehensive safeguards agreement and an additional protocol in force, the measures provided under an additional protocol have significantly increased the Agency's ability to detect undeclared nuclear material and activities such that the Agency is, therefore, able to draw this broader safeguards conclusion.

Non-Diversion of Declared Nuclear Material

7. The conclusion relating to the non-diversion of declared nuclear material which has been placed under safeguards is drawn for each State. The conclusion also relates to the absence of undeclared production or separation of direct-use material⁷ at reactors, reprocessing facilities, hot cells and/or enrichment installations under safeguards. For States with comprehensive safeguards agreements and additional protocols in force, the measures included in the additional protocol significantly strengthen the technical basis upon which this conclusion is drawn.

8. To draw such a conclusion, the Agency evaluates the results of its verification activities. In so doing, it compares them to the requirements set out in the Safeguards Criteria⁸, and determines the extent to which the quantity and the timeliness components of the inspection goal — the safeguards performance targets — have been attained. However, non-attainment (or partial attainment) does not, in itself, constitute evidence of diversion of declared nuclear material or of undeclared production or separation of direct-use material at a declared facility or location outside facilities (LOF). In cases of non- or partial attainment, the Agency examines the facility evaluation to confirm the result, and then extensively reviews the reason(s) for failure and takes corrective action.

9. The Agency then evaluates all the information available, not only about the declared facilities but also about the State concerned. This includes information on verification results, facility design features, the continuing knowledge of facility operations, and all other information available about the State's nuclear and nuclear-related activities. The Agency reviews the quantitative and qualitative evaluation results in order to determine whether there is any indication of diversion of nuclear material placed under safeguards, of undeclared production or separation of direct-use material at declared facilities, or of other undeclared nuclear material or activities. Where there are no such indications that are of proliferation concern, the conclusion is drawn for the year that the nuclear material placed under safeguards in the State in question has remained in peaceful nuclear activities or has been otherwise adequately accounted for.

Absence of Undeclared Nuclear Material and Activities

10. To draw a conclusion of the absence of undeclared nuclear material and activities for the State as a whole, the Agency evaluates not only the results of its verification activities under the relevant comprehensive safeguards agreement but also the results of its broader, more qualitative, evaluation and verification activities under the additional protocol. To enable the Agency to draw such a conclusion for a State, the State needs to have complied with the terms of its safeguards agreement and additional protocol. In addition, the Agency needs to have:

- conducted a comprehensive State evaluation based on all information available to the Agency about the State's nuclear and nuclear-related activities (including the declarations submitted under the additional protocol, information collected by the Agency through its verification activities and other sources of information);

⁷ Direct-use material is nuclear material that can be used for the manufacture of nuclear explosive devices without transmutation or further enrichment (e.g. plutonium and high enriched uranium). There are two categories: unirradiated direct-use material (which requires less conversion time), and irradiated direct-use material.

⁸ The Safeguards Criteria specify the activities considered necessary by the Agency to provide a reasonable probability of detecting the diversion of nuclear material placed under safeguards.

- drawn a conclusion of non-diversion of declared nuclear material for the State in question; and
- implemented complementary access, as necessary, in accordance with the State's additional protocol.

The conclusion of the absence of undeclared nuclear material and activities for a State as a whole can be drawn for that year when these activities have been completed, relevant questions and inconsistencies have been addressed, and no indications have been found by the Agency that, in its judgement, would give rise to a proliferation concern.

11. Taken together, the two conclusions (of the non-diversion of declared nuclear material and of the absence of undeclared nuclear material and activities) enable the Agency to draw the broader conclusion for the year in question that all nuclear material within the territory of a State, under its jurisdiction or carried out under its control anywhere has been placed under safeguards and remains in peaceful nuclear activities, or has been otherwise adequately accounted for.

Overall Conclusions for 2003

12. On the basis of the results of its verification activities in respect of nuclear material and facilities, the assessment of the safeguards significance of cases of non- or partial inspection goal attainment, safeguards implementation and evaluation at the State level and all other information available, for 19 States the Agency found no indication of diversion of nuclear material or of undeclared nuclear material and activities. It therefore drew the conclusion in paragraph 1(a) of the Safeguards Statement for 2003 for those States — namely Australia, Bulgaria, Croatia, Ecuador, Ghana, the Holy See, Hungary, Indonesia, Japan, Jordan, Latvia, Lithuania, Monaco, New Zealand, Norway, Peru, Poland, Slovenia and Uzbekistan. For six of these States — Bulgaria, Ecuador, Japan, Latvia, Lithuania and Poland — the conclusion was drawn for the first time.

