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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

#### A. Introduction

1. This report of the Director General to the Board of Governors and, in parallel, to the United Nations Security Council (Security Council), is on the Islamic Republic of Iran's (Iran's) implementation of its nuclear-related commitments under the Joint Comprehensive Plan of Action (JCPOA) and on matters related to verification and monitoring in Iran in light of Security Council resolution 2231 (2015). It also provides information on financial matters, and the Agency's consultations and exchanges of information with the Joint Commission, established by the JCPOA.

# B. Background

2. On 14 July 2015, China, France, Germany, the Russian Federation, the United Kingdom, the United States of America, with the High Representative of the European Union for Foreign Affairs and Security Policy (E3/EU+3) and Iran agreed on the JCPOA. On 20 July 2015, the Security Council adopted resolution 2231 (2015), in which, inter alia, it requested the Director General to "undertake the necessary verification and monitoring of Iran's nuclear-related commitments for the full duration of those commitments under the JCPOA" (GOV/2015/53 and Corr.1, para. 8). In August 2015, the Board

<sup>&</sup>lt;sup>1</sup> On 8 May 2018, the then President of the United States of America, Donald Trump, announced that the "United States will withdraw from the Iran nuclear deal", 'Remarks by President Trump on the Joint Comprehensive Plan of Action', at: https://www.whitehouse.gov/briefings-statements/remarks-president-trump-joint-comprehensive-plan-action/.

- of Governors authorized the Director General to implement the necessary verification and monitoring of Iran's nuclear-related commitments as set out in the JCPOA, and report accordingly, for the full duration of those commitments in light of Security Council resolution 2231 (2015), subject to the availability of funds and consistent with the Agency's standard safeguards practices. The Board of Governors also authorized the Agency to consult and exchange information with the Joint Commission, as set out in GOV/2015/53 and Corr.1.
- 3. In December 2016 and January 2017, the Director General shared with Member States nine documents,<sup>2</sup> developed and endorsed by all participants of the Joint Commission, providing clarifications for the implementation of Iran's nuclear-related measures as set out in the JCPOA for its duration.<sup>3</sup>
- 4. On 8 May 2019, Iran issued a statement including, inter alia, that "...in implementation of its rights set forth in Paragraph 26 and 36 of the JCPOA, the Supreme National Security Council [of] the Islamic Republic of Iran has issued an order to stop some of Iran's measures under the JCPOA from today".
- 5. On 5 January 2020, Iran announced that its nuclear programme would no longer be "subject to any restrictions in the operational sphere" and stated that it would continue to cooperate with the Agency "as in the past".<sup>5</sup>
- 6. In a communication dated 29 January 2021, Iran provided to the Agency an Explanatory Note on the law passed by Iran's Parliament entitled 'Strategic Action Plan to Lift Sanctions and Protect Iranian Nation's Interests'. Iran indicated that, according to this law, Iran would take certain measures related to the JCPOA, including stopping Agency inspections beyond the Safeguards Agreement.
- 7. In a letter dated 11 February 2021, the Director General informed HE Ali Akbar Salehi, Vice President and Head of the Atomic Energy Organization of Iran (AEOI), that stopping or limiting the Agency's verification and monitoring activities at this stage would have a serious impact on the Agency's ability to report on the implementation of Iran's commitments and undermine the critical confidence in the peaceful nature of Iran's nuclear programme. He added that without the measures currently provided by the Additional Protocol and the JCPOA being implemented, the Agency may be unable to continue to provide factual reports on Iran's nuclear programme or to recover the knowledge necessary to resume such a verification role in future. The Director General stated his willingness to visit Tehran to discuss the possibility of a viable framework which would allow the Agency to continue its current verification role and to provide factual and impartial reports, which are essential to all parties, and that such a framework would have to be compatible with the obligations of the Government of Iran under the laws of Iran.
- 8. In a letter dated 15 February 2021, Iran informed the Agency that Iran "will stop the implementation of voluntary transparency measures as envisaged in the JCPOA, as of February 23, 2021", as follows:
  - "Provisions of the Additional Protocol to the CSA;
  - Modified code 3.1 of the subsidiary arrangements to Iran's Safeguards Agreement;
  - Use of modern technologies and long term presence of IAEA;
  - Transparency measures related to uranium ore concentrate (UOC);

<sup>&</sup>lt;sup>2</sup> Reproduced in INFCIRC/907 and INFCIRC/907/Add.1.

