

Updating the Annexes to the IAEA Additional Protocol

Mark W. Goodman, Department of State
Warren Stern, Brookhaven National Laboratory

ABSTRACT

The Model Additional Protocol has two technical annexes that set out activities and exports that the State must report to the IAEA. The state is required to report annually with a declaration of the scale of operations for each location where activities listed in Annex I take place, and to report quarterly on its exports (and, upon request, on its imports) of items listed in Annex II. This information is intended to help the IAEA assess the consistency and completeness of the State's safeguards-related declarations. The IAEA has specific authority to perform complementary access at locations involved in Annex I activities and Annex II imports.

These Annexes may be amended by the Board, upon the advice of an open-ended working group of experts established by the Board. In approving the Model AP, the Board agreed to set up such open-ended ad hoc working groups whenever amendments were proposed to either Annex, but to date no formal proposals have been made. Both Annexes were based on export control lists in effect and nuclear fuel cycle concerns in the 1990s. Annex II was based on the voluntary reporting scheme adopted by the Board in February 1993, which was adopted from the Trigger List of the Nuclear Suppliers Group, a list that has since been amended 13 times. Annex I is a list of 15 activities, most of which are related to the manufacture of items in sensitive areas of the nuclear fuel cycle. This paper will describe the origins of these Annexes and outline some substantive and procedural considerations for how they might be revised.

INTRODUCTION

IAEA safeguards have a longstanding connection with international cooperation on peaceful uses of nuclear energy. Indeed, the concept of "safeguards" predates the IAEA and was part of the very earliest proposals for international controls on nuclear energy. The Baruch Plan in 1946 called for "effective safeguards by way of inspection and other means to protect complying States against the hazards of violations and evasions." While this proposal did not come to fruition, President Eisenhower's "Atoms for Peace" proposal led to the establishment of the IAEA in 1957, with the mission to promote peaceful uses of nuclear energy while ensuring that its assistance did not contribute to any military purpose and applying safeguards to that end. IAEA safeguards became the standard for nuclear suppliers who wanted to ensure that their exports would not be diverted or misused for nuclear weapons.

Over subsequent decades, the connection between safeguards and nuclear cooperation has steadily grown. The Nuclear Non-Proliferation Treaty (NPT) in 1970 expanded the safeguards requirements for non-nuclear-weapon states (NNWS) to cover all nuclear material in all peaceful nuclear activities in the state, known as "full-scope" safeguards embodied in a comprehensive safeguards agreement (CSA). And Article III.2 of the NPT requires IAEA safeguards in connection with exports of specialized nuclear equipment – "equipment or material especially designed or prepared for the processing, use or production of special fissionable material" – to NNWS. Complementing this requirement, the nuclear-weapon States committed to report to the IAEA on their exports of

nuclear material to NNWS. And efforts to strengthen safeguards in the 1990s drew from lessons about the importance of information about nuclear transfers. This started with a voluntary reporting scheme for nuclear exports, later formalized in the Additional Protocol (AP) requirement for reporting on exports of items listed in AP Annex II.

From the beginning, IAEA safeguards have needed to adapt to changes in technology, both in terms of technological evolution in the fuel cycle and new developments on measurement and monitoring technology. CSAs define safeguards requirements and procedures in functional terms that can be applied to any technological variant of the nuclear fuel cycle. They also explicitly provide for the IAEA to take into account technological developments in order to optimize safeguards, and allow the IAEA to use objective methods that have been demonstrated to be technologically feasible. The AP echoes these features. In that sense, the AP Annexes are unusual in safeguards practice: Putting into the legal instrument for safeguards a specific list of items reflecting the nuclear fuel technologies at a particular time. It was anticipated at the time the Model AP was adopted that the list would need to be updated from time to time, using what was intended to be a simplified process for such updates that did not require amending the AP itself.