13. The conclusion reported in paragraph 1(b) of the Safeguards Statement was drawn for 19 States⁹. It was drawn on the basis of the evaluation process described in paragraphs 8–10 above. The evaluation process described in paragraph 11 has not yet been completed for these States .

14. The situations in respect of Iran and Libya are discussed in paragraphs 31 to 38.

1.2. States with Comprehensive Safeguards Agreements but no Additional Protocols in Force or otherwise Applied

Coverage

15. As of 31 December 2003, 98 States had comprehensive safeguards agreements in force with the Agency but no additional protocols in force or otherwise applied (109 States in 2002). During 2003, a comprehensive safeguards agreement entered into force with the United Arab Emirates.

16. Inspections were performed in 36 States in this category that had significant nuclear activities. The particular case of Iraq is discussed in paragraphs 41 to 44. For the 62 other non-nuclear-weapon States with a comprehensive safeguards agreement in force (55 of which have operational SQPs to their safeguards agreements¹⁰), only limited safeguards activities were undertaken because of the minimal amount of nuclear material or activities in those States.

⁹ See footnote 1.

¹⁰ The seven States without SQPs were Albania, Bosnia and Herzegovina, Côte d'Ivoire, Liechtenstein, Sri Lanka, Tunisia and Uruguay.

17. By the end of 2003, there were 34 States for which additional protocols were signed but not yet in force or otherwise applied. For three States — Armenia, the Philippines and Uruguay — the completion of the internal requirements for entry into force of additional protocols had remained outstanding for more than five years after signature. This also applied to the European Union. In addition, at the end of the year — more than six years after the Model Additional Protocol was approved by the Board — 16 States with known significant nuclear activities had yet to sign and bring into force an additional protocol¹¹: Algeria, Argentina, Belarus, Brazil, Colombia, the DPRK, Egypt, Iraq, Kazakhstan, Malaysia, Mexico, Serbia and Montenegro, the Syrian Arab Republic, Thailand, Venezuela and Vietnam.

Deriving Conclusions

18. For a State with a comprehensive safeguards agreement alone, the Agency's right and obligation remain as described in paragraph 4 above. Although safeguards strengthening measures under such an agreement have somewhat increased the Agency's ability to detect undeclared nuclear material and activities, the activities that the Agency — under existing authority — may conduct in this regard are limited. Thus, the conclusion that can be drawn for a State with a comprehensive safeguards agreement alone relates mainly to the nuclear material that has been placed under safeguards.

19. The conclusion contained in paragraph 2 of the Safeguards Statement is reported collectively for all States that have a comprehensive safeguards agreement but not an additional protocol in force or otherwise applied. The conclusion is drawn for each State and relates to the non-diversion of nuclear material which has been placed under safeguards and to the absence of undeclared production or separation of direct-use material at reactors, reprocessing facilities, hot cells and/or enrichment installations under safeguards. The process for drawing such a conclusion is described in paragraphs 8–10. In addition, the Agency's evaluation seeks to determine whether there are any indications of undeclared nuclear material or activities in the State which would need to be reflected in the Safeguards Statement. However, even if there are no such indications, in the absence of the measures provided for in the Model Additional Protocol, the Agency would not have a sufficient technical basis on which to draw a conclusion of the absence of undeclared nuclear material and activities for the State as a whole.

Overall Conclusions for 2003

20. On the basis of the results of its verification activities in respect of nuclear material and facilities, the assessment of the safeguards significance of cases of non- or partial inspection goal attainment, safeguards implementation and evaluation at the State level and all other information available, for 98 States the Agency found no indication of the diversion of nuclear material. It therefore drew the conclusion in paragraph 2 of the Safeguards Statement in respect of all the nuclear material placed under safeguards in those States.

21. The situation in respect of the DPRK is discussed in paragraphs 39 and 40.

¹¹ Kazakhstan and Mexico signed their additional protocols in early 2004.