<sup>&</sup>lt;sup>3</sup> GOV/2017/10, para. 3.

<sup>&</sup>lt;sup>4</sup> Announced by H.E. Dr Hassan Rouhani, President of Iran, at: http://president.ir/en/109588.

<sup>&</sup>lt;sup>5</sup> http://irangov.ir/detail/332945.

<sup>&</sup>lt;sup>6</sup> INFCIRC/953.

- Transparency measures related to enrichment;
- Access pursuant to provisions of the JCPOA;
- Monitoring and Verification of the implementation of the voluntary measures;
- Transparency measures related to centrifuge component manufacturing."
- 9. In a letter to Iran dated 16 February 2021, the Director General repeated his concern at the impact of stopping or limiting the Agency's verification and monitoring activities and reiterated his offer to travel to Iran in order to find a mutually agreeable solution for the Agency to continue essential verification activities.
- 10. In the same letter, the Director General also reminded Iran that implementation of the modified Code 3.1 is a legal obligation for Iran under the Subsidiary Arrangements to its Safeguards Agreement which cannot be modified unilaterally and that there is no mechanism in the Safeguards Agreement for the suspension of implementation of provisions agreed to in the Subsidiary Arrangements.
- 11. On 21 February 2021, the Director General had discussions in Tehran with H.E. Ali Akbar Salehi and HE Mohammad Javad Zarif, Foreign Minister of Iran, with the objective of finding a mutually agreeable solution for the Agency to continue essential verification activities. Iran and the Agency reached a temporary bilateral technical understanding (see Annex I), compatible with the Iranian law referred to in paragraph 6 above, whereby the Agency would continue with its necessary verification and monitoring activities for up to three months, as set out in a technical annex. Iran and the Agency further agreed to keep the technical understanding under regular review to ensure it continues to achieve its purposes. It was also agreed that Iran would continue to implement fully and without limitation its Safeguards Agreement with the Agency as before.
- 12. During this reporting period, as a consequence of the COVID-19 pandemic, the Agency continued to contract and use chartered aircraft services for the transport of inspectors to and from Iran as needed.<sup>8</sup>
- 13. The estimated cost to the Agency for the implementation of Iran's Additional Protocol and for verifying and monitoring Iran's nuclear-related commitments as set out in the JCPOA is €9.2 million per annum. For 2021, extrabudgetary funding is necessary for €4.0 million of the €9.2 million. As of 19 February 2021, €4.1 million of extrabudgetary funding had been pledged to meet the cost of JCPOA-related activities for 2021 and beyond. Description of Iran's Additional Protocol and for verifying and monitoring Iran's nuclear-related commitments as set out in the JCPOA is €9.2 million. As of 19 February 2021, extrabudgetary funding is necessary for €4.0 million of the €9.2 million. So of 19 February 2021, extrabudgetary funding had been pledged to meet the cost of JCPOA-related activities for 2021 and beyond.

# C. JCPOA Verification and Monitoring Activities

14. Since 16 January 2016 (JCPOA Implementation Day), the Agency has verified and monitored Iran's implementation of its nuclear-related commitments in accordance with the modalities set out in the JCPOA, 11 consistent with the Agency's standard safeguards practices, and in an impartial and objective manner. 12,13 The Agency reports the following for the period since the issuance of the Director

<sup>&</sup>lt;sup>7</sup> GOV/INF/2021/13.

 $<sup>^{8}</sup>$  GOV/2020/26, para. 7.

<sup>&</sup>lt;sup>9</sup> The cost of the provisional application of Iran's Additional Protocol (€3.0 million) and €2.2 million for the inspector costs related to the verification and monitoring of Iran's nuclear-related commitments as set out in the JCPOA are being met from the regular budget (GC(63)/2).

<sup>&</sup>lt;sup>10</sup> This funding meets the cost of JCPOA-related activities until early January 2022.

<sup>&</sup>lt;sup>11</sup> Including the clarifications referred to in para. 3 of this report.

<sup>&</sup>lt;sup>12</sup> GOV/2016/8, para. 6.

<sup>&</sup>lt;sup>13</sup> Note by the Secretariat, 2016/Note 5.

General's quarterly report of November 2020<sup>14</sup> and eleven subsequent updates (see Annex II).

