



## AN OVERVIEW OF THE IAEA ACTION TEAM ACTIVITIES IN IRAQ

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**Abstract**

Following Iraq's withdrawal from Kuwait, the United Nations Security Council adopted its resolution 687 (1991), setting out the terms of the ceasefire agreement. Those terms, inter alia, requested the Director General of the International Atomic Energy Agency (IAEA) to carry out immediate on-site inspection of Iraq's nuclear capabilities, to prepare and carry out a plan for the destruction, removal and rendering harmless of all assets relevant to the design and production of nuclear weapons, and to design and eventually implement a plan for the ongoing monitoring and verification of Iraq's compliance with its related obligations under Security Council resolutions. This paper summarises the work of the IAEA Iraq Action Team, established by the Director General to carry out the practical tasks necessary to implement the requests of the Security Council. It also highlights the lessons learned from a unique regime of disarmament and verification.

*Key words: Iraq, Nuclear weapons, monitoring, verification, NPT*

**Introduction**

The Iraq Action Team was established by the Director General of the International Atomic Energy Agency (IAEA) to carry out the practical activities necessary to implement the tasks requested of him by the Security Council in paragraph 13 of its resolution 687 of 3 April 1991. Specifically the Director General was requested, with the assistance and cooperation of the Special Commission established pursuant to paragraph 9 of that same resolution:

- to carry out immediate on-site inspection of Iraq's nuclear capabilities based on Iraq's declarations and the designation of any additional locations by the Special Commission;
- to develop a plan for submission to the Security Council within forty-five days calling for the destruction, removal, or rendering harmless as appropriate of all items listed in paragraph 12 of resolution 687 (1991);
- to carry out the plan within forty-five days following approval by the Security Council;
- to develop a plan, taking into account the rights and obligations of Iraq under the Treaty on the Non-Proliferation of Nuclear Weapons of 1 July 1968, for the future ongoing monitoring and verification of Iraq's compliance with paragraph 12 of resolution 687 (1991), including an inventory of all nuclear material in Iraq subject to the Agency's verification and inspections to confirm that Agency safeguards cover all relevant nuclear activities in Iraq, to be submitted to the Security Council for approval within one hundred and twenty days of the passage of resolution 687 (1991).

Iraq, for its part, was, under paragraph 11 of resolution 687 (1991), invited to reaffirm unconditionally its obligations under the Treaty on the Non-Proliferation of Nuclear Weapons of 1 July 1968 and, under paragraph 12 required to unconditionally agree:

- not to acquire or develop nuclear weapons or nuclear-weapon-usable material or any subsystems or components or any research, development, support or related manufacturing facilities;
- to submit to the Secretary-General and the Director-General of the International Atomic Energy Agency within fifteen days of the adoption of resolution 687 (1991) a declaration of the locations, amounts, and types of all items specified above
- to place all of its nuclear-weapon-usable materials under the exclusive control, for custody and removal, of the International Atomic Energy Agency, with the assistance and cooperation of the Special Commission;

<sup>1</sup> Mr. Dillon retired from his post as Leader of the IAEA Iraq Action Team in October 1999. The post is now held by Dr. Baute

- to accept, in accordance with the arrangements provided for in paragraph 13 of resolution 687 (1991), urgent on-site inspection and the destruction, removal or rendering harmless as appropriate of all items specified above;
- to accept the plan for the future ongoing monitoring and verification (OMV) of its compliance with these undertakings.

In fulfilling the above defined tasks requested of the Director General, the IAEA Action Team carried out a series of thirty inspection campaigns over the period 15 May 1991 to 24 July 1997, the results of which are described in detail in the report of the IAEA Director General to the Security Council, document S/1997/779 dated 8 October 1997. Overlapping these inspection campaigns, the Action Team carried out ongoing monitoring and verification activities, predominantly through its Nuclear Monitoring Group which was established in August 1994 and maintained an essentially continuous presence in Iraq until December 1998. At the time of preparation of this paper, June 2001, the IAEA Action Team continues to be prevented from returning to Iraq to resume its inspection activities in connection with the relevant Security Council resolutions.