1.3. States with Safeguards Agreements based on INFCIRC/66/Rev.2

Coverage

22. As of 31 December 2003, safeguards agreements based upon INFCIRC/66/Rev.2 were implemented in Cuba¹², India, Israel and Pakistan.

Deriving Conclusions

23. The conclusion contained in paragraph 3 of the Safeguards Statement is reported collectively for all States in which INFCIRC/66-type safeguards agreements were implemented. The conclusion is drawn for each State and relates to the non-diversion of nuclear material which has been placed under safeguards and to the non-misuse of items placed under safeguards. It also relates to the absence of undeclared production or separation of direct-use material at reactors, reprocessing facilities and hot cells under safeguards. The process for drawing such a conclusion is described in paragraphs 8–10, to which is added consideration of any misuse of specified items placed under safeguards.

Overall Conclusions for 2003

24. On the basis of the quantitative results of its verification activities in respect of nuclear material and facilities and other items placed under safeguards, the qualitative assessment of the safeguards significance of cases of non- or partial attainment of the inspection goals and all other information available to it, the Agency found no indication of diversion of nuclear material or of misuse of facilities or other items placed under safeguards in the four States. Therefore, the conclusion presented in paragraph 3 of the Safeguards Statement was drawn in respect of all the nuclear material and other items placed under safeguards in those States.

1.4. Nuclear-Weapon States with Voluntary Offer Agreements

Coverage

25. Voluntary offer safeguards agreements are in force with each of the five nuclear-weapon States. During 2003, safeguards were implemented at facilities selected by the Agency in four nuclear-weapon States under those agreements: China, France, the United Kingdom and the United States. No facilities in the Russian Federation were selected in 2003 for the application of safeguards.

26. All five nuclear-weapon States have signed additional protocols with the Agency. Although these protocols are based on the Model Additional Protocol, they vary in terms of coverage and scope. The additional protocol with China has entered into force. At the end of 2003, for one State — the United States of America — the completion of the domestic requirements for entry into force of the additional protocol had been outstanding for more than five years after signature. A similar situation applied to France and the United Kingdom. Once in force, these additional protocols will assist the Agency in its verification mission, for example, through provision of information on exports.

Deriving Conclusions

27. The conclusion contained in paragraph 4 of the Safeguards Statement is reported collectively for the four nuclear-weapon States in which safeguards were applied to nuclear material in selected facilities, irrespective of whether the States had an additional protocol in force. The conclusion is drawn for each State and relates to the non-diversion of nuclear material under safeguards and to the

¹² Cuba acceded to the NPT, effective 4 November 2002 and to the Tlatelolco Treaty, effective 23 October 2002. A comprehensive safeguards agreement and a protocol additional thereto were signed on 18 September 2003, but had not yet entered into force (as of the end of 2003).

absence of undeclared production or separation of direct-use material at reactors, reprocessing facilities, hot cells and enrichment installations under safeguards. The process for drawing such a conclusion is described in paragraphs 8–10.

Overall Conclusions for 2003

28. On the basis of the quantitative results of its verification activities in respect of nuclear material and facilities, the qualitative assessment of the safeguards significance of cases of non- or partial attainment of the inspection goals and all other information available, the Agency found no indication of the withdrawal of nuclear material subject to safeguards except in accordance with the agreements. It therefore drew the conclusion in paragraph 4 of the Safeguards Statement in respect of all the nuclear material under safeguards in those States.

1.5. States with no Safeguards Agreements in Force

29. As of 31 December 2003, 45¹³ non-nuclear-weapon States party to the NPT had yet to bring into force comprehensive safeguards agreements pursuant to the treaty. By the end of 2003, a safeguards agreement for Equatorial Guinea approved by the Board more than five years ago had still not been signed, and safeguards agreements for eight States — Cameroon, Gabon, Haiti, Kyrgyzstan¹⁴, Moldova, Sierra Leone, Togo and the United Republic of Tanzania — signed more than five years ago, were still not in force.

30. No safeguards activities are performed with regard to States with no safeguards agreement in force and therefore no safeguards conclusions are drawn for such States.