INFCIRC/207

Under a CSA, NNWS are required to report to the IAEA on transfers of nuclear material into and out of the state. Nuclear-weapon states (NWS) have no such requirement, but in 1974 the three NWS Parties to the NPT (the United States, the United Kingdom, and the Soviet Union) committed to provide reports on exports of nuclear material to NNWS, where that material would be required to come under safeguards, and on imports of nuclear material from states where it had been under safeguards [INFCIRC/207]. France and China made similar commitments in 1984 and 1991, respectively [INFCIRC/207 and /Add.1 and /Add.2].ⁱ These reporting commitments filled a gap in information available to the IAEA on such transfers and enabled the IAEA to do “transit matching” on the consistency of reports from the shipper and the receiver of transferred nuclear material and the completeness of NNWS declarations of nuclear material inventories. All five NWS later made these reporting commitments legally binding through their voluntary offer safeguards agreements with the IAEA.

ZANGGER COMMITTEE

As noted above, Article III.2 of the NPT obligates each NPT Party “not to provide: (a) source or special fissionable material, or (b) equipment or material especially designed or prepared for the processing, use or production of special fissionable material, to any non-nuclear-weapon State for peaceful purposes, unless the source or special fissionable material shall be subject to the safeguards required by this Article.” In 1971, a group of NPT Parties and prospective parties formed a committee to develop a common technical understanding of how to implement this requirement. This NPT Exporters Committee – later named the Zangger Committee in honor of its first Chair Swiss Professor Claude Zangger – published its understandings in 1974 in the form of two memoranda [INFCIRC/209].ⁱⁱ Memorandum A lays out procedures for exporting states to ensure that IAEA safeguards will be applied, and Memorandum B containing a list of “especially designed or prepared” (EDP) items that trigger this safeguards requirement, which came to be known as the Trigger List.ⁱⁱⁱ The Trigger List has since been modified and revised 14 times, most recently in

2020. [INFCIRC/209/Rev.5] Notably, the exporting state should get assurances from the importing state that safeguards will be applied, but there is no requirement to communicate with the IAEA.

NUCLEAR SUPPLIERS GROUP

Soon after the Zangger Committee published its first guidance on how to implement the explicit requirement of the NPT, the Nuclear Suppliers Group (NSG) was formed to develop export control guidelines that expand upon the NPT requirements and strengthen their nonproliferation effect. This includes both stronger requirements for nuclear exports and a slightly broader Trigger List of items that are subject to those requirements because they have uniquely nuclear use. The main difference between the Trigger Lists of the Zangger Committee and the NSG is that the latter includes equipment for production and processing of nuclear material, i.e. for source material as well as special fissionable material. Thus, facilities for conversion of natural uranium into a form that is suitable for nuclear use – and therefore would be subject to safeguards – are included in the NSG Trigger List. The NSG published its Nuclear Suppliers Guidelines in 1978 [INFCIRC/254] and has since revised those guidelines 14 times, most recently 2019 [INFCIRC/254/Rev.14/Part.1]. In addition to updating the Trigger List of controlled equipment and materials, the scope of controls has expanded to cover related technology (information) and software.^{iv}

Beginning in 1990, the IAEA investigation in Iraq revealed the extent to which Iraq's clandestine nuclear program relied on imports of equipment and materials from other countries. The imports in question were not just of Trigger List items, but also of nuclear-related dual-use materials and equipment. In this case "dual-use" refers items that have both nuclear uses – for which IAEA safeguards would apply – and non-nuclear uses – for which safeguards would not apply. In response, the NSG developed a related set of guidelines for exports of such dual-use items [INFCIRC/254/Rev.1/Part.2]. A key requirement of these guidelines is that suppliers should not authorize transfers to unsafeguarded nuclear fuel cycle activities or for nuclear explosive activities in NNWS. To phrase it differently, exports for nuclear uses should require that safeguards be applied for those nuclear uses. These dual-use guidelines and their associated control lists have been revised 11 times, most recently in 2022 [INFCIRC/254/Rev.12/Part.2]. Notably, both parts of the NSG Guidelines – Trigger List and Dual-Use – are designed so that export controls will reinforce IAEA safeguards.^v