### **Iraq's declaration**

Iraq's initial response to its obligation to provide "a declaration of the locations, amounts, and types of all" ... "nuclear weapons or nuclear-weapon-usable material or any subsystems or components or any research, development, support ..." was a simple assertion of its possessing no such assets. Since the Iraqi Atomic Energy Commission's (IAEC) Tuwaitha Research Centre and Iraq's previously declared holdings of highly enriched uranium were obviously highly relevant assets, the IAEA immediately requested Iraq to resubmit its declaration. The resulting second declaration provided a reasonably accurate listing of Iraq's known assets, previously identified by Iraq as components of its declared peaceful nuclear programme. Notably, the list did not include any of the sites, such as Al Jesira, Al Tarmiya, Al Sharqat or Al Atheer, designed and constructed specifically to support Iraq's clandestine nuclear weapons programme.

### **The IAEA's immediate discoveries**

On the basis of Iraq's revised declaration and information provided by supporting member states, the IAEA Action Team, on 15 May 1991, embarked upon the first of its inspection campaigns in Iraq. As was to be the case in all subsequent inspection campaigns, inspection staff was drawn from the IAEA, principally the Department of Safeguards, from member state technical laboratories and on occasions, from United Nations Special Commission (UNSCOM<sup>2</sup>). The first inspection was centred upon the IAEC Tuwaitha Nuclear Research Centre from which a technical baseline for future inspections was to be established. The inspection revealed that, although much of the technical facilities had been destroyed during the Gulf war, the highly enriched uranium fuel for the two research reactors appeared to be intact and had not been diverted to nuclear weapons usage.

As early as the second inspection campaign, difficulties started to arise when Iraq obstructed the Action Team's access to an undeclared site at which Iraq was attempting to conceal major uranium enrichment equipment that had been removed from its Tarmiya site. The site, an army barracks, had been designated for inspection on the basis of information provided by member states deriving from overhead imagery analysis. The seriousness of this obstruction prompted the visit of a high-level mission, including the IAEA Director General, and resulted in Iraq undertaking to provide full and free access to the Action Team. This visit also resulted in a further "declaration" by Iraq, which it issued on 7 July 1991, coincident with the commencement of the third inspection campaign. This third declaration which provided information on the previously undeclared components of Iraq's "peaceful nuclear programme" – essentially sub-programmes for the conversion of uranium compounds and uranium enrichment through electromagnetic isotopic separation (EMIS), gaseous diffusion, centrifuge, and chemical methods - still excluded Iraq's end objective, namely the development and production of nuclear weapons. The third, fourth and fifth inspections focused on the verification of this latest declaration. These inspections were non-confrontational despite the emergence of evidence to confirm Iraq's experimentation in

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<sup>2</sup> UNSCOM was succeeded by the United Nations monitoring, verification and inspection commission (UNMOVIC) through the adoption of Security Council resolution 1284 (1999) dated 17 December 1999.

the production and separation of Plutonium<sup>3</sup>. This relationship was to change dramatically during the sixth inspection.

In its sixth inspection, from 22-30 September 1991, the Action Team, acting on information received from supporting member states, carried out unannounced inspections at a number of buildings in downtown Baghdad of which two – the Al Niqabat building (called the Nuclear Design Centre) and the Al Khairat complex (the PC-3 Headquarters) - were notable in their results. At the Al Niqabat building the team discovered a number of metal trunks containing technical reports and other documents related to Iraq's clandestine nuclear programme. Initial examination of these documents, at the site, revealed incontrovertible evidence that Iraq had embarked upon a nuclear weapons programme. However, before the Team could pursue its assessment, the documentation cache was forcibly removed by the Iraqi counterpart. The cache was returned to the Team during early hours of the next morning but only after some documents had been removed by the Iraqi counterpart. Despite this apparent set-back, individual Team members had managed to conceal about their persons some documents which escaped seizure by the Iraqi counterpart. One such document, which was appended to the report of the sixth inspection campaign, proved to be the progress report for the Al Atheer Plant for the first half of 1990. This report identified Al Atheer as Iraq's nuclear weapons development and production facility and also introduced PC-3 (Petrochemical – 3), the code name of Iraq's clandestine nuclear programme. Subsequent analysis of the documentation cache showed it to contain about 1300 PC-3 technical reports out of what was eventually to be determined as a total report production, by the Project, of 1574. The second such event occurred the next day during the inspection at the Al Khairat. This building was found to contain an immense amount of documentation, which although not of the same technical value as that discovered at the Al Niqabat building was to prove important in shedding light on the covert procurement system Iraq had put in place to support PC-3.

