

Undeclared Nuclear Activities and Outstanding Issues: Clean Bill of Health?

Michael Spies, Lawyers' Committee on Nuclear Policy, May 2006

In the ongoing debate regarding Iran's nuclear ambitions, much has been made of the IAEA's finding that it is not yet "in a position to conclude that there are no undeclared nuclear materials or activities in Iran."¹ Depending on the perspective of the beholder, many different spins have been placed on this statement. Hawks in Washington take the position that the IAEA has not been able to confirm the absence of a military nuclear program in Iran after three years.² More cautious observers state, at the very least, that this indicates Iran's nuclear file has not been given a clean bill of health by the IAEA.³ Either way the implication, stronger or weaker depending on the observer, is that Iran must or might be hiding a weapons program.

But both these viewpoints are misleading. To find out why we must explore the nature of Iran's obligations under the Nuclear Non-Proliferation Treaty (NPT) and its related safeguards agreement with the IAEA. Article III of the NPT requires non-nuclear weapon states to accept and follow safeguards, implemented by the IAEA, "for the exclusive purpose of verification of the fulfillment of its obligations... with a view to preventing diversion of nuclear energy from peaceful uses to nuclear weapons or other nuclear explosive devices."

Critical to the Iran issue, the objective of the NPT mandated safeguards, as stated by its Safeguards Agreement, is limited to "the timely detection of diversion of ... nuclear material from peaceful nuclear activities" to unknown use or use in weapons.⁴ For each state implementing safeguards, the culmination of IAEA safeguard and verification procedures is an annual certification that no declared nuclear material has been diverted to military use. The conclusion that no diversion has occurred certifies that the state in question is in compliance with its undertaking, under its safeguards agreement and Article III of the NPT, to not divert material to non-peaceful purposes. In the case of Iran, the IAEA was able to conclude in its November 2004 report that that all declared nuclear materials had been accounted for and therefore none had been diverted to military purposes.⁵ The IAEA reached this same conclusion in September 2005.⁶

Only for states that implement the Additional Protocol, the IAEA annually certifies the absence of undeclared nuclear materials or activities.⁷ Drawing the conclusion for the first time that there are no undeclared nuclear activities takes a great deal of time in any circumstance, as the IAEA

¹ International Atomic Energy Agency, Report on the Implementation of Safeguards in the Islamic Republic of Iran, GOV/2006/15, February 27, 2006.

² Paul Leventhal, Press Conference on Iran's Nuclear Program, National Press Club, Washington DC, September 16, 2005, <http://www.nci.org/05nci/09/PLpressconferencstatement.htm>.

³ Paul Kerr, "Iran's Nuclear Efforts, Capabilities Still Murky", *Arms Control Today*, Volume 36(3), April 2006.

⁴ IAEA Model Comprehensive Safeguards Agreement, INFCIRC/153, paragraph 28.

⁵ IAEA, Report on the Implementation of Safeguards in the Islamic Republic of Iran, GOV/2004/83, paragraph 112, November 2004.

⁶ IAEA, Report on the Implementation of Safeguards in the Islamic Republic of Iran, GOV/2005/67, paragraph 51, September 2005.

⁷ IAEA, *Safeguards Glossary*, 2001 Edition.

has remarked in its assessments of Iran's safeguards status.⁸ As an example, Japan's additional protocol entered into force in 1999, yet the IAEA concluded the absence of undeclared nuclear activities in Japan for the first time in 2003.⁹ As of the latest annual IAEA Safeguards Report, of the 61 states where both the NPT safeguards and the additional protocol are implemented, in only 21 of these states has the IAEA concluded the absence of undeclared nuclear activity.¹⁰ The IAEA has stated this process will take longer in Iran due to the history of concealed nuclear activities.¹¹

Therefore, the statement "not yet in a position to conclude that there are no undeclared nuclear materials or activities," which is presently true for Iran, is also true for 40 other states including Canada, the Czech Republic, and South Africa.¹² These three states in particular are notable because they have had additional protocols in force longer than Iran and also operate nuclear facilities on their territory.