VOLUNTARY REPORTING SCHEME

In 1992, responding in part to lessons learned from the IAEA investigations in Iraq, the IAEA undertook a review of possible new safeguards measures to expand the Agency's access to safeguards-relevant information, expand its access to the relevant locations, and otherwise improve the efficiency and effectiveness of safeguards. Among the early measures considered was expanded reporting on international transfers of nuclear material and equipment. The Secretariat presented a proposals to the Board of Governors in February 1992 for mandatory reporting and verification of nuclear exports [GOV/2568].^{vi} Based on the Board's deliberations, the Secretariat presented revised proposals in June 1992 that dropped verification and included proposals for a universal reporting scheme for exports of nuclear material [GOV/2588] and on relevant non-nuclear material and equipment [GOV/2589].^{vii} The latter included a list of equipment that was based on the Trigger Lists of the Zangger Committee and the NSG, which had recently been harmonized. While the Board was not prepared to endorse a universal reporting obligation, many Board Members were

prepared to report voluntarily and wanted the Secretariat to invite states to do so. Board deliberations culminated in February 1993, when the Secretariat presented a proposal for a Voluntary Reporting Scheme [GOV/2629].^{viii} Under this proposal “the Secretariat envisages States using ... the list incorporated in INFCIRC/254/Rev.1/Part.1 as amended from time to time.” The Board endorsed this proposal and the use of the NSG Trigger List (Annex B to INFCIRC/254/Rev.1/Part 1) “as a practical measure and for reasons of convenience only,” with “amendments to that list for the purposes of the reporting scheme to be subject to the approval of the Board.”

This Voluntary Reporting Scheme (VRS) envisions that the list of non-nuclear material and equipment subject to reporting would be amended regularly, but in fact it has been amended only twice. In December 1994, the Board approved a proposal by the Secretariat [GOV/2767] to update that list to reflect a modification to the NSG Trigger List [INFCIRC/254/Rev.1/Part.1/Mod.2],^{ix} and in March 1996 the Board approved a proposal by the Secretariat [GOV/2842 and GOV/2842/Corr.1] to reflect a modification to the specification of nuclear-grade graphite [INFCIRC/254/Rev.2/Part.1].^x

Since the adoption of the Model Additional Protocol in May 1997, the Secretariat has not proposed further revisions to the list used in the VRS, though the Secretariat has continued to report on its implementation in the annual Safeguards Implementation Report (SIR). According to the SIR for 2022 [GOV/2023/25], 35 states and the European Union had committed to participate in the VRS, but few states had submitted reports. Evidently, from the perspective of the Secretariat and participating states, such voluntary reporting has been superseded by mandatory reporting under the AP.

In 1997, IAEA Director General Hans Blix touted the Voluntary Reporting Scheme in his keynote address to the International Seminar on the Role of Export Controls in Nuclear Non-Proliferation, but also noted that “the scheme has limitations – it is voluntary and not all States participate.” He looked forward to having such reporting become binding through the widespread adoption of the AP. He also noted that the AP would oblige states to have a mechanism for export control if only to know what items were entering or leaving the country.^{xi}

WHAT ARE THE AP ANNEXES?

Annex I

AP Annex I is a list of 15 activities generally related to the manufacture of elements of nuclear fuel cycle processes. States must declare the scale of operations for each location engaged in these activities pursuant to Article 2.a.(iv) of the AP and the IAEA has authority to perform complementary access at locations involved in Annex I activities to resolve a question or inconsistency relating to the information reported. These activities include manufacture of key components of enrichment and reprocessing systems and reactors (fuel cladding and moderator materials).