Notwithstanding the mountain of evidence to the contrary, the Iraqi counterpart implacably continued to insist that it was not pursuing a nuclear weapons programme and that Al Atheer was merely conducting research into the necessary technical requirements should the political decision ever be taken to develop nuclear weapons!

#### **The coherent picture of Iraq's clandestine nuclear programme**

The destruction, removal and rendering harmless of Iraq's known nuclear weapons related assets continued up to November 1992. These activities involved the destruction/rendering harmless of more than 500 tonnes of special aluminium alloys and some 80 tonnes of maraging steel procured for the centrifuge programme, the destruction of more than 2,500 items of equipment. The removal of Iraq's holdings of weapons usable nuclear material (the research reactor fuel) was completed in February 1994 when the final consignment of irradiated material was trans-shipped to Russia. All key technical buildings which had not been destroyed during the Gulf war were destroyed under IAEA supervision, particularly at Al Atheer.

Despite the Action Team's belief that the Iraqi counterpart had removed significant documents from the Al Niqabat cache, the technical reports returned to the Team provided a valuable basis upon which to continue its mandated tasks. This information was, to an extent, augmented by three successive versions of the "full, final and complete" declaration demanded of Iraq by resolution 707 (1991). As the Action Team continued with its inspection campaigns and the destruction, removal and rendering harmless of Iraq's nuclear weapons related assets, the size and shape of the whole programme began to emerge. It was clear that the programme was very well funded – certainly in excess of three billion dollars - and was structured in four groups. Group One, later titled the Engineering Design Centre, was responsible for research and development into uranium enrichment through the gaseous diffusion process, although this approach was later abandoned in favour of centrifuge. Group Two was focused primarily on the EMIS process, which was the PC-3 "process of choice". However, Group Two was also responsible for uranium feed material production and recycle as well as development work on chemical enrichment processes (solvent extraction and ion exchange) as possible sources of low enriched uranium feed material for EMIS. Group 3 provided engineering services to the technical groups as well as administration and procurement services. Group 4, later to be renamed the Al Atheer Plant, was tasked with most aspects of weaponisation. In addition to these PC-3 groups, a special group was tasked to develop the explosive lenses for the nuclear weapon implosion package. This special group was established at the Ministry

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<sup>3</sup> It was this discovery that, inter alia, resulted in the Security Council's issuance of its resolution 707 of 15 August 1991 which prohibited Iraq from undertaking any nuclear activities other than the use of radioisotopes in medicine, agriculture and industry and also demanded that Iraq provide a full, final and complete declaration of its WMD programmes.

of Industry and Military Industrialisation (MIMI) Al Qa Qa factory, which is the major facility in Iraq for the production of conventional explosives.

As indicated above, PC-3 explored all methods for the production of weapons-useable nuclear material although the major technical and financial resources were concentrated on the production of HEU based on EMIS and to a lesser, but growing, extent centrifuge, as well as the eventual weaponisation of HEU. With the exception of the centrifuge enrichment project, the majority of PC-3 development work had been undertaken at the Iraqi Atomic Energy Commission's Nuclear Research Centre at Tuwaitha, a few kilometres south of Baghdad. Iraq had accumulated natural uranium source material, useful in its programme, through the open-market acquisition of yellow-cake from Portugal and Niger and the acquisition of uranium dioxide, from Brazil. Iraq also had its own production deriving from uranium bearing phosphate ores mined at Al Kashat near Iraq's western borders with Syria and Jordan. The uranium from this latter source was abstracted via a separation and refining loop installed in the phosphate fertilizer production plant at Al Qaim. In addition to the uranium dioxide obtained from Brazil, Iraq had established a production plant at Al Jesira, close to Mosul, in northern Iraq. Also located at Al Jesira was the uranium tetrachloride production plant which was to provide production-scale supply to the EMIS plants, of which there were two. The plant located at Al Tarmiya, some 60 kilometres north of Baghdad was the most advanced with civil engineering almost complete and a substantial part of the primary separation equipment installed and under commissioning. The second plant, located at Al Sharqat, in central Iraq, was still under construction and none of the separation equipment had yet been manufactured. The Al Atheer factory, which was still under construction in January 1991, was to have been the centre for the development and production of nuclear weapons.