### C.1. Activities Related to Heavy Water and Reprocessing

- 15. Iran has not pursued the construction of the Arak heavy water research reactor (IR-40 Reactor) based on its original design. <sup>15,16,17</sup> Iran has not produced or tested natural uranium pellets, fuel pins or fuel assemblies specifically designed for the support of the IR-40 Reactor as originally designed, and all existing natural uranium pellets and fuel assemblies have remained in storage under continuous Agency monitoring (paras 3 and 10). <sup>18</sup>
- 16. Iran has continued to inform the Agency about the inventory of heavy water in Iran and the production of heavy water at the Heavy Water Production Plant (HWPP)<sup>19</sup> and allowed the Agency to monitor the quantities of Iran's heavy water stocks and the amount of heavy water produced at the HWPP (para. 15). On 15 February 2021, the Agency verified that the HWPP was in operation and that Iran's stock of heavy water had increased to 131.4 metric tonnes (+3.4 metric tonnes since the previous quarterly report) (para. 14).<sup>20</sup>
- 17. Iran has not carried out activities related to reprocessing at the Tehran Research Reactor (TRR) and the Molybdenum, Iodine and Xenon Radioisotope Production (MIX) Facility or at any of the other facilities it has declared to the Agency (paras 18 and 21).<sup>21</sup>

#### C.2. Activities Related to Enrichment and Fuel

18. Iran has continued the enrichment of UF<sub>6</sub> at the Fuel Enrichment Plant (FEP) and the Pilot Fuel Enrichment Plant (PFEP) (see Section C.3 of this report) at Natanz,<sup>22</sup> and at the Fordow Fuel Enrichment Plant (FFEP) at Fordow.<sup>23</sup> As previously reported,<sup>24</sup> on 8 July 2019, the Agency verified that Iran had begun enriching UF<sub>6</sub> above 3.67% U-235 (para. 28), after which Iran enriched uranium up to 5.0%

<sup>14</sup> GOV/2020/51.

<sup>&</sup>lt;sup>15</sup> The calandria was removed from the reactor and rendered inoperable during preparation for Implementation Day and has been retained in Iran (GOV/INF/2016/1, Arak heavy water research reactor, paras 3(ii) and 3(iii)).

<sup>&</sup>lt;sup>16</sup> As indicated previously (GOV/2017/24, footnote 10), Iran has changed the name of the facility to the Khondab Heavy Water Research Reactor.

<sup>&</sup>lt;sup>17</sup> On 16 February 2021, the Agency verified that Iran had completed the installation of the refuelling machine. As indicated previously (GOV/2020/41, footnote 17), Iran has indicated that this machine was constructed based on the original design and is planned to be adapted to the new design of the reactor.

 $<sup>^{18}</sup>$  Unless otherwise indicated, the paragraph references in parentheses throughout Sections C and D of this report correspond to the paragraphs of 'Annex I – Nuclear-related measures' of the JCPOA.

<sup>&</sup>lt;sup>19</sup> In June 2017, Iran informed the Agency that the "maximum annual capacity of the Heavy Water Production Plant (HWPP) is 20 Tons".

<sup>&</sup>lt;sup>20</sup> On 15 February 2021, the Agency confirmed that in this reporting period, 7.0 metric tonnes of heavy water had been produced. In the same period, 5.4 metric tonnes of heavy water had been shipped out of Iran and Iran had used 2.2 metric tonnes of heavy water for research and development (R&D) activities related to the production of deuterated compounds for medical applications. As of the same date, the Agency verified that Iran had purified 4.0 metric tonnes of heavy water from 5.4 metric tonnes of the contaminated heavy water which had resulted from the production of deuterated compounds. The 4.0 metric tonnes is included in Iran's stock of heavy water. All of the activities described in this footnote were conducted under continuous monitoring by the Agency.

<sup>&</sup>lt;sup>21</sup> Including hot cells at TRR and the MIX facility and shielded cells, referred to in the decision of the Joint Commission of 14 January 2016 (INFCIRC/907).

<sup>&</sup>lt;sup>22</sup> GOV/INF/2019/12.

<sup>&</sup>lt;sup>23</sup> Under the JCPOA, "[f]or 15 years the Natanz enrichment site will be the sole location for all of Iran's uranium enrichment related activities including safeguarded R&D" (para. 72).