- i. The **manufacture** of *centrifuge rotor tubes* or the assembly of *gas centrifuges*
- ii. The **manufacture** of *diffusion barriers*
- iii. The **manufacture** or assembly of *laser-based systems*

- iv. The **manufacture** or assembly of *electromagnetic isotope separators*
- v. The **manufacture** or assembly of *columns or extraction equipment*
- vi. The **manufacture** of *aerodynamic separation nozzles or vortex tubes*
- vii. The **manufacture** or assembly of *uranium plasma generation systems*
- viii. The **manufacture** of *zirconium tubes*.
- ix. The **manufacture** or upgrading of *heavy water or deuterium*
- x. The **manufacture** of *nuclear grade graphite*.
- xi. The **manufacture** of *flasks for irradiated fuel*.
- xii. The **manufacture** of *reactor control rods*.
- xiii. The **manufacture** of *criticality safe tanks and vessels*.
- xiv. The **manufacture** of *irradiated fuel element chopping machines*.
- xv. The **construction** of *hot cells*.

Many of these manufacturing activities involve both nuclear-use and dual-use materials, equipment, and technology and result in production of items listed in AP Annex II. Indeed, most of the Annex I activities (excepting only the construction hot cells) are defined in part by reference to the corresponding items on Annex II. For example, Annex II includes centrifuge rotor tubes, while Annex I covers their manufacture, which typically employs flow-forming or filament winding machines, both considered by the Nuclear Suppliers Group to be nuclear-related dual-use items. This list differs in several ways from the list initially proposed by the Secretariat [GOV/2863],^{xii} mainly dropping the production of several types of non-nuclear material (tritium, lithium-6, beryllium, and boron-10) and the addition of the last three items, which are related to reprocessing of spent fuel. These changes were the result of deliberations in the Committee 24, the Committee of the Board of Governors that negotiated the Model Additional Protocol.

Annex II

AP Annex II is a list of equipment and non-nuclear materials especially designed or prepared (EDP) for use in the nuclear fuel cycle. When the AP was adopted, Annex II was adopted with relatively little debate from the list used in the Voluntary Reporting Scheme, which corresponds to the NSG Trigger List contained in INFCIRC/254/Rev.1/Part.1/Mod.2, the NSG Trigger List from April 1994. AP Article 2.a.(ix)(a) obliges a state to provide the Agency a report on a quarterly basis containing, for each export of Annex II items, the identity, quantity, location of intended use in the receiving state, and date of export. Per Article 2.a.(ix)(b), a state must provide confirmation of the import of Annex II items upon request by the IAEA.

The items in Annex II fall into seven categories of nuclear facility, and generally include equipment especially designed or prepared (EDP) for such facilities:

1. Reactors and their major equipment;
2. Non-nuclear material for reactors (i.e. moderator materials);
3. Reprocessing plants and related EDP equipment;
4. Fuel fabrication plants and related EDP equipment;
5. Enrichment plants and related EDP equipment;
6. Production plants for heavy water, deuterium, and deuterium compounds, and related EDP equipment; and

7. Uranium conversion plants and related EDP equipment.

IAEA USE OF ANNEX REPORTING

The Model AP introduced new requirements for states to report to the Agency regularly on exports – and, upon request, on imports – of certain non-nuclear materials and nuclear fuel cycle-related activities. Analysts in the IAEA Safeguards Department perform cross-checks of exports and imports among states' AP 2.a.(ix) declarations, in addition to the longstanding practice of nuclear material transit matching. These tasks represent a basic method of analysis that has been useful in detecting anomalies and driving investigations to verify the completeness and correctness of state declarations. With respect to Annex I activities, information declared under 2.a.(iv) helps give the IAEA a more complete picture of the State's nuclear material production capabilities, which in turn allows for the IAEA to verify that these capabilities are only used to support the declared nuclear program.