These major facilities appeared to be consistent, one with another, in terms of their production targets, capacities and technical capabilities. Assuming the feed material to have been natural uranium the two EMIS plants would have, in combination, produced about 20kg of HEU per annum – enough to produce one nuclear weapon based on implosion technology, which was almost certainly Iraq's "technology of choice". However, it is evident that Iraq had hoped to acquire, or produce a low enriched uranium (LEU) feed which, even at only 4% enrichment, could have more than tripled the HEU production of the EMIS plants.

As the Action Team's work progressed into 1995, two significantly grey areas remained in the coherent picture of Iraq's clandestine nuclear programme namely Iraq's progress in weaponisation and the contradictory indications as to the true seat of Group One's centrifuge activities. These areas were to be illuminated, at the end of August 1995, in the aftermath of the departure from Iraq of Lt. General Hussein Kamel, cousin and son-in-law of President Saddam Hussein and Minister of Industry and Military Industrialisation, supervising the Military Industrialisation Corporation (MIC) and the PC-3 Project which moved from IAEC to MIC at the beginning of 1989. In these multiple capacities, Hussein Kamel controlled all aspects of Iraq's WMD activities as well as its missile programme. Immediately following Hussein Kamel's departure Iraq's deputy prime minister, Tariq Aziz, sent an urgent invitation to the IAEA and to UNSCOM to visit Iraq as soon as possible to discuss the revelations that had ensued. The declared context of these revelations was that Hussein Kamel had, without the knowledge of the senior levels of the Iraqi government, withheld WMD relevant information and had threatened the Iraqi technical counterpart with dire consequences were they to break the confidences that he had demanded of them. The IAEA chose not to challenge this unlikely premise in order not to jeopardize the flow of new information from the Iraqi counterpart.

The principal content of the revelations was that Iraq had indeed set out to produce an arsenal of nuclear weapons and had carried its weaponisation development considerably further than previously declared. Furthermore, Iraq now admitted that, following its invasion of Kuwait, it had commenced upon a project to divert the weapon-usable nuclear material from the research reactor fuel inventories for use in a "crash programme" to make its first nuclear weapon. A second significant revelation was that, as suspected, Group One's centrifuge project had been located at the former water research establishment, on the northern outskirts of Baghdad, in the direction of Rashdiya. The project, named the "Engineering Design Centre" (EDC) seemed to have had a deliberately ill-defined hierarchy and was described to have some dependencies upon IAEC and PC-3 but to have had direct ties to MIMI, through the Military Industrialisation Corporation (MIC).

The August visit included meetings with high-level Iraqi political officials and discussions with the PC-3/EDC technical staff. Much additional detail was obtained during these discussions. However, the most significant source of new data was in a cache of documents rather theatrically "discovered" at the end of the visit, by the Iraqi counterpart, which had been allegedly concealed by Hussein Kamel at his Haider House chicken farm. It should be recorded that the August visit to Iraq was followed by a restricted meeting, in Amman, Jordan with

Hussein Kamel, which added little to the nuclear-related information already obtained in Iraq. The Haider House Farm documentation cache, plus other documents provided to the Action Team after August 1995 and the documents collected during the sixth inspection campaign combined together to provide an almost complete set of the 1574 technical documents issued throughout the course of PC-3. The most important components of the documents provided to the Action Team after August 1995 was an "optical disc" which appeared to contain all of the PC-3 technical reports dealing with weaponisation, as well as key reports and drawings of the Al Qa Qa group which had been developing the explosive lenses for the implosion package.

