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Implementation of the NPT Safeguards Agreement and relevant provisions of Security Council resolutions 1737 (2006), 1747 (2007), 1803 (2008), and 1835 (2008) in the Islamic Republic of Iran

Report by the Director General

1. On 5 June 2009, the Director General reported to the Board of Governors on the implementation of the NPT Safeguards Agreement and relevant provisions of Security Council resolutions 1737 (2006), 1747 (2007), 1803 (2008) and 1835 (2008) in the Islamic Republic of Iran (Iran) (GOV/2009/35). This report covers relevant developments since that date.

A. Current Enrichment Related Activities

2. On 12 August 2009, Iran was feeding UF₆ into Unit A24, and ten cascades of Unit A26, at the Fuel Enrichment Plant (FEP) at Natanz.¹ On that day, the eight other cascades of Unit A26 were under vacuum. Iran has continued with the installation of cascades at Unit A28; fourteen cascades have been installed and the installation of another cascade is continuing.² All machines installed to date are IR-1 centrifuges. Installation work at Units A25 and A27 is also continuing.

¹ There are two cascade halls planned at FEP: Production Hall A and Production Hall B. According to the design information submitted by Iran, eight units (Units A21 to A28) are planned for Production Hall A (see GOV/2008/38, para. 2).

² On 12 August 2009, 4592 centrifuges were being fed with UF₆ and an additional 3716 centrifuges had been installed.

3. Iran has estimated that, between 18 November 2008 and 31 July 2009, 7942 kg of UF₆ was fed into the cascades and a total of 669 kg of low enriched UF₆ was produced.³ The nuclear material at FEP (including the feed, product and tails), as well as all installed cascades and the feed and withdrawal stations, are subject to Agency containment and surveillance.⁴

4. As reported earlier, the Agency had informed Iran that, given the increasing number of cascades being installed at FEP and the increased rate of production of low enriched uranium at the facility, improvements to the containment and surveillance measures at FEP were needed for the Agency to continue to fully meet its safeguards objectives for the facility (GOV/2009/35, para. 3). In the course of a series of meetings, Iran and the Agency agreed on the improvements, which were put in place on 12 August 2009. The next physical inventory verification (PIV) at FEP is planned for November 2009. At that time, the Agency will be able to verify the inventory of all nuclear material at the facility and evaluate the nuclear material balance after the cold traps have been cleaned out.

5. Iran and the Agency have also agreed on improvements regarding the provision of accounting and operating records, and on the requirements for timely access for unannounced inspections (GOV/2009/35, para. 5).

6. Between 24 May 2009 and 13 August 2009, a total of approximately 37 kg of UF₆ was fed into a 10-machine IR-4 cascade, a 10-machine IR-2m cascade and single IR-1, IR-2m and IR-4 centrifuges at the Pilot Fuel Enrichment Plant (PFEP). The nuclear material at PFEP, as well as the cascade area and the feed and withdrawal stations, remain under Agency containment and surveillance.⁴

7. The results of the environmental samples taken at FEP and PFEP indicate that both plants have been operating as declared (i.e. less than 5.0% U-235 enrichment).⁵ Since the last report, the Agency has successfully conducted three unannounced inspections. A total of 29 unannounced inspections have been conducted at FEP since March 2007.

B. Reprocessing Activities

8. The Agency has continued to monitor the use and construction of hot cells at the Tehran Research Reactor (TRR) and the Molybdenum, Iodine and Xenon Radioisotope Production (MIX) Facility. There have been no indications of ongoing reprocessing related activities at those facilities. While Iran has stated that there have been no reprocessing related R&D activities in Iran, the Agency can confirm this only with respect to these two facilities, as the measures of the Additional Protocol are not available.

³ The Agency has verified that, as of 17 November 2008, 9956 kg of UF₆ had been fed into the cascades and 839 kg of low enriched UF₆ had been produced since the beginning of operations in February 2007 (GOV/2009/8, para. 3). The Agency has confirmed, through independently calibrated operator load cell readings, that, between 18 November 2008 and 2 August 2009, 7976 kg of UF₆ was fed into the cascades, and a total of 591 kg of low enriched UF₆ product and 6847 kg of UF₆ tails and dump material was off-loaded into UF₆ cylinders. The difference of 538 kg between the input and output figures comprises natural, depleted and low enriched UF₆ arising mainly from hold-up in the various cold traps and is not inconsistent with the design information provided by Iran.

⁴ In line with normal safeguards practice, small amounts of nuclear material at the facility (e.g. some waste and samples) are not under containment and surveillance.

⁵ Results are available for samples taken up to 25 April 2009 for FEP and up to 19 April 2009 for PFEP. These results have shown particles of low enriched uranium (with up to 4.4% U-235), natural uranium and depleted uranium (down to 0.38% U-235 enrichment).

C. Heavy Water Reactor Related Projects

9. On 19 June 2009, the Agency requested Iran to update the Design Information Questionnaire (DIQ) for the Fuel Manufacturing Plant (FMP) and the Iran Nuclear Research Reactor (IR-40) to reflect the design features of the fuel assembly verified by the Agency during its May 2009 inspection at FMP (GOV/2009/35, para. 9). Under cover of a letter dated 21 August 2009, Iran submitted an updated DIQ for FMP, which the Agency is now reviewing.