1.6. Islamic Republic of Iran

31. During 2003, the Director General provided three reports to the Board of Governors on the implementation of the comprehensive safeguards agreement in the Islamic Republic of Iran and the Board adopted two resolutions on the subject¹⁵. As indicated in the Director General's report of 10 November 2003, and as subsequently noted by the Board, Iran had been in breach of its obligations to comply with the provisions of its safeguard agreement. The Director General also stated that the information was slow in coming, changing and contradictory.

32. Iran committed itself to correcting the failures and breaches of its obligation to comply with the provisions of its safeguards agreement and, in October 2003, to a policy of openness and transparency. Since then, the Agency has been able to move forward in its work towards verifying that the information provided by Iran on its past and present nuclear activities is correct and complete.

33. As of 10 November 2003, Iran agreed to co-operate with the Agency in accordance with the provisions of the Model Additional Protocol, and signed a protocol additional to its comprehensive safeguards agreement in December 2003. Iran also decided voluntarily to suspend enrichment and reprocessing activities as a confidence building measure pursuant to a request by the Board in September and invited the Agency to verify this suspension. The urgent tasks of the Agency's work in Iran in 2003 included verifying the origin of the high-enriched and low-enriched uranium particles found at a number of locations in the State and fully understanding Iran's uranium enrichment programme and related R&D.

¹³ See footnote 2.

¹⁴ The comprehensive safeguards agreement with Kyrgyzstan entered into force on 3 February 2004.

¹⁵ GOV/2003/69 and 81.

34. The efforts towards drawing the required conclusions about the nature of Iran's nuclear programme, based on the Agency's correct and complete understanding of Iran's past and present programme, continued throughout 2003 and had not been completed by the end of the year.

1.7. Libyan Arab Jamahiriya

35. On 19 December 2003, Libya announced its decision to "eliminate...material, equipment and programmes which lead to the production of internationally proscribed weapons". On 20 December 2003, Libya informed the Agency that it had been engaged for more than two decades in the development of an undeclared uranium enrichment capability. This included importing uranium feed material and conversion and centrifuge equipment and the construction of now dismantled pilot scale centrifuge facilities.

36. A mission was carried out by the Agency from 27 December 2003 to 1 January 2004 to initiate verification of all of Libya's past and present nuclear activities, to define the corrective actions required and to consult on the necessary steps to eliminate any weapon-related activities. During that visit, Libya provided information on its uranium enrichment programme, and on the bench scale activities related to its uranium conversion programme. Libya admitted to having irradiated uranium oxide and metal targets at the research reactor and to having processed some of these targets to extract milligram quantities of plutonium. Libya announced that it would pursue a policy of full transparency and active co-operation with the Agency and that, as of 29 December 2003, it would act as if the protocol additional to its comprehensive safeguards agreement were in force.

37. Libya acknowledged having received documents related to nuclear weapon design in early 2002. These documents were sealed by the Agency on 31 December 2003 and removed from Libya in January 2004¹⁶.

38. As of the end of 2003, the Agency was unable to draw conclusions in respect of the correctness and completeness of Libya's declarations concerning the nuclear material in the State and its past and present nuclear activities.

1.8. Democratic People's Republic of Korea

39. In January and February 2003, the Board of Governors adopted two resolutions¹⁷ with regard to the implementation of safeguards in the DPRK, both of which were transmitted to the DPRK. On 10 January 2003, the Director General received a letter from the DPRK authorities, informing him of the decision of the DPRK to withdraw from the NPT. In a Government statement issued the same day, the DPRK declared that it considered itself "totally free from the binding force of the safeguards agreement with the IAEA (under Article III of the NPT)".

40. In its February resolution, the Board decided to report, as provided for in Article XII.C. of the Statute, the DPRK's further non-compliance and the Agency's inability to verify non-diversion of nuclear material subject to safeguards to all Member States of the Agency and to the Security Council and the General Assembly of the United Nations. In 2003, no safeguards inspections took place in the DPRK.

1.9. Iraq

41. As reported in the 2002 SIR, the Agency resumed inspections in Iraq on 27 November 2002 under the mandate provided by United Nations Security Council (UNSC) resolution 1441 (2002) and

¹⁶ Libya agreed to transfer to the United States of America sensitive design information, nuclear weapon-related documents, most of the sensitive technology and equipment acquired and also some of the undeclared nuclear material such as UF₆.