Assessment of these documents, followed up in detailed discussions with the Iraqi counterpart, enable the IAEA to fill in all of the significant known blanks in the coherent picture of Iraq's clandestine nuclear programme. In particular, it became evident that Iraq had, aided by the somewhat empirical approach adopted by the Al Qa Qa group, made significant progress in the development of the implosion package for the nuclear weapon. However, somewhat against popular logic, Iraq continued to insist that it had not sufficiently progressed in the weapon design for it to have produced engineering design drawings. Additionally, and contrary to its tendencies in other areas, Iraq continued to insist that it had never made a realistic model of a nuclear weapon. These aberrations were a source of irritation to the Action Team but were eventually accepted as being of minor consequence in the context of a prudent assumption that Iraq had developed the technical capability and practical "know-how" to fabricate a nuclear weapon.

It also became clear that the centrifuge enrichment programme had been established at EDC "Rashdiya" in 1987, following the essential abandonment of the diffusion process. The centrifuge enrichment programme had initially focused on the Beams type oil bearing centrifuge design. This design was well described in available technical literature but had been abandoned, many years previously, by industrialised technology holders, in favour of magnetic bearing technology – Zippe type. Most significant was the evident extent of foreign assistance obtained by the programme not only in the procurement of special materials and equipment but in valuable "know-how" in particular in the area carbon fibre composite (CFC) technology. The most significant finding was that, with foreign assistance, EDC had succeeded in constructing and operating a single CFC centrifuge machine and obtaining a separation factor of approximately 2 kg SWU/a. It is relevant to note the "rule of thumb" that with a natural uranium feed, 200 kg SWU of separative work are required to produce 1 kg of weapons-usable nuclear material. There was no indication that Iraq had yet progressed to any practical form of centrifuge cascade although EDC had designed and progressed the civil engineering requirements for a 50 centrifuge machine cascade to be employed in the above mentioned "crash programme" to produce the first nuclear weapon.

One further significant development in the post August 1995 period was the IAEA's rejection of Iraq's so-called "full, final and complete" - 74 page - declaration (FFCD) and insistence that Iraq produce a sufficiently comprehensive written declaration of its programme as then revealed. As a result, and through the course of many discussions extending over a two-year period, Iraq produced an FFCD which, taken together with its appendices, totals more than 2,000 pages.

### **Ongoing monitoring and verification**

The IAEA plan for ongoing monitoring and verification, of Iraq's compliance with its obligations under the relevant Security Council resolutions, was approved by the Council in its resolution 715 of 11 October 1991. This plan specified in great detail Iraq's practical obligations and the rights, particularly the rights of access of the IAEA - rights of access that are unique in scope and far beyond anything that a state would voluntarily concede. Almost from the beginning of its inspection activities in Iraq, the IAEA Action Team gave significant attention to the scope and application of the technical measures that would be implemented through its OMV plan. As early as November 1992, the Action Team, with the active assistance of a supporting member state, had established its programme of routine radiometric survey of Iraq's principal water-courses, with the objective of detecting indications of prohibited nuclear activities. Many overlaps exist between investigative inspections and monitoring. The very fact that a facility is inspected for a second time provides monitoring information regarding possible changes of use. Many technologies, including radiation survey and, in particular, environmental sampling, have common use in detection and monitoring. By August 1994, the Action Team had established its Nuclear Monitoring Group (NMG) and, through the NMG, its "continuous" presence in Iraq. The staffing of the NMG relied to an extent on technologists provided by an ever widening geographical spread of IAEA member-states, but was, almost invariably, headed by an established member of the Action Team. Indeed, the personnel system followed required all of the Action Team professional technical staff to assume, on

rotation, the role of NMG "Chief Inspector". Thus, through the "continuous presence" of its NMG, the Action Team was able to combine the investigation of Iraq's clandestine nuclear programme with its implementation of the IAEA OMV plan. In his periodic progress report to the Security Council in October 1997, the IAEA Director General indicated that the technically coherent picture of Iraq's clandestine nuclear programme was sufficiently well established such that the few remaining questions and concerns would not impede the full implementation of the IAEA OMV plan. In subsequent reporting, the IAEA Director General reiterated that provided the IAEA retained the right of access enshrined in its OMV plan, the IAEA was in a position to focus its activities primarily on the implementation of the plan and, as part of that plan, to continue to investigate the remaining questions and concerns or any other matter that may arise from newly obtained information.