<sup>&</sup>lt;sup>24</sup> GOV/INF/2019/9.

- U-235. As previously reported, since 4 January 2021, Iran has also been enriching UF<sub>6</sub> up to 20% U-235. Iran has continued to conduct certain enrichment activities that are not in line with its long-term enrichment and R&D enrichment plan, as provided to the Agency on 16 January 2016 (para. 52). <sup>26</sup>
- 19. As previously reported,<sup>27</sup> Iran has informed the Agency that the operator of PFEP intended to transfer three production cascades of IR-4, IR-2m and IR-6 centrifuges from PFEP to FEP. In October 2020, the Agency verified that Iran had installed the cascade of IR-2m centrifuges,<sup>28</sup> and, in November 2020, verified that Iran began feeding natural UF<sub>6</sub> into this cascade.<sup>29</sup> On 21 February 2021, the Agency verified that Iran had installed the IR-4 cascade but had not yet begun feeding natural UF<sub>6</sub> into this cascade. On the same date, the Agency verified that Iran was still installing the cascade of IR-6 centrifuges.
- 20. As previously reported, in December 2020, Iran informed the Agency that the operator of FEP intended to start the installation of three additional cascades of IR-2m centrifuges at FEP.<sup>30</sup> Since that time, Iran has completed the installation of two of these three cascades, each containing 174 IR-2m centrifuges. On 30 January 2021, the Agency verified that Iran began feeding one of these cascades with natural UF<sub>6</sub>.<sup>31</sup> On 21 February 2021, the Agency verified that Iran had yet to begin feeding the other cascade with UF<sub>6</sub>, and that installation of the third cascade was ongoing. As previously reported,<sup>32</sup> on 15 February 2021, the Agency received an updated DIQ for FEP from Iran in which Iran indicated that it plans to install two additional cascades of 174 IR-2m centrifuges at FEP to enrich UF<sub>6</sub> up to 5% U-235. This will bring the total number of cascades of IR-2m centrifuges either planned, being installed, or operating in FEP to six.
- 21. As of 21 February 2021, Iran was using 5060 IR-1 centrifuges installed in 30 cascades,<sup>33</sup> and 348 IR-2m centrifuges installed in two cascades, to enrich UF<sub>6</sub> at FEP (para. 27). During this reporting period, Iran has withdrawn 97 IR-1 centrifuges from those held in storage (see paragraph 37 below) for the replacement of damaged or failed IR-1 centrifuges installed at FEP (para. 29.1).
- 22. Since the previous quarterly report, Iran has continued to transfer its enrichment R&D activities to a segregated area of Building A1000, to create a new area of PFEP (paras 27 and 40).<sup>34</sup> On 7 February 2021, the Agency verified that Iran has completed installation of sub-headers for 18 cascades for R&D activities in this new area of PFEP.
- 23. At PFEP, as previously reported,<sup>35</sup> Iran has modified the header connections so that the product and the tails can be collected separately from the cascades in five R&D lines (nos. 2, 3, 4, 5 and 6) (paras 32 and 42), all of which have been used for the enrichment of UF<sub>6</sub> (see Section C.3 of this report). Since the previous report, Iran has completed the installation of headers and sub-headers and started installation of IR-6s and IR-5 centrifuges in R&D line 1.

<sup>&</sup>lt;sup>25</sup> GOV/INF/2021/2, para. 5

<sup>&</sup>lt;sup>26</sup> GOV/INF/2019/10, GOV/INF/2019/12, GOV/INF/2019/16, GOV/INF/2020/10 and Section C.3 of this report.

<sup>&</sup>lt;sup>27</sup> GOV/INF/2020/10.

<sup>&</sup>lt;sup>28</sup> GOV/2020/51, para.13.

<sup>&</sup>lt;sup>29</sup> GOV/INF/2020/16, para. 2.

<sup>&</sup>lt;sup>30</sup> GOV/INF/2020/17, para. 2.

<sup>&</sup>lt;sup>31</sup> GOV/INF/2021/8, para. 3.

<sup>&</sup>lt;sup>32</sup> GOV/INF/2021/15, para. 2.

<sup>&</sup>lt;sup>33</sup> The 5060 IR-1 centrifuges installed in 30 cascades remained in the configurations in the operating units at the time the JCPOA was agreed.

<sup>&</sup>lt;sup>34</sup> GOV/INF/2020/15.