¹⁷ GOV/2003/3 and GOV/2003/14.

related resolutions. Until 17 March 2003, Agency teams carried out extensive inspection activities in Iraq to determine what, if anything, had changed there over the previous four years relevant to Iraq's nuclear activities and capabilities. At the time the Agency ceased its UNSC verification activities in Iraq on 17 March 2003 — in consultation with the President of the UNSC and the UN Secretary-General, and out of concern for the safety of its staff pending military action — the Agency had found no evidence or plausible indications of the revival of a nuclear weapons programme in Iraq. However, considering the four-year absence of Agency inspectors from Iraq, the time available for the renewed inspections was not sufficient to permit the Agency to complete its overall review and assessment.

42. In resolution 1483, adopted on 22 May 2003, the UNSC underlined its intention to revisit the mandate of UNMOVIC and the Agency, as set forth in the relevant resolutions. No such action took place in the UNSC in 2003 and the Agency was unable to return to Iraq under that mandate for the rest of the year.

43. On 14 July 2003, the Director General stated in a report¹⁸ to the Board of Governors that, from 7 to 23 June 2003, the Agency had conducted an inspection, in accordance with Iraq's comprehensive safeguards agreement in connection with the NPT, in order to verify the nuclear material subject to safeguards stored at the nuclear material storage facility at Location C, Tuwaitha. The nuclear material inventory at Location C, consisting of low enriched, natural and depleted uranium in various chemical forms, was reported to have been looted in April 2003. The Agency recovered the material, verified it and concluded that at least 10 kg of uranium compounds could have been dispersed as a result of the looting, but that the quantity and type of such compounds were not sensitive from a proliferation point of view. The Coalition Provisional Authority was requested to make every effort to recover this material, return it to Location C and place it under Agency safeguards.

44. In October 2003, the Agency was informed that the Coalition Provisional Authority in Iraq wanted to remove seals attached to the access doors of the nuclear material storage facility at Location C, in order to conduct a site survey of the nuclear material and to prepare for eventual removal of the nuclear material from Location C to the United States of America. The Agency granted permission to the Coalition Provisional Authority to remove Agency seals from the doors at Location C for the specified purpose. The Agency requested to be notified in advance of any shipment of nuclear material from that location in order to arrange for inspectors to be present should the Agency judge such presence to be necessary.

1.10. Importance of Additional Protocols

45. The Model Protocol Additional to Safeguards Agreements¹⁹ was approved by the Board of Governors in 1997 to address the limitations on the Agency's access to information and authority to conduct activities to ensure that all nuclear material is placed under safeguards. In 2003, a number of discoveries and disclosures underscored some of those limitations and the need for all States to conclude additional protocols with the Agency. The following describes some of those limitations.

Undeclared Activities at Undeclared Locations

46. One of the greatest challenges to the Agency is the detection of indications of undeclared nuclear activities at undeclared locations. For States with a comprehensive safeguards agreement in force but no additional protocol, the Agency's ability to do so is constrained by limitations referred to above. Under additional protocols, States are required to provide the Agency with far more information and wider access, which substantially increases the Agency's capability to detect undeclared activities in such States and, hence, provide credible, though not absolute, assurance of the absence of such activities.

¹⁸ GOV/2003/46.

¹⁹ INFCIRC/540 (Corr.).

Export and Import of Non-Nuclear Material and Equipment

47. Information on the export and import of nuclear-related equipment and non-nuclear material is essential for the Agency to evaluate the nuclear-related capabilities of the States concerned. Information with regard to certain specified equipment and non-nuclear material is required to be provided under an additional protocol. The reporting of such information is also provided for under the reporting scheme approved by the Board in 1993 and agreed to on a voluntary basis by some States. In order to ensure that the Agency's evaluation of transfers of nuclear-related equipment and non-nuclear material is comprehensive, it is essential that all States commit themselves, by bringing additional protocols into force, to providing such information to the Agency.