Due to the 18 year history of concealed nuclear activities, Iran is a special case. However, this non-official quasi status does not confer any technical rationale for interpreting IAEA conclusions differently than for any other state. In general, the inability to conclude the absence of undeclared nuclear activity is caused by an absence of evidence, which must be meticulously determined from samples collected over a wide area, and in the case of Iran, over a very large territory. The obstruction of the verification process, for instance by a state restricting the activities of IAEA inspectors, could constitute non-compliance for states implementing the Additional Protocol, only if the IAEA Board were to find that it could not be assured no diversion has occurred.

For some it is tempting to declare, based on the inability of the IAEA to presently draw a conclusion on the absence of nuclear activities, that Iran continues to operate concealed facilities and that any such facilities must be for a military program. But the IAEA has cautioned that the lack of a conclusion does not imply suspicion of undeclared nuclear materials and activities, as the matter is frequently spun in the media.

In order to reach such a conclusion the IAEA must also take into account the history of concealment and the nature of the declared program as a whole. Therefore, the resolution of outstanding issues related to the investigation into Iran's past concealed activities is critical to the Agency's ability to determine the absence of undeclared materials and activities, as will be shown in the next section. Beyond determining that no undeclared activities exist, the IAEA's probe into Iran's past concealed activities is essential for the restoration of confidence in Iran's nuclear program.

The authority of the IAEA to conduct this investigation into Iran's nuclear past is inseparable from its expanded mandate under the Additional Protocol. In other words, the sole technical

⁸ GOV/2004/83; GOV/2005/67.

⁹ IAEA, Protocol Additional To The Agreement Between The Government of Japan and the International Atomic Energy Agency in implementation of Article III.1 and 4 Of The Treaty on The Non-Proliferation of Nuclear Weapons, 16 February 2000; IAEA, *Safeguards Implementation Report*, 2004.

¹⁰ IAEA, *Annual Safeguards Implementation Report*, 2004.

¹¹ GOV/2005/67, para. 51.

¹² As of December 31, 2004.

purpose of the ongoing investigation is to allow the IAEA to be in the position to draw a conclusion under the Additional Protocol that no undeclared nuclear activities or materials exist in Iran. Absent the implementation of the Additional Protocol, the finding made in November 2004, that no diversion has occurred, is the central conclusion regarding Iran's safeguards compliance.

Outstanding Issues in the IAEA Investigation

In literally microscopic detail, the IAEA continues to probe into several outstanding issues relating to discrepancies in Iran's declarations of past activities. As reported to the Board prior to its March 6 meeting, there are several outstanding issues, the most important of which relate to HEU and LEU contamination, and the acquisition of P1 and P2 centrifuge technology. In addition the Agency continues to examine the issue of a document describing the casting of uranium metal into hemispheric shapes, which would be necessary for use in a bomb. The IAEA also continues to follow up on discrepancies between its analysis and Iran's declarations of its past plutonium experiments.¹³

The more troublesome matter, HEU contamination has largely been resolved. The IAEA noted in November 2005 that its analysis of the contamination "tend, on balance, to support Iran's statement about the foreign origin of most of the observed HEU contamination."¹⁴ The IAEA continues to investigate the origin of LEU and some HEU particles, but it is not likely additional analysis will reveal anything more than additional foreign contamination, or at worst, a few additional uranium enrichment experiments. Regardless, IAEA Director-General Mohamed ElBaradei has indicated that it will be impossible to definitively track down all sources of LEU contamination, thus necessitating greater transparency from Iran on the history of its centrifuge program, above and beyond Iran's formal legal requirements.

The IAEA will only be able to be in a position to conclude that there are no undeclared nuclear materials or activities in Iran by fully understanding the development and extent of the centrifuge program. Thus the history of Iran's enrichment program is of critical importance to the IAEA's continued legal authority to pursue this line of inquiry. Yet the IAEA can only continue to work toward a conclusion if Iran applies the Additional Protocol *and* fulfills the requests of the agency above its legal requirements.

Amidst the current political climate, with the Security Council debating whether to adopt a chapter VII resolution on Iran, the IAEA struggles to continue its investigation under a more restricted mandate absent the broader inspection authority granted by the Additional Protocol. Foremost, the Agency continues to probe the history of Iran's uranium enrichment program. Specifically, Iran has failed to produce documentation relating to the acquisition of P-1 centrifuge components during the mid 1990's.¹⁵ Iran previously stated that due to the clandestine

¹³ Iran conducted plutonium experiments between 1988 and 1993 resulting in the production of 100mg of plutonium. Roughly 8kg of separated plutonium are necessary for use in a nuclear weapon. The IAEA continues to investigate the presence of PU-240 contamination in some of the samples taken. GOV/2004/83, para. 72-78.

