

Board of Governors

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Verification and Monitoring in the Islamic Republic of Iran in light of United Nations Security Council Resolution 2231 (2015)

Report by the Director General

1. The Board of Governors has authorized the Director General to implement the necessary verification and monitoring of the Islamic Republic of Iran's (Iran's) nuclear-related commitments as set out in the Joint Comprehensive Plan of Action (JCPOA), and report accordingly, for the full duration of those commitments in light of United Nations Security Council (Security Council) resolution 2231 (2015).¹

2. This report to the Board of Governors and in parallel to the Security Council is to confirm that the Agency has verified that Iran has taken the actions specified in paragraphs 15.1–15.11 of Annex V of the JCPOA.²

3. The Agency has verified and confirms that, as of 16 January 2016, Iran:

Arak Heavy Water Research Reactor (15.1)³

- i. was not pursuing the construction of the existing IR-40 Reactor (Arak Heavy Water Research Reactor) based on its original design (JCPOA, Annex I – Nuclear-related measures, para.3);
- ii. had removed the existing calandria from the IR-40 Reactor (para.3);
- iii. had rendered the calandria inoperable by filling the openings in it with concrete, such that the Agency was able to verify that the calandria is not usable for a future nuclear application (para. 3);
- iv. was not producing or testing natural uranium pellets, fuel pins or fuel assemblies specifically designed for the support of the IR-40 Reactor as originally designed (para. 10);

¹ GOV/2015/53.

² Security Council Resolution 2231 (2015), para. 5.

³ This numbering corresponds to the paragraphs of Annex V of the JCPOA.

- v. had stored under continuous Agency monitoring all existing natural uranium pellets and fuel assemblies for the IR-40 Reactor (para. 10);
- vi. had modified the fuel production process line at the Fuel Manufacturing Plant at Esfahan such that it cannot be used for the fabrication of fuel for the IR-40 Reactor as originally designed (para. 10);

Heavy Water Production Plant (15.2)

- i. had no more than 130 metric tonnes of nuclear grade heavy water or its equivalent in different enrichments (para. 14);
- ii. had informed the Agency about the inventory and the production of the Heavy Water Production Plant (HWPP) and was allowing the Agency to monitor the quantities of Iran's heavy water stocks and the amount of heavy water produced at the HWPP (para. 15);

Enrichment Capacity (15.3)

- i. had no more than 5060 IR-1 centrifuges installed at the Fuel Enrichment Plant (FEP) at Natanz in no more than 30 of the cascades in the configurations of the operating units at the time the JCPOA was agreed (para. 27);
- ii. was not enriching uranium above 3.67% U-235 (para. 28) at any of its declared nuclear facilities;⁴
- iii. had removed and stored in Hall B of FEP, under Agency continuous monitoring, all excess centrifuges and infrastructure not associated with the 5060 IR-1 centrifuges in FEP (para. 29), including all IR-2m centrifuges (para. 29.1), UF₆ pipework, and UF₆ withdrawal equipment from one of the withdrawal stations that was not in service at the time the JCPOA was agreed (para. 29.2);

Centrifuge Research and Development (15.4)

- i. was not accumulating enriched uranium through its enrichment research and development (R&D) activities and its enrichment R&D with uranium was not being conducted using centrifuges other than IR-4, IR-5, IR-6 and IR-8 centrifuges (para. 32);
- ii. was not conducting mechanical testing on more than two single centrifuges of type IR-2m, IR-4, IR-5, IR-6, IR-6s, IR-7 and IR-8 (para. 32);
- iii. was not building or testing, with or without uranium, types of centrifuge other than those specified in the JCPOA (para. 32);
- iv. had removed all of the centrifuges from the 164-machine IR-2m cascade and the 164-machine IR-4 cascade at PFEP and placed them in storage in Hall B of FEP in Natanz under Agency continuous monitoring (paras 33 and 34);
- v. was testing centrifuges installed at PFEP within the limits set out in the JCPOA i.e. a single IR-4 machine (para. 35), a 10-machine IR-4 cascade (para. 35), a single IR-5 machine (para. 36), a single IR-6 machine and its intermediate cascades (para. 37);
- vi. had yet to start testing its single IR-8 centrifuge (para. 38);

⁴ As of 16 January 2016, Iran was not enriching UF₆ at FEP.

- vii. had recombined the streams from the R&D cascades at PFEP through the use of welded pipework in a manner that precludes the withdrawal of the enriched and depleted uranium material produced (para. 39);
- viii. was, in relation to its declared nuclear facilities, testing centrifuges using uranium only at PFEP and conducting all mechanical testing of centrifuges only at PFEP and the Tehran Research Centre (para. 40);
- ix. had removed to Hall B of FEP in Natanz under Agency continuous monitoring all centrifuges at PFEP, except those needed for testing as described in the relevant paragraphs above, and those in Cascade 1 at PFEP; had rendered inoperable Cascade 1 by, inter alia, removing the rotors, injecting epoxy resin into the pipework and removing the electrical systems (para. 41);
- x. had stored all the IR-1 centrifuges previously installed in Cascade 6 at PFEP, and their associated infrastructure, in Hall B of FEP in Natanz under Agency continuous monitoring (para. 41); and was keeping the space in this line empty for R&D (para. 41);
- xi. was maintaining the cascade infrastructure for testing single centrifuges and small and intermediate cascades in two R&D lines (nos. 2 and 3); and had adapted two other R&D lines (nos. 4 and 5) through the requisite removal of existing infrastructure (para. 42);