When the IAEA conducts a state evaluation, it reviews all available safeguards-relevant information, first separately and then together in a consistency analysis that takes into consideration the reliability and detail of the sources. This analysis also helps identify lines of inquiry to detect potential undeclared activities. For example, nuclear-related exports indicated by open source trade data but not reported under Article 2.a.(ix)(a) would represent an inconsistency to resolve. When a State has an AP in force and multiple sources of reliable trade information indicate there are reporting gaps or inconsistencies in a declaration, the Agency has options to follow up with the state and to pursue activities in the field. The Country Officer may send a letter to the state pursuant to AP Article 2.c requesting “amplifications or clarifications” of a state's reporting under AP Article 2, or a letter to the state pursuant to AP Article 4.d seeking “to clarify or facilitate the resolution of a question or inconsistency,” and potentially requesting complementary access if the Secretariat believes that is the appropriate tool for resolving the question or inconsistency.

Information on nuclear transfers reported under Article 2.a.(ix) also helps to identify questions about the correctness or completeness of states' declarations or to resolve such questions. In particular, this information can provide insight into states' activities when little other data are available, such as for states with Small Quantities Protocols, for states that do not have an AP, or when verifying initial AP declarations. For example, a state with an AP might report an export to a non-AP state; this report provides insight to the IAEA on the non-AP state that they would not otherwise have. Information on declared exports, as well as other trade and procurement data, can be useful when building a timeline of activities; this has on occasion allowed the IAEA to determine when certain activities started or stopped, and in some cases these timelines have contradicted other information provided to the IAEA.

In addition to its role in consistency analysis and detecting potential undeclared activities, nuclear trade analysis and reporting on activities in Annex I plays an important role in helping to assess states' industrial capabilities, both for planning purposes (conducting an acquisition path analysis and developing a state level approach) and for state evaluations.

UPDATING THE ANNEXES

Formal Process

The procedure for amending the AP Annexes is specified in Article 16.b of the Model AP:

The list of activities specified in Annex I, and the list of equipment and material specified in Annex II, may be amended by the Board upon the advice of an open-ended working group of experts established by the Board. Any such amendment shall take effect four months after its adoption by the Board.

The final text of the Model AP itself does not contain any further elaboration on the procedure to establish the open-ended working group (OEWG) or how it should operate. However, a review of the record of Committee 24 and the Board of Governors sessions to approve the Model AP offers additional context for the interpretation of Article 16.b and how the amendment process for the Annexes was envisioned to operate.

During the July and October 1996 meetings of Committee 24, most states agreed that it would be necessary to update the Annex lists from time to time, but disagreed on whether amendments should be developed and decided by the Board alone, by the Board with General Conference approval, and/or with the agreement of each state party.^{xiii} Resistance to proposals involving roles for individual states or the General Conference was fueled by concerns that it would make the amendment process too cumbersome. A “simplified” amendment process within the Board was seen as preferable to one requiring review and separate approval by each state, though several states expressed a need to have input on potential amendments irrespective of Board membership. As a compromise, Belgium proposed that the Board could establish an “open-ended committee of experts” to review the lists and make recommendations, a view which ultimately prevailed. [GOV/COM.24/OR.19, para 42.]

Discussions of the proposal in Committee 24 are explicit that “open-ended” means that any Member State is free to participate in the OEWG, not just members of the Board. With respect to individual qualifications of the experts, Committee 24 rejected proposals that the Secretariat identify the experts and did not consider specific requirements. Thus, interested states are to provide their own expert to the OEWG to represent their views.

With respect to working procedures, the final report of Committee 24 (GOV/2914) states: “It is understood that in arriving at its decisions, the open-ended working group will follow the established practice of the Board.” Committee 24 rejected more specific language that could interfere with the normal procedures of Board subcommittees. In endorsing the draft Model AP attached to GOV/2914, the Board “[a]greed to set up open-ended ad hoc working groups to advise it whenever amendments were proposed to the lists contained in Annexes I and II, and confirmed that those working groups would follow the established practice of the Board in arriving at their decision.” [GOV/OR.914, para 66-67.] In practice, the OEWG of the Board, like other subsidiary bodies of the Board, can be expected to determine its chairmanship and come to decisions by consensus unless its participants were to decide otherwise.