<sup>35</sup> GOV/INF/2019/10, para. 4.

- 24. At FFEP, as previously reported, Iran has been conducting uranium enrichment (para. 45) in one wing (Unit 2) of the facility since November 2019.<sup>36</sup> Since January 2020, Iran has been using a total of six cascades, containing 1044 IR-1 centrifuges, to enrich UF<sub>6</sub> (para. 46). On 4 January 2021, Agency inspectors confirmed that the six cascades had been reconfigured as three sets of two interconnected cascades and that Iran began feeding UF<sub>6</sub> enriched up to 5% U-235 into the process to start the production of UF<sub>6</sub> enriched up to 20% U-235.<sup>37</sup> On 21 February 2021, the Agency verified that the production of UF<sub>6</sub> enriched up to 20% U-235 remained ongoing.
- 25. On 28 January 2021, Iran provided the Agency with an updated DIQ for FFEP in which, inter alia, Iran informed the Agency it planned to use eight cascades to enrich uranium in Unit 2 at FFEP.<sup>38</sup> On 1 February 2021, Iran confirmed to the Agency that two cascades of IR-6 centrifuges would be installed in Unit 2 at FFEP and that these two cascades would be fed with natural UF<sub>6</sub> to produce UF<sub>6</sub> enriched up to 5% U-235 to directly feed the three sets of two interconnected cascades of IR-1 centrifuges enriching up to 20% U-235.
- 26. On 23 January 2021, the Agency verified that the "Initial Research Setup for Separation of Stable isotopes", including the IR-1 centrifuges installed in the 16 IR-1 centrifuge positions<sup>39</sup> in the remaining space of Unit 2, had been dismantled to create space for the installation of the two cascades of IR-6 centrifuges referred to in the previous paragraph. On 21 February 2021, the Agency verified that 1044 IR-1 centrifuges were installed in six cascades in Unit 2 of FFEP (para. 46), that installation of subheaders for the IR-6 cascades had been completed and that one IR-1 centrifuge was installed in a single position.<sup>40</sup>
- 27. All centrifuges and associated infrastructure in storage have remained under continuous Agency monitoring (paras 29, 47, 48 and 70). The Agency has continued to have regular access to relevant buildings at Natanz, including all of FEP and PFEP, and performed daily access upon Agency request (para. 71). The Agency has also continued to have regular access to FFEP, including daily access upon Agency request (para. 51).
- 28. As previously reported, on 16 December 2020, Iran provided the Agency with an updated DIQ for the fuel plate fabrication plant (FPFP) at Esfahan, in which Iran indicated that it would start R&D activities on the production of uranium metal using natural uranium, before moving to produce uranium metal enriched to up to 20% U-235 for fuel for the TRR (paras 24 and 26).<sup>41</sup> Iran informed the Agency that uranium metal would be produced at the second stage of a three-stage process. On 10 January 2021, Iran informed the Agency that installation of the equipment at FPFP needed for the first stage of the process was expected to be completed in 4-5 months and that as the other two stages of the process were still in the design phase no timeline was yet available. As also previously reported, on 2 February 2021, the Agency verified the receipt of 265 g of natural UF<sub>4</sub> at FPFP from Iran's Uranium Conversion Facility (UCF) at Esfahan.<sup>42</sup> On 8 February 2021, the Agency verified 3.6 g of uranium metal, which had been produced from 13 g of the aforementioned natural UF<sub>4</sub> in a laboratory experiment conducted at FPFP on 6 February 2021. On 21 February 2021, the Agency verified the transfer of 1.5 kg of natural uranium in the form of UF<sub>4</sub> from UCF to FPFP for additional R&D experiments on uranium metal production.

<sup>&</sup>lt;sup>36</sup> GOV/2019/55, para. 15.

<sup>&</sup>lt;sup>37</sup> GOV/INF/2021/2, para.5.

<sup>&</sup>lt;sup>38</sup> GOV/INF/2021/9.

<sup>&</sup>lt;sup>39</sup> GOV/2017/48, footnote 20.

<sup>&</sup>lt;sup>40</sup> On 29 January 2018, Iran provided the Agency with updated design information for FFEP, which included a temporary setup for a single IR-1 centrifuge position for "separation of stable isotopes" in Unit 2.

<sup>&</sup>lt;sup>41</sup> GOV/INF/2021/3, para. 5.