10. On 11 August 2009, the Agency conducted both a PIV and design information verification (DIV) at FMP, at which time it was noted that the final quality control equipment had been installed, and the fuel assembly referred to above was undergoing quality control testing. Assessment of the results of the PIV is still pending.

11. On 17 August 2009, Iran, following repeated requests by the Agency, provided the Agency with access to the IR-40 reactor at Arak, at which time the Agency was able to carry out a DIV. The Agency verified that the construction of the facility was ongoing. In particular, the Agency noted that no reactor vessel was yet present. The operator stated that the reactor vessel was still being manufactured, and that it would be installed in 2011. Iran also stated that no hot cell windows or manipulators could be procured from foreign sources and that it was considering producing them domestically. Iran estimated that the civil construction work was about 95% completed and that the plant itself was about 63% completed. The facility at its current stage of construction conforms to the design information provided by Iran as of 24 January 2007. However, Iran still needs to provide updated and more detailed design information, in particular about the nuclear fuel characteristics, fuel handling and transfer equipment and the nuclear material accountancy and control system. The Agency has continued using satellite imagery to monitor the status of the Heavy Water Production Plant, which seems not to have been operating since the last report.

D. Other Implementation Issues

D.1. Uranium Conversion

12. The Agency finalized its assessment of the results of the PIV carried out at the Uranium Conversion Facility (UCF) in March 2009 (GOV/2009/35, para. 11), and has concluded that the inventory of nuclear material at UCF as declared by Iran is consistent with those results, within the measurement uncertainties normally associated with conversion plants of similar throughput. Between 8 March 2009 and 10 August 2009, approximately 11 tonnes of uranium in the form of UF_6 was produced at UCF. This brings the total amount of uranium in the form of UF_6 produced at UCF since March 2004 to approximately 366 tonnes, some of which was transferred to FEP and PFEP, and all of which remains under Agency containment and surveillance. Between March 2009 and 10 August 2009, 159 samples of ammonium diuranate, containing about 2 kg of uranium, were received at UCF from the Bandar Abbas Uranium Production Plant.

13. On 21 July 2009 and 10 August 2009, the Agency conducted design information verification at UCF. The Agency was able to confirm that the facility conforms to the design information provided by Iran.

D.2. Design Information

14. Iran has not yet resumed the implementation of the revised Code 3.1 of the Subsidiary Arrangements General Part on the early provision of design information (GOV/2008/59, para. 9; GOV/2007/22, paras 12–14). Iran is the only State with significant nuclear activities which has a comprehensive safeguards agreement in force but is not implementing the provisions of the revised Code 3.1. The absence of such information results in late notification to the Agency of the construction of new facilities and changes to the design of existing facilities.

15. The Agency has not yet received the requested preliminary design information for the nuclear power plant that is to be built in Darkhovin (GOV/2008/38, para. 11).

D.3. Other Matters

16. In view of the anticipated loading of fuel into the Bushehr Nuclear Power Plant (GOV/2009/35, para. 15), now expected to take place in October/November 2009, the Agency installed a containment and surveillance system at that facility on 22–25 August 2009.

17. In a letter dated 12 July 2009, Iran informed the Agency that it had transferred all nuclear material out of the Uranium Chemical Laboratory at Esfahan and that it did not plan any other nuclear activities in this location and requested the Agency to consider this facility as a decommissioned facility. The Agency has scheduled an inspection to confirm the decommissioned status of this facility.

E. Possible Military Dimensions

18. As referred to in the Director General's previous reports to the Board (most recently in GOV/2009/35, para. 17), there remain a number of outstanding issues which give rise to concerns, and which need to be clarified to exclude the existence of possible military dimensions to Iran's nuclear programme. As indicated in those reports, it is essential that Iran re-engage with the Agency to clarify and bring to a closure questions related to the alleged studies, the circumstances of the acquisition of the uranium metal document, and the procurement and R&D activities of military related institutes and companies that could be nuclear related as well as the production of nuclear related equipment and components by companies belonging to defence industries.

19. It should be noted that, although the Agency has limited means to authenticate independently the documentation that forms the basis of the alleged studies, the information is being critically assessed, in accordance with the Agency's practices, by corroborating it, inter alia, with other information available to the Agency from other sources and from its own findings. A description of all of the documentation available to the Agency about the alleged studies which the Agency has been authorized to share with Iran and which has been sufficiently vetted by the Agency was provided in the Director General's report of May 2008 (GOV/2008/15, Annex A). It should be noted, however, that the constraints placed by some Member States on the availability of information to Iran are making it more difficult for the Agency to conduct detailed discussions with Iran on this matter. Notwithstanding, as the Director General has repeatedly emphasized, the information contained in that documentation appears to have been derived from multiple sources over different periods of time, appears to be generally consistent, and is sufficiently comprehensive and detailed that it needs to be

addressed by Iran with a view to removing the doubts which naturally arise, in light of all of the outstanding issues, about the exclusively peaceful nature of Iran's nuclear programme.⁶