Such was the framework within which the Action Team conducted its activities in Iraq from October 1997 through 16 December 1998. The technical components of the framework included: routine unannounced inspections of facilities previously associated with or housing materials or equipment associated with Iraq's clandestine nuclear programme; non-routine unannounced inspections of previously un-inspected sites judged to have capabilities useful to a reconstituted clandestine nuclear programme; interviews, in the workplace, of nuclear technologists; routine and special radiometric surveys of the Iraq's principal water-courses; aerial and terrestrial radiometric surveys; sampling of airborne and deposited particulate matter, and; vegetation sampling. The philosophy followed was that Iraq, as a whole, was subject to monitoring and that the Action Team would determine those items and areas that would be routinely subjected to its monitoring programme. In this phase of the operation priority was given to the implementation and field-testing of all feasible monitoring technologies in order to establish a proven range of techniques that could be selectively applied as experience and possibly changing circumstances might indicate.

In this latter context, and with a view to the longer-term, focus was given to the design and implementation of technologies that might provide the necessary assurances or, as necessary, defensible evidence to the contrary, of the absence of prohibited nuclear activities, without the need of direct access. Exercise of the right of access enshrined in the OMV plans of the IAEA and UNSCOM has been the subject of much controversy and, on occasions, conflict. The critical importance of that right of access cannot be understated. The responsibilities that accompany that right are also high. Care must be taken to ensure that access is exercised as a need and not an objective in itself. Denial of access is both illegal and unacceptable. Reluctance or resistance to allow access is, in a minority of instances, understandable and needs to be overcome by diplomatic persistence.

The cost of full implementation of the IAEA OMV plan, assuming the discontinuation of "support in cash and kind" from member states, is assessed to total some \$M10 not including the costs of common services anticipated to be funded through the United Nations monitoring, verification and inspection commission (UNMOVIC).

### **Lessons learned**

As in most endeavours, the lessons learned tend to be a redistribution of the priorities given to components of an overall strategy that, in hindsight, were perhaps rather predictable, for example:

The first lesson concerns information. Retrospective analysis of open-press information available in the latter half of the 1980s indicates that suspicions should have been aroused that Iraq was pursuing nuclear activities way beyond its declared programme. Presumably, there was even more information available to the intelligence agencies of concerned member states that might have justified more than mere suspicions. Sadly, experience has shown that information is highly valued and jealously guarded by the holder despite the fact that the holder might not be in the best position to exploit it. In reality unexploited information is of little or no value. Information holders should, in timely and comprehensive fashion, make it available to the "task holders".

A second lesson concerns the definition of tasks. The legal basis for a set of tasks, must address both immediate and long-term goals and include realistic enforceable mechanisms for the maintenance of the latter. The nature and character of the tasks, as well as their implementation procedures, should be well defined. The nature and character of the task holders should be selected accordingly. Military personnel are clearly qualified and appropriate for military operations. Technologists are clearly qualified and appropriate for technological operations. The areas of responsibility of the task holders should be precisely defined and devoid of ambiguity. Realistic estimates should be made of the scale of the envisaged tasks and should be updated on the basis of any new information or accumulated experience.

A third lesson concerns the funding of tasks. Tasks should be adequately, indeed generously, funded and a long-term source of funding should be assured. The activities of both the IAEA and UNSCOM were frequently impeded by inadequate funding – demonstrated by the inordinate efforts put into fund-raising by the UNSCOM Executive Chairman, at the expense of his main-line task. Bodies assigned to specific tasks should, initially, be over-resourced – include expertise from all conceivably relevant technologies - and re-sized on the basis of experience in implementation.