Fordow Fuel Enrichment Plant (15.5)

- i. was not conducting any uranium enrichment or related R&D at the Fordow Fuel Enrichment Plant (FFEP) (para. 45);
- ii. had removed all nuclear material from FFEP (para. 45);
- iii. was maintaining no more than 1044 IR-1 centrifuges at FFEP, which were all in one wing (para. 46);
- iv. had modified for the production of stable isotopes two of the cascades at FFEP that had never experienced UF₆ by removing the connection to the UF₆ feed main header; and had moved cascade UF₆ pipework to storage in Fordow under continuous Agency monitoring (para. 46.1);
- v. was maintaining two cascades in an idle state and two cascades spinning, and had removed pipework that enables crossover tandem connections for these four cascades (para. 46.2);
- vi. had removed from the aforementioned wing two other cascades by removing the IR-1 centrifuges and associated cascade UF₆ pipework (para. 47.1);
- vii. had removed from the other wing of FFEP all IR-1 centrifuges and related uranium enrichment infrastructure, including pipework, and feed and withdrawal stations (para. 48.1);

Other Aspects of Enrichment (15.6)

- i. had provided the Agency with Iran's long-term enrichment and R&D enrichment plan which is to be part of Iran's initial declaration described in Article 2 of the Additional Protocol (para. 52);
- ii. had provided the Agency with a template for describing different centrifuge types (IR-1, IR-2m, IR-4, IR-5, IR-6, IR-6s, IR-7, IR-8) and associated definitions that have been agreed with JCPOA participants (para. 54);

- iii. had agreed with the JCPOA participants a procedure for measuring IR-1, IR-2m and IR-4 centrifuge performance data (para. 55);

Uranium Stocks and Fuels (15.7)

- i. had a stockpile of no more than 300 kg of UF₆ enriched up to 3.67% U-235 (or the equivalent in different chemical forms), as a result of either downblending to natural uranium, or sale and delivery out of Iran (para. 57);
- ii. had fabricated into fuel plates for the Tehran Research Reactor,⁵ transferred out of Iran or diluted to an enrichment level of 3.67% U-235 or less, all uranium oxide enriched to between 5% and 20% U-235 (para. 58);

Centrifuge Manufacturing (15.8)

- i. was not producing IR-1 centrifuges to replace damaged or failed machines, as its stock of such centrifuges was in excess of 500 (para. 62);

Transparency Measures (15.9)

- i. had completed the modalities and facility-specific arrangements to allow the Agency to implement all transparency measures provided for in Annex I of the JCPOA (see para. 4 below);

Additional Protocol and Modified Code 3.1 (15.10)

- i. had notified the Agency pursuant to paragraph 64, Section L of Annex I of the JCPOA that, effective on Implementation Day, Iran will provisionally apply the Additional Protocol to its Safeguards Agreement in accordance with Article 17(b) of the Additional Protocol (para. 64);
- ii. had notified the Agency pursuant to paragraph 65, Section L of Annex I of the JCPOA that, effective on Implementation Day, Iran will fully implement the modified Code 3.1 of the Subsidiary Arrangements to Iran's Safeguards Agreement as long as the Safeguards Agreement remains in force (para. 65);

Centrifuge Component Manufacturing Transparency (15.11)

- i. had provided to the Agency an initial inventory of all existing centrifuge rotor tubes and bellows and permitted the Agency to verify this inventory by item counting and numbering, and through containment and surveillance (para. 80.1); and
 - ii. had declared to the Agency all locations and equipment that are used for the production of centrifuge rotor tubes or bellows and permitted the Agency to implement continuous monitoring of this equipment (para. 80.2).
4. In addition, the Agency also confirms that, as of 16 January 2016, Iran:

Modern Technologies and Long-Term Presence of the Agency

- a) had permitted the Agency to use on-line enrichment measurement devices and electronic seals which communicate their status within nuclear sites to Agency inspectors (para. 67.1);

⁵ As of 16 January 2016, all fuel assemblies and fuel plates fabricated for use in the Tehran Research Reactor had been irradiated.

- b) had facilitated the automated collection of Agency measurement recordings registered by installed measurement devices (para. 67.1);
- c) had made the necessary arrangements to allow for a long-term Agency presence, including issuing long-term visas, as well as by providing proper working space for the Agency at nuclear sites and, with best efforts, at locations near nuclear sites in Iran (para. 67.2);

Transparency Related to Uranium Ore Concentrate

- a) had permitted the Agency to monitor through measures agreed with Iran, including containment and surveillance, that all uranium ore concentrate (UOC) produced in Iran or obtained from any other source is transferred to the Uranium Conversion Facility in Esfahan (para. 68);
- b) had provided the Agency with all information necessary to enable the Agency to verify the production of UOC and the inventory of UOC produced in Iran or obtained from any other source (para. 69); and

Transparency Related to Enrichment

- a) had permitted the Agency to have regular access to relevant buildings at Natanz, including all of FEP and PFEP, and daily access upon request (para. 71).