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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. 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) on activities related to research and development (R&D) on uranium metal production. It provides an update on developments since the Director General's previous reports.¹

Activities related to R&D on Uranium Metal Production

2. On 12 January 2019, Iran announced its intention to design an improved type of fuel for the Tehran Research Reactor (TRR).² Information on R&D activities related to the production of such fuel was included in Iran's update of its general plans relevant to the development of the nuclear fuel cycle, including planned nuclear fuel cycle-related R&D activities, provided to the Agency under the Additional Protocol, which was received by the Agency on 14 May 2019. According to this information, Iran planned a "feasibility study on design and construction of new type up to 20% enriched fuel for Tehran Research Reactor".

3. In line with standard safeguards practice, in a letter dated 13 October 2020, the Agency requested Iran, inter alia, to provide clarifications, under Article 2.c. of the Additional Protocol, on the status of these planned R&D activities, including whether they had advanced beyond a feasibility study and where the next stage of the related R&D activities were being, or were to be, carried out.

¹ GOV/2020/51, GOV/INF/2020/16, GOV/INF/2020/17, GOV/INF/2021/1 and GOV/INF/2021/2.

² 'Nuclear Chief says Iran exploring new uranium enrichment', Nasser Karimi, Associated Press, 13 January 2019.

4. In a letter dated 2 November 2020, Iran informed the Agency that “in line with continuing the required R&D conducting on the new type of fuel for TRR”, two rooms in two buildings at the Fuel Plate Fabrication Plant (FPFP) in Esfahan were being modified. Iran indicated that it would provide the related design information questionnaire (DIQ) “as soon as the detailed information is available”.
5. In a letter dated 16 December 2020, the Agency requested Iran to provide further clarifications on this new type of fuel, including its nuclear material content and enrichment level, pending submission of the relevant updated DIQ. On the same date, Iran provided the Agency with an updated DIQ for FPFP 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. The DIQ set