A fourth lesson concerns perception. States appear to demonstrate an unduly pessimistic appreciation of the capability of international organisations to carry out functions considered to be vital to their own security. Conversely, states appear to demonstrate an unduly optimistic appreciation of their own capability or commitment to carry out such functions themselves. Furthermore, viewpoints within and among states differ greatly and cost/benefit analyses conducted differ greatly dependent upon the definition of terms. For example from one viewpoint:

- the military action of 16 December 1998 effectively prevented the continuation of inspections in Iraq and, as a result, removed the source of any practical assurance that Iraq was not pursuing a nuclear weapons programme – despite the absence of funding.

An alternative viewpoint might conclude that:

- the military action of 16 December 1998 effectively prevented the implementation of paragraph 22 of resolution 687 (1991) (the lifting of the oil embargo) and as a result removed a source of funding that Iraq might have used to pursue a nuclear weapons programme – despite the presence of inspectors.

Finally, perhaps the most important lesson is to remember old lessons. To quote one that springs to mind: “if a job is worth doing it is worth doing well”. Applying this old adage to international nuclear material safeguards would long ago have empowered the IAEA secretariat to include undeclared nuclear materials and activities in its remit. It has often been suggested that the Iraq case represented a serious failure of the IAEA’s safeguards system. Frankly, that is essentially true, although one vital qualification is warranted. This was not a failure of the IAEA secretariat’s implementation of the IAEA’s safeguards system, but rather a failure made inevitable by a fundamental weakness of the system itself. In principle, much has since been done to remedy that weakness in the form of the “additional protocol” which adds to the comprehensive safeguards agreement the means to cater for undeclared nuclear materials and activities. In practice, the poor and slow response by member states to adopt that protocol and the even poorer statistics of its being put into force says little for any substantial change of heart. There is, however, no other alternative to the additional protocol and universal adherence must, however late, eventually happen. One can only hope that “late” is not, once more, overtaken by “too late”.

## **Conclusion**

It is perhaps fitting to open this section by restating that the Security Council did not request the IAEA Director General to draw conclusions as to Iraq’s compliance with its obligations under the relevant resolutions, but rather to report on his progress in the requested tasks. Recognising that the assessment of the completeness or adequacy of Iraq’s “compliance” is the prerogative of the Security Council, the Director General’s reports to the Council were confined to statements of facts and findings and deliberately avoided “value judgements”.

That said, the IAEA’s October 1997 report to the Security Council made it clear that, based on its extensive programme of inspections, the IAEA was satisfied that there were “no indications” of Iraq having attained its goal of producing nuclear weapons or of having retained any practical capabilities for the production of nuclear weapons or meaningful quantities of weapon-useable nuclear material. The October 1997 report and subsequent reports have also indicated that the IAEA was satisfied, provided it retained its right to full and free access in Iraq, that it was in a position to focus its activities on implementing its OMV plan. Furthermore, the IAEA’s subsequent reporting has made it clear that the uncertainties resulting from the few remaining questions and concerns did not constitute an impediment to the implementation of its OMV plan. That same reporting recorded the IAEA’s intention, as part of its OMV plan, to continue with the investigation of the remaining questions and concerns, as well as any other matters that came to its attention, and to arrange for the destruction, removal or rendering harmless of any prohibited item that may be discovered through such investigations.

Finally, and critically dependant upon the right of access, comprehensive implementation of the IAEA OMV plan would make it very difficult for Iraq to carry out a clandestine “from the ground up” nuclear programme of any meaningful proportion - though it must be recognised that Iraq’s acquisition of weapon-usable nuclear material would present a serious challenge to the efficacy of the OMV plan. Nonetheless, failure to implement the OMV plan makes it impossible for the international community to obtain any assurance that Iraq has not reconstituted a nuclear programme. The converse is also true, in that failure to implement the IAEA OMV plan (“reinforced” since October 1997) makes it impossible for Iraq to demonstrate its compliance with the relevant Security Council resolutions. Surely, from any perspective, that common failure is unacceptable. Any meaningful solution to the ongoing impasse must involve the resumption of inspections – hopefully sooner rather than later.

The opinions expressed in this paper are those of the authors and should not be taken to represent the opinions of the International Atomic Energy Agency.