Nuclear Fuel Cycle related R&D and Use of Small Quantities of Nuclear Material

48. Experience has shown that a State can advance its nuclear capabilities clandestinely even with very small amounts of nuclear material. The Agency therefore not only evaluates whether a State may have diverted material in quantities sufficient to produce nuclear weapons, but also evaluates the State's R&D activities, including its use of small quantities of nuclear material in such activities. However, in the absence of additional protocols, there are limits to the access, information and activities available to the Agency for assessing States' R&D programmes and the uses of small quantities of nuclear material, particularly if the material is exempted from safeguards.

49. If a State has an additional protocol in force, it is required to declare its plans for the succeeding ten-year period for developing its nuclear fuel-cycle and its current nuclear fuel cycle-related R&D activities that do not involve nuclear material. The quantities, uses and locations of nuclear material which has been exempted from safeguards are also required to be declared and the Agency provided with access to those locations to ensure the absence of undeclared nuclear material and activities.

States with 'Small Quantities Protocols' to their Safeguards Agreements

50. At the end of 2003, there were 70 States with little or no declared nuclear material, and no nuclear material in a 'facility', which had protocols in force having the legal effect of holding in abeyance the implementation of most of the detailed provisions set out in Part II of a comprehensive safeguards agreement. These are referred to as 'small quantities protocols' (SQPs). For a State in which an SQP is implemented but which does not have an additional protocol in force, the Agency has only very limited means to evaluate any potential nuclear activities in the State which might need to be declared to the Agency, or to confirm that the State meets or continues to meet the conditions required for having an operative SQP.

2. Strengthening the Effectiveness and Improving the Efficiency of the Safeguards System

51. In 2003, further progress was made in strengthening the effectiveness and improving the efficiency of the Agency's safeguards system through developments in several areas, such as the State evaluation process, integrated safeguards, safeguards approaches, procedures and technology, and increased co-operation with State and regional systems of accounting for and control of nuclear material (SSACs/RSACs).

52. Integrated safeguards, which represent the most effective and cost-efficient combination of all the safeguards measures available to the Agency, were being implemented in three States at the end of 2003 — Australia, Indonesia and Norway. Guidelines were developed for the use of unannounced and short notice inspections under such a regime and criteria were developed for routine inspections at research reactors and critical assemblies and spent fuel storage facilities.

53. The Agency's policy in respect of safeguards at natural uranium conversion plants was substantially strengthened in 2003. Full safeguards measures are applied at an early stage in the conversion process and design information is required for the facility as a whole.

54. The Agency continues to develop and improve its non-destructive assay (NDA) systems for the verification of nuclear material and the containment and surveillance systems used to maintain continuity of knowledge of nuclear material. The reliability of the Agency's surveillance systems improved through the replacement of obsolete analogue systems with digital systems. Testing of new sealing systems was under way at a number of locations and the use of a ground-penetrating radar system for DIV was also tested.

55. To improve the efficiency of its safeguards implementation, the Agency continues to increase the number of installed unattended monitoring systems. At the end of 2003, there were 88 systems installed in 40 facilities in 22 States: 10 new systems and five replacement systems were installed during the year. Remote monitoring of surveillance data as an effectiveness and efficiency measure continues to expand. At the end of 2003, the Agency had 44 such systems with 109 cameras operating in nine States.

56. The effectiveness and efficiency of Agency safeguards depend to a great extent on the effectiveness of an SSAC and on the level of co-operation with the Agency. While most SSACs are reasonably effective, a number of them require assistance for their improvement, some have limited resources and others do not have the necessary authority. This lack of effectiveness on the part of the SSAC manifests itself in the failure to submit, or in delays in submitting, reports and/or in the inability to persuade facility operators to comply with Agency requirements, particularly with regard to operator's measurement systems for nuclear material, which can in turn lead to significant shipper receiver differences and material unaccounted for (MUF).

57. Closer co-operation between the Agency and SSACs/RSACs is expected to result from Agency efforts to help SSACs assess their technical capabilities and improve their procedures for nuclear material accountability. The Agency also continues to conduct seminars and training courses for SSACs on Agency safeguards, strengthened safeguards and, in particular, implementation of additional protocols.

3. Safeguards Implementation and Evaluation

3.1 Safeguards Implementation and Evaluation at the Facility Level

58. At the end of 2003, there were a total of 915 facilities and LOFs under safeguards or containing safeguarded nuclear material. According to States' nuclear material accounting reports, there were approximately 155 000 tonnes of nuclear material, including 15 tonnes of fresh HEU and 86 tonnes of separated plutonium and, in addition, 610 tonnes of heavy water under safeguards.