¹⁴ IAEA, Report on the Implementation of Safeguards in the Islamic Republic of Iran, GOV/2005/87, para. 12, November 2005.

¹⁵ Specifically 500 sets of components, see: GOV/2006/15, para. 15.

nature of its supply network, a single handwritten document, which it had turned over the IAEA, is the only documentation it possesses.¹⁶ As of the current report the IAEA still awaits documentation relating to the shipment of this purchase.¹⁷

The IAEA has also requested documentation related to the alleged procurement of P-2 centrifuge components between 1995, when it acquired the designs, and 2002. Iran claims it did not carry out work on the centrifuges during this period. The IAEA has recently confronted Iran with documents related to work allegedly carried out by a contracting company between 2002 and 2003, and the import of centrifuges components.¹⁸ As of the latest report the IAEA is examining the additional information Iran has supplied to it on this matter.¹⁹ Days after president Amadinejad announced Iran has succeeded in enriching uranium to a level suitable for a reactor, he casually mentioned that Iran has begun work on the more advanced P2 centrifuge design.²⁰ The IAEA notes its inquiry into this matter in its current report.²¹

Regarding the reporting on the import of centrifuge components, it must be noted that Iran is not required to report the import of such components under either its Safeguards Agreement or the Additional Protocol, but it is obligated under the Additional Protocol to provide the IAEA with such information upon the request of the Agency.²²

The IAEA also continues to be concerned about the revelation of a document found in Iran describing the procedures for reducing uranium gas into metal forms in small quantities and shaping the metal into hemispheric shapes. The purpose of such a procedure would almost certainly be for military use. The IAEA has noted that since Iran acquired the documents in the late 1980s it does not appear to have ever used any of procedures described. The latest report mentions that although Iran has allowed the IAEA to examine to document, it continues to decline to give the agency a copy. The IAEA notes it has seen the same document in other member states, likely other beneficiaries of the A.Q. Khan network such as Libya.²³

The IAEA has indicated that the existence of the document makes Iran's cooperation on the development of its P-1 program even more critical, not because of concerns over its military implications but because of the suspicions such a document raises within the international community. On this point it is therefore incumbent upon Iran to be as transparent as possible in order to help allay the fears over its nuclear intentions. The IAEA's treatment of this issue strongly indicates that the document is of little relevance in of itself, despite the political mileage

¹⁶ GOV/2006/15, para. 12.

¹⁷ GOV/2006/27, para. 11.

¹⁸ The IAEA inquired about the alleged import to a contracting company of 900 magnets from a foreign entity in mid-2003, to which Iran replied only a limited number of magnets were delivered. Iran is not required to report the import such components under either its Safeguards Agreement (INFCIRC/214) of the Additional Protocol (INFCIRC/540), but is obligated under the Additional Protocol to provide the IAEA with such information upon the request of the Agency (INFCIRC/540, Article 2 (a)(ix)(b)); IAEA, Report on the Implementation of Safeguards in the Islamic Republic of Iran, para. 19, GOV/2006/27, March 2006.

¹⁹ GOV/2006/27, para. 13.

²⁰ William Broad and David Sanger, "New Worry Rise on Iranian Claim of Nuclear Steps", *New York Times*, Late Edition - Final, Section A, Page 1, April 17, 2006.

²¹ GOV/2006/27, para. 14.

²² INFCIRC/540, Article 2(a)(ix)(b); GOV/2006/27, para. 19.

²³ GOV/2006/27, para. 15-16.

against Iran that US Ambassador Bolton has gotten out of it. Consistent with the positions ElBaradei has taken in similar issues in this case, his concern regarding the uranium metal document is more over how it affects international confidence over Iran's program rather than its value as evidence of a weapons program.