<sup>&</sup>lt;sup>42</sup> GOV/INF/2021/11, para. 4.

- 29. On 16 February 2021, the Agency verified at FPFP that Iran had started installing equipment for the first stage of the process, involving the production of UF<sub>4</sub> from UF<sub>6</sub>.
- 30. On 13 February 2021 the Agency verified that all irradiated TRR fuel elements in Iran have a measured dose rate of no less than 1 rem/hour (at one metre in air).
- 31. Iran has not operated any of its declared facilities for the purpose of re-converting fuel plates or scrap into UF<sub>6</sub>, nor has it informed the Agency that it has built any new facilities for such a purpose (para. 58).

## C.3. Centrifuge Research and Development, Manufacturing and Inventory

- 32. As previously reported,<sup>43</sup> in November 2019, Iran further updated the DIQ for PFEP, in which it included the list of all centrifuge types at PFEP.<sup>44</sup>
- 33. As previously reported,<sup>45</sup> Iran has informed the Agency that R&D line 1 will be used for testing IR-5 and IR-6s centrifuges in a full cascade of up to 172 centrifuges or two intermediate cascades of 84 centrifuges each (para. 41). As stated above, on 13 February 2021, the Agency verified that Iran had completed installation of the headers and sub-headers for two intermediate cascades of IR-5 and IR-6s centrifuges in R&D line 1 and started installation of IR-5 and IR-6s centrifuges.
- 34. On 17 February 2021, the Agency verified that Iran was continuing to accumulate uranium enriched up to 2% U-235 from R&D lines 2 and 3 (paras 32–42) through feeding natural UF<sub>6</sub> into cascades of up to: eleven IR-4 centrifuges; five IR-5 centrifuges; five IR-6 centrifuges, five IR-6 centrifuges and another cascade of 19 IR-6 centrifuges; 9 IR-6s centrifuges; and 10 IR-s centrifuges. The following single centrifuges were being tested with natural UF<sub>6</sub> but not accumulating enriched uranium: one IR-1 centrifuge; four IR-2m centrifuges; one IR-4 centrifuge; three IR-5 centrifuges; two IR-6 centrifuges; one IR-8 centrifuge; one IR-8B centrifuge; one IR-s centrifuge; and one IR-9 centrifuge. As previously reported, in December 2020, the Agency verified that Iran had begun installing IR-1 centrifuges in R&D line 5 and, in January 2021, the Agency verified that Iran was using an intermediate cascade of nine IR-1 centrifuges in R&D line 5 to produce uranium enriched to below 2% U-235. Iran is also testing 18 single IR-1 centrifuges in R&D line 5, but not accumulating enriched uranium.
- 35. On 17 February 2021, the Agency verified that Iran was continuing to accumulate enriched uranium from R&D lines 4 and 6 (paras 32–42) through feeding natural UF<sub>6</sub> into a cascade of 119 IR-4 centrifuges and a cascade of 133 IR-6 centrifuges, respectively.<sup>48</sup>
- 36. On 17 February 2021, the Agency verified that Iran had conducted mechanical testing of three IR-4 centrifuges simultaneously for 90 days at the Tehran Research Centre in addition to two IR-4 centrifuges for six days at Natanz, and of three IR-6 centrifuges simultaneously for nine days at the Tehran Research Centre and Natanz (para. 40). As of 24 January 2021, Iran had started using a new location (at a workshop at Natanz), beyond those specified in the JCPOA, for mechanical testing of centrifuges.

<sup>&</sup>lt;sup>43</sup> GOV/2019/55, para. 21.

 $<sup>^{44}\,</sup>IR-1,\,IR-2m,\,IR-3,\,IR-4,\,IR-5,\,IR-6,\,IR-6m,\,IR-6s,\,IR-6sm,\,IR-7,\,IR-8,\,IR-8s,\,IR-8s,\,IR-8b,\,IR-s\,\,and\,\,IR-9.$ 

<sup>&</sup>lt;sup>45</sup> GOV/2020/26, para. 23.

<sup>&</sup>lt;sup>46</sup> GOV/INF/2021/10.

<sup>&</sup>lt;sup>47</sup> R&D line 5 at PFEP is the location where previously a cascade of IR-2m centrifuges had been installed, before it was transferred to FEP (see GOV/2020/51, para. 13).