59. During 2003, 2363 safeguards inspections were performed at 644 facilities and LOFs in 69 States with significant nuclear activities²⁰ using a total of 9260 person-days of inspector effort. No inspections were performed in the DPRK. For the other 77 States, all of which are non-nuclear-weapon States, with safeguards agreements in force, only limited safeguards activities were undertaken because of the minimal nuclear material or activities in those States.

60. For 329 facilities in 40 States handling one significant quantity²¹ (SQ) or more of nuclear material, the quantity component of the inspection goal was fully attained. For 331 facilities in 41

²⁰ And in Taiwan, China.

²¹ The approximate amount of nuclear material from which the possibility of manufacturing a nuclear explosive device cannot be excluded.

States, the timeliness component of inspection goal was fully attained. This represents an increase of two per cent, mainly due to improved reliability of Agency surveillance systems.

3.2 Safeguards Implementation and Evaluation at the State Level

61. By the end of 2003, additional protocols to safeguards agreements were being implemented in 38²² States and otherwise applied for three — Ghana, Iran and Libya. Complementary access was performed on 101 occasions in 21 States²³. In most cases, it was performed at places on a nuclear site or at locations such as mines, concentration plants and locations with source material or with material which had been exempted from safeguards.

62. State evaluation is central to the process by which safeguards conclusions are drawn. The evaluation and review of information related to a State's nuclear activities is a continuing process; periodically the evaluation and the conclusions and recommendations arising therefrom are documented in a State evaluation report (SER) and reviewed. In 2003, SERs covering 59 States were completed and reviewed. Thirty-seven of these reports covered States with additional protocols in force or being otherwise applied.

4. Safeguards Expenditure and Resources

63. In 2003, safeguards expenditure was \$91.5 million from the Safeguards Regular Budget and \$15.1 million from voluntary contributions made by Member States (extrabudgetary funding). In the period 1998 to 2003, average expenditure was approximately \$105 million at 2003 prices with a high reliance on extrabudgetary funds. In September 2003, the 48th General Conference of the IAEA approved an increase of 12.4% for the Safeguards Regular Budget in 2004 and a further increase of 3.3% in 2005. The additional funds will be used to recruit staff, purchase equipment and procure information technology services, including satellite images.

64. The expenditure on safeguards equipment in 2003 was \$12.5 million of which \$5.8 million came from the Regular Budget.

65. At the end of 2003, the Department of Safeguards had 367 staff members in the Professional category (of which 247 were inspectors) and 189 staff members in the General Service category. In addition, the Department employed 16 cost-free experts and 44 staff with temporary contracts.

5. Further Activities Supporting Nuclear Non-Proliferation Regime

66. There are three additional important areas of Agency work which are not currently included in safeguards implementation but are, nevertheless, relevant to its verification tasks: monitoring neptunium and americium, strengthening the security of nuclear material, and developing proliferation resistant nuclear energy systems.

67. A flowsheet verification scheme for neptunium was implemented in 2003 at a European Commission laboratory. Flowsheet verification measures have been built into the subsidiary arrangements for the reprocessing plant under construction in Japan. However, the Agency continues to experience difficulties in getting responses from Member States with regard to neptunium and americium.

68. The Agency continues to provide extensive support to States in the area of nuclear security. Training courses, exercises and workshops on combating trafficking in nuclear and other radioactive

²² See footnote 1.

²³ See footnote 20.

material were held in a number of States and the Agency also provided Member States with technical assistance for the detection of and response to such illicit trafficking. Of the 75 new incidents reported to the Agency's Illicit Trafficking Database in 2003, only six incidents involved nuclear material and none involved plutonium or high enriched uranium.

69. The Department of Safeguards continued to provide support to the Agency's International Project on Innovative Nuclear Reactors and Fuel Cycles in the area of proliferation resistance of nuclear energy systems. Work in 2003 focused on the characterization of nuclear energy systems in terms of their proliferation resistance.

70. Technical work to prepare for the possible verification of excess fissile material continued at a low level in 2003. The Agency remains ready to consider assuming verification activities in respect of this material, as and when it is requested to do so.