20. In connection with the outstanding issues, Iran has provided to the Agency: (a) its overall assessment of the documentation related to the alleged studies (GOV/2008/15, Annex A), and (b) partial replies and a document, in response to specific questions presented by the Agency (GOV/2008/15, Annex B). Iran has indicated further that it has information which could shed more light on the nature of the alleged studies, but has not yet provided it to the Agency (GOV/2008/15, para. 23). In the meantime, the Agency has studied the information provided by Iran thus far, but has not yet been given the opportunity by Iran to discuss its findings in detail owing to Iran's insistence that it had already provided its final responses. In the view of the Agency, however, there are still matters which need to be discussed based on the documents and information provided by Iran itself or which relate to information which the Agency has independently corroborated. Examples of information included in the documentation that Iran has not disputed as being factually accurate⁷ are provided below.

21. Although Iran has challenged the allegation that it has engaged in nuclear related high explosives testing studies, Iran has told the Agency that it has experimented with the civil application of simultaneously functioning multiple detonators (GOV/2008/15, para. 20), and was asked by the Agency to provide it with information which would prove that such work had been for civil and non-nuclear military purposes (GOV/2008/38, para. 17(c)). Iran has not yet shared that information with the Agency. The Agency would also like to discuss with Iran the possible role that a foreign national with explosives expertise (GOV/2008/38, para. 17(d)), whose visit to Iran has been confirmed by the Agency, played in explosives development work.

22. With respect to the letter with handwritten annotations which was part of the documentation related to the alleged green salt project (GOV/2008/15, Annex A.1, Doc. 2), Iran has confirmed the existence of the underlying letter, has shown the original to the Agency and has provided the Agency with a copy of it. The existence of this original demonstrates a direct link between the relevant documentation and Iran. As already requested of Iran, the Agency needs to see further related correspondence and to have access to the individuals named in the letter.

23. In respect to the alleged missile re-entry vehicle studies, the Agency still wishes to visit the civilian workshops which Iran has indicated to the Agency exist and which are identified in the documentation as having been involved in the production of model prototypes of a new payload chamber for a missile (GOV/2008/38, para. 17(e)). In addition, while asserting that the documentation on the alleged missile re-entry vehicle was forged and fabricated, Iran informed the Agency that it was well known that Iran was working on the Shahab-3 missile. In light of that, the Agency has reiterated the need to hold discussions with Iran on the engineering and modelling studies associated with the re-design of the payload chamber referred to in the alleged studies documentation to exclude the possibility that they were for a nuclear payload.

24. In light of the above, the Agency has repeatedly informed Iran that it does not consider that Iran has adequately addressed the substance of the issues, having focused instead on the style and form of presentation of the written documents relevant to the alleged studies and providing limited answers or simple denials in response to other questions. The Agency has therefore requested Iran to provide more substantive responses and to provide the Agency with the opportunity to have detailed discussions with a view to moving forward on these issues, including granting the Agency access to

⁶ GOV/2008/38, para. 16; GOV/2009/35, para. 23.

⁷ GOV/2008/15, para. 18.

persons, information and locations identified in the documents in order for the Agency to be able to confirm Iran's assertion that these documents are false and fabricated. The Agency has reiterated its willingness to discuss modalities that could enable Iran to demonstrate credibly that the activities referred to in the documentation are not nuclear related, as Iran asserts, while protecting sensitive information related to its conventional military activities.

25. For the Agency to be in a position to progress in its verification of the absence of undeclared nuclear material and activities in Iran, it is essential that Iran take the necessary steps to enable the Agency to clarify and bring to a closure the outstanding issues and implement its Additional Protocol.

F. Summary

26. The Agency continues to verify the non-diversion of declared nuclear material in Iran. Iran has cooperated with the Agency in improving safeguards measures at FEP and in providing the Agency with access to the IR-40 reactor for purposes of design information verification. Iran has not, however, implemented the modified text of its Subsidiary Arrangements General Part, Code 3.1, on the early provision of design information.

27. Iran has not suspended its enrichment related activities or its work on heavy water related projects as required by the Security Council.

28. Contrary to the requests of the Board of Governors and the Security Council, Iran has neither implemented the Additional Protocol nor cooperated with the Agency in connection with the remaining issues of concern which need to be clarified to exclude the possibility of military dimensions to Iran's nuclear programme. Regrettably, the Agency has not been able to engage Iran in any substantive discussions about these outstanding issues for over a year. The Agency believes that it has provided Iran with sufficient access to documentation in its possession to enable Iran to respond substantively to the questions raised by the Agency. However, the Director General urges Member States which have provided documentation to the Agency to work out new modalities with the Agency so that it could share further documentation with Iran, as appropriate, since the Agency's inability to do so is rendering it difficult for the Agency to progress further in its verification process.

29. It is critical for Iran to implement the Additional Protocol and clarify the outstanding issues in order for the Agency to be in a position to provide credible assurance about the absence of undeclared nuclear material and activities in Iran.

30. The Director General will continue to report as appropriate.