<sup>&</sup>lt;sup>48</sup> GOV/INF/2019/12.

- 37. Iran has provided declarations to the Agency of its production and inventory of centrifuge rotor tubes and bellows and permitted the Agency to verify the items in the inventory (para. 80.1). The Agency has conducted continuous monitoring, including through the use of containment and surveillance measures, and verified that the declared equipment has been used for the production of rotor tubes and bellows to manufacture centrifuges not only for the activities specified in the JCPOA but also for activities beyond those specified in the JCPOA, such as the installation of the cascades described in paragraphs 33-35 above (para. 80.2). Iran has not produced any IR-1 centrifuges to replace those that have been damaged or failed (para. 62).
- 38. All declared rotor tubes, bellows and rotor assemblies have been under continuous monitoring by the Agency, including those rotor tubes and bellows manufactured since Implementation Day (para. 70). On 15 February 2021, the Agency verified that Iran was continuing to manufacture centrifuge rotor tubes using carbon fibre that was not subject to continuous Agency containment and surveillance measures. <sup>49,50</sup> The rotor tubes and bellows manufacturing process remains under continuous monitoring by the Agency. On 23 January 2021, the Agency verified that Iran had started manufacturing metal bellows for IR-6 centrifuges for testing, which Iran plans to reinforce with carbon fibre.

### C.4. Enriched Uranium Stockpile

- 39. As previously reported,<sup>51</sup> on 1 July 2019, the Agency verified that Iran's total enriched uranium stockpile had exceeded 300 kg of UF<sub>6</sub> enriched up to 3.67% U-235 (or the equivalent in different chemical forms) (para. 56). The quantity of 300 kg of UF<sub>6</sub> corresponds to 202.8 kg of uranium.<sup>52</sup>
- 40. As of 16 February 2021, the Agency verified that, based on the JCPOA and decisions of the Joint Commission,<sup>53</sup> Iran's total enriched uranium stockpile, comprising enriched uranium produced at FEP, PFEP and FFEP<sup>54</sup> was 2967.8 kg (+524.9 kg since the previous quarterly report). The stockpile comprised 2933.1 kg of uranium in the form of UF<sub>6</sub>; 13.3 kg of uranium in the form of uranium oxides and their intermediate products; 10.5 kg of uranium in fuel assemblies and rods; and 10.9 kg of uranium in liquid and solid scrap.
- 41. The total enriched uranium stockpile in the form of UF<sub>6</sub> comprises 1025.5kg of uranium enriched up to 2% U-235, 1890.0 kg of uranium enriched between 2% and 5% U-235, and 17.6 kg of uranium enriched up to 20% U-235.

## D. Transparency Measures

42. Iran has continued to permit the Agency to use on-line enrichment monitors and electronic seals which communicate their status within nuclear sites to Agency inspectors, and to facilitate the automated collection of Agency measurement recordings registered by installed measurement devices (para. 67.1). Iran has issued long-term visas to Agency inspectors designated for Iran as requested by the Agency,

<sup>&</sup>lt;sup>49</sup> GOV/INF/2019/12, para. 6.

<sup>&</sup>lt;sup>50</sup> Decision of the Joint Commission of 14 January 2016 (INFCIRC/907).

<sup>&</sup>lt;sup>51</sup> GOV/INF/2019/8.

<sup>&</sup>lt;sup>52</sup> Considering the standard atomic weight of uranium and fluorine.

<sup>&</sup>lt;sup>53</sup> Decisions of the Joint Commission of 6 January 2016 and 18 December 2016 (INFCIRC/907), and 10 January 2017 (INFCIRC/907/Add.1).

<sup>&</sup>lt;sup>54</sup> Under the JCPOA, "[f]or 15 years the Natanz enrichment site will be the sole location for all of Iran's uranium enrichment related activities including safeguarded R&D" (para. 72).

provided proper working space for the Agency at nuclear sites and facilitated the use of working space at locations near nuclear sites in Iran (para. 67.2).

43. Iran has continued to permit the Agency to monitor – through measures agreed with Iran, including containment and surveillance measures – that all uranium ore concentrate (UOC) produced in Iran or obtained from any other source is transferred to UCF (para. 68). Iran also 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).