Regarding Iran's past plutonium experiments the IAEA continues to investigate Iran's explanations for inconsistencies in its analyses. For the first time the Agency said that it cannot exclude that the plutonium examined could have been derived from a source other than what Iran declared. Iran's explanation, for the higher presence of PU-240 and AM-241 in the glove-boxes used for the experiments, was that the glove-boxes were contaminated from prior use, noting that they were imported prior to the 1979 Islamic Revolution.²⁴

The latest safeguards report did not add anything new on the Heavy Water Reactor under construction near Arak.²⁵ There had not been previously much attention raised on this, relative to the issue of uranium enrichment, despite its more obvious proliferation implications. But the Security Council is presently considering making the cessation of the facility mandatory.²⁶ There have been no new development on the polonium experiments since the November 2004 report. From the IAEA characterization of the experiments, they seemed more of the nature of obscure university experiments rather than anything weapons related, hence the IAEA's apparently limited concern with the issue. Iran's atomic energy agency had not been aware of the experiments until the IAEA brought it through attentions after sifting through laboratory logbooks. In September 2005 the IAEA downgraded its inspections of Iran's fuel fabrication, heavy water program, and laser enrichment to the level of routine safeguards.

Beyond the ability of IAEA to draw its conclusion under the Additional Protocol, the resolution of these issues are necessary in order for the IAEA "to be in a position to provide the required assurance about the peaceful nature of [Iran's] programme."²⁷ ElBaradei has made clear that the successful conclusion of the 3-year old IAEA investigation will require Iran to implement the Additional Protocol above and beyond its legal obligations. For its part Iran should spare no effort to fully cooperate to the extent to necessary to quickly resolve all outstanding issues. That effort must include the prompt ratification of the Additional Protocol. Since early February, Iran has suspended its voluntary implementation of the Additional Protocol in retaliation for the IAEA Board voting to report the matter to the UN Security Council.

The current thrust of US and EU action has been to compel Iran to cease operation of all uranium enrichment related activities, previously requested of Iran by the IAEA Board and UN Security Council as voluntary confidence building measures. While the suspension or cessation of such activities would help greatly to reduce international tension on this matter, it is not necessary for the completion of the IAEA investigation. In the latest safeguards report the IAEA made the unusual effort to stress that "safeguards obligations and confidence building measures are different, distinct and not interchangeable." The report further states that "the implementation of

²⁴ GOV/2004/83, para. 77.

²⁵ GOV/2006/27, para. 18.

²⁶ Draft Security Council Resolution, May 3, 2006, <http://www.lcnp.org/disarmament/iran/draftresUNSC03may.pdf>.

²⁷ IAEA Director General Dr. Mohamed ElBaradei, Introductory Statement to the Board of Governors, 24 November 2005, <http://www.iaea.org/NewsCenter/Statements/2005/ebsp2005n018.html>.

confidence building measures...” which have been the focus of UN Security Council action, “...is no substitute for the full implementation at all times of safeguards obligations.”²⁸ The IAEA thus suggests that the confidence building measures are not as important as the safeguards, the object of which is to prevent the diversion of nuclear materials to military use.

In the same paragraph the IAEA states that “in this context, it is also important to note that the Agency’s safeguards judgements and conclusions in the case of Iran, as in all other cases, are based on verifiable information available to the Agency, and are therefore, of necessity, limited to past and present nuclear activities. The Agency cannot make a judgement about, or reach a conclusion on, future compliance or intentions.” The subtext of this statement is that while Iran can be in full compliance with its safeguards obligations, states can still point to its activities as revealing dubious intentions. Although it is not mentioned, such suspicions are inherent in the utilization of nuclear energy. Thus Iran’s critics will always be able to say its nuclear program *could* be for weapons, despite whatever conclusions the agency derives.

A final point is that the issue of suspension, which the West has become fixated upon as the sole point of contention, is a red herring. The IAEA view is that a pilot scale enrichment facility in Iran poses no nuclear weapons proliferation concern. Moreover, Iran remains several years away at best from being in the position to begin constructing an industrial scale enrichment capability. Therefore, the urgent rush to impose penalties on Iran for failing to re-suspend activities misses the point, which is preventing the spread of nuclear weapons. Placing such a heavy emphasis on such a non-critical point needlessly escalates the situation and diminishes the possibility for the resumption of dialogue and a negotiated outcome.

²⁸ GOV/2006/27, para. 36.