The product of the OEWG should be a report containing consensus recommendations or options for the Board to consider, based on the working group’s deliberations. This report would have no legal effect on its own; the Board would need to decide whether to accept the recommendations of the

OEWG to amend the AP Annexes. While the Board of Governors could reject or substantially revise the recommendations of the OEWG and deliberate on its technical elements, the intent of the Article 16.b was to separate the technical deliberations of the OEWG from the approval process of the Board.

Annex II was accepted with little debate. It was taken from the Voluntary Reporting Scheme, which was based on the NSG Trigger List, which in turn was derived mainly from a technical assessment of NPT requirements. But Annex I was debated intensely, as it was a new proposal. There were disagreements about the inclusion of tritium in particular. Some argued that it was a key component in the manufacture of nuclear weapons, while others argued that it was not essential to their manufacture. Ultimately, the Chair proposed adopting that part of the list of items that had consensus, noting that the Annex could be amended in the future to address those item that did not command consensus:

“As you know, the implementation of safeguards is not a static process. The current negotiations on the Protocol alone attest to this. We have already ensured that the Protocol maintains a dynamic character through amendment provisions. For Annexes I and II, we have agreed on a simplified amendment procedure, as it is understood that there will be a more frequent need to review their content than other parts of the Safeguards Agreement, including the Protocol.” [GOV/COM.24/OR.44 para 11.]

PRELIMINARY STEPS

When the Model AP was negotiated, a simplified amendment procedure was developed for the Annexes because it was envisioned that there would be a need for them to be reviewed from time to time. Twenty-six years have passed since the Model AP was approved, and the Board of Governors has yet to consider the issue. The NSG Trigger List has been revised regularly and is now on Rev.14 (2019) and includes many additional items and changes in scope of earlier items that are not reflected in AP Annex II. Thus, Annex II is increasingly outdated. Growing interest in new reactor types, small modular reactors, and advanced nuclear fuel cycles suggest that this is likely to continue and may even accelerate. Additions or changes to the Trigger List could also suggest changes to the corresponding Annex I activities, and IAEA experience in carrying out state evaluations and analyzing states' Annex I declarations could lead the Secretariat to propose other additions or modifications to Annex I.

Yet because of the passage of time, what was intended to be a “simplified” process for incorporating changes in nuclear technology as reflected in the NSG Trigger List (in the case of Annex II), or addressing related changes in the physical model (in the case of Annex I) has come to be seen as a significant hurdle. Given the increasing interest in updating the AP Annexes as reflected in papers and remarks at the 2022 IAEA Safeguards Symposium,^{xiv xv xvi} it is worth considering whether certain additional information and preparations could facilitate the process. For example, two of these papers suggested that the Secretariat provide additional information on the expected impact of such changes, which would help Member States better understand the potential benefits of updating the Annexes.

The Secretariat could also solicit technical advice from Member State Support Programs, many of which could draw on national experiences with the technical aspects of nuclear export control. They could be asked, from their perspective as nuclear suppliers, to assess whether use of a decades-old version of the Trigger List leaves any significant gaps in coverage of nuclear cooperation and trade, and whether the latest version would fill those gaps.

It is also worth recalling that there was significant resistance when the Secretariat first proposed a universal reporting scheme for nuclear exports in 1992. The reluctance of some states to commit to such a scheme was finessed when other states proposed to do so on a voluntary basis. While the Voluntary Reporting Scheme has been largely superseded by mandatory AP reporting on Annex II exports, the list of items subject to that scheme has its own mechanism for updates, separate from the process in Article 16 of the AP for amending Annex II. Reviving the VRS and updating the associated list offers a similar potential pathway toward a decision on whether to formally amend the AP Annexes – or at least Annex II.