## E. Other Relevant Information

- 44. During this reporting period, Iran continued to provisionally apply the Additional Protocol to its Safeguards Agreement in accordance with Article 17(b) of the Additional Protocol, pending its entry into force. The Agency continued to evaluate Iran's declarations under the Additional Protocol, and conducted complementary accesses under the Additional Protocol to all the sites and locations in Iran which it needed to visit. As referred to in paragraph 8 above, on 15 February 2021, Iran indicated that, as of 23 February 2021, it would no longer apply the provisions of its Additional Protocol. The matters previously addressed in this section relating to Iran's implementation of its Safeguards Agreement and Additional Protocol<sup>55</sup> are now addressed in GOV/2021/15.
- 45. During this reporting period, the Agency's verification and monitoring of Iran's other JCPOA nuclear-related commitments continued, including those set out in Sections D, E, S and T of Annex I of the JCPOA.
- 46. During this reporting period, the Agency has not attended a meeting of the Procurement Working Group of the Joint Commission (JCPOA, Annex IV Joint Commission, para. 6.4.6).

# F. Summary

- 47. Since Implementation Day, the Agency has been verifying and monitoring the implementation by Iran of its nuclear-related commitments under the JCPOA.
- 48. The temporary bilateral technical understanding between Iran and the Agency is to enable the Agency to continue with its necessary verification and monitoring activities related to the JCPOA for up to three months. It is also to enable the Agency to resume its full verification and monitoring of Iran's nuclear-related commitments under the JCPOA if and when Iran resumes its implementation of those commitments.
- 49. The Director General will continue to report as appropriate.

<sup>&</sup>lt;sup>55</sup> GOV/2020/51, paras 33-35.

#### ANNEX I

# Joint statement by the Vice-President of the Islamic Republic of Iran and Head of the AEOI and the Director General of the IAEA

#### 21 February 2021

The Atomic Energy Organization of Iran (AEOI) and the International Atomic Energy Agency (IAEA) recalled and reaffirmed the spirit of cooperation and enhanced mutual trust that led to the Joint Statement in Tehran on 26 August 2020, and the importance of continuing that cooperation and trust.

The AEOI informed the IAEA that in order to comply with the act passed by the Parliament of the Islamic Republic of Iran called "Strategic Action to Cease Actions and Protect the interest of Iranian Nation" (The "Law") Iran will stop the implementation of the voluntary measures as envisaged in the JCPOA, as of 23 February 2021.

In view of the above and in order for the Agency to continue its verification and monitoring activities, the AEOI and the IAEA agreed:

- 1. That Iran continues to implement fully and without limitation its Comprehensive Safeguards Agreement with the IAEA as before.
- 2. To a temporary bilateral technical understanding, compatible with the Law, whereby the IAEA will continue with its necessary verification and monitoring activities for up to 3 months (as per technical annex).
- 3. To keep the technical understanding under regular review to ensure it continues to achieve its purposes.

#### ANNEX II

GOV/INF	Date	Content
2020/16	2020-11-17	Iran began feeding UF <sub>6</sub> into the recently installed cascade of 174 IR-2m centrifuges at FEP
2020/17	2020-12-04	Iran informs the Agency that it intends to install an additional three cascades of IR-2m centrifuges at FEP
2021/1	2021-01-01	Iran informs the Agency that it intends to produce up to 20% enriched LEU at Fordow
2021/2	2021-01-04	Iran begins feeding UF <sub>6</sub> to produce up to 20% enriched LEU at Fordow
2021/3	2021-01-13	Iran informs the Agency that it intends to conduct R&D on new fuel for the TRR, including production of up to 20% enriched uranium metal
2021/8	2021-02-01	Iran begins feeding UF <sub>6</sub> into the second recently installed cascade of 174 IR-2m centrifuges at FEP
2021/9	2021-02-02	Iran informs the Agency that it will install two cascades of IR-6 centrifuges at FFEP
2021/10	2021-02-03	Iran informs the Agency that it is conducting R&D with UF <sub>6</sub> on IR-1 centrifuges at PFEP
2021/11	2021-02-10	Iran conducts a lab scale test of the process it will use in the R&D on new fuel for the TRR, producing 3.6g of uranium metal
2021/13	2021-02-16	Iran informs the Agency that it will stop the implementation of voluntary transparency measures as envisaged in the JCPOA, including the Additional Protocol, as of 23 February 2021
2021/15	2021-02-17	Iran informs the Agency that it intends to install an additional two cascades of IR-2m centrifuges at FEP