ⁱ “Notification to the Agency of Exports and Imports of Nuclear Material,” IAEA INFCIRC/207, available at: <https://www.iaea.org/publications/documents/infcircs/notification-agency-exports-and-imports-nuclear-material>.

ⁱⁱ “Communications Received from Members Regarding the Export of Nuclear Material and of Certain Categories of Equipment and Other Material,” IAEA INFCIRC/209, available at: <https://www.iaea.org/publications/documents/infcircs/communications-received-members-regarding-export-nuclear-material-and-certain-categories-equipment-and-other-material>.

ⁱⁱⁱ Fritz W. Schmidt, “The Zangger Committee: Its History and Future Role,” *Nonproliferation Review*, Fall 1994.

^{iv} “Communications Received from Certain Member States Regarding Guidelines for the Export of Nuclear Material, Equipment Or Technology,” IAEA INFCIRC/254, available at: <https://www.iaea.org/publications/documents/infcircs/communications-received-certain-member-states-regarding-guidelines-export-nuclear-material-equipment-or-technology>

^v “Communication Received from the Permanent Mission of Australia on Behalf of the Member States of the Nuclear Suppliers Group,” IAEA INFCIRC/539, available at: <https://www.iaea.org/publications/documents/infcircs/communication-received-permanent-mission-australia-behalf-member-states-nuclear-suppliers-group>

^{vi} “Strengthening of Agency Safeguards,” IAEA Board of Governors, GOV/2568, 10 January 1992.

^{vii} “Strengthening of Agency Safeguards: Universal Reporting Of Exports, Imports and Inventories of Nuclear Material for Peaceful Purposes,” IAEA Board of Governors, GOV/2588, 18 May 1992; and “Strengthening of Agency Safeguards: Universal Reporting Of Exports and Imports of Certain Equipment and Non-Nuclear Material for Peaceful Purposes,” IAEA Board of Governors, GOV/2589, 18 May 1992.

^{viii} “Strengthening the Effectiveness and Improving the Efficiency of the Safeguards System: Universal reporting system on nuclear material and specified equipment and non-nuclear material,” GOV/2629, 22 January 1993.

^{ix} “Proposed Amendments to the List Being Used for the Reporting Scheme Endorsed by the Board of Governors,” GOV/2767, 19 October 1994.

^x “Proposed Amendments to the List Being Used for the Reporting Scheme Endorsed by the Board of Governors,” GOV/2842, 14 February 1996, and GOV/2842/Corr.1, 15 March 1996.

^{xi} Hans Blix, “Keynote Address at the International Seminar on the Role of Export Controls in Nuclear Non-Proliferation,” 7 October 1997, Available at: <https://www.iaea.org/newscenter/statements/keynote-address-international-seminar-role-export-controls-nuclear-non-proliferation>.

^{xii} “Strengthening the Effectiveness and Improving the Efficiency of the Safeguards System: Proposals for Implementation under Complementary Legal Authority,” GOV/2863, 6 May 1996.

^{xiii} M.D. Rosenthal et al. (2010), “Review of the Negotiation of the Model Protocol Additional to the Agreement(s) between State(s) and the International Atomic Energy Agency for the Application of Safeguards, Volume II/III,” Brookhaven National Laboratory (BNL-90964-2010), <https://www.bnl.gov/isd/documents/71014.pdf>.

^{xiv} N.C. Mayhew (2022), “The Annexes to the Model Additional Protocol: A Quarter Century On,” *Symposium on International Safeguards: Reflecting on the Past and Anticipating the Future*, IAEA, November 2022.

^{xv} I. Neimeier (2022), “SAGSI’s Reflections on 30 Years of Strengthened Safeguards,” *Symposium on International Safeguards: Reflecting on the Past and Anticipating the Future*, IAEA, November 2022.

^{xvi} M. Calvez et al., “The 25th Anniversary of the Additional Protocol, Feedback and Experiences from Six Countries,” *Symposium on International Safeguards: Reflecting on the Past and Anticipating the Future*, IAEA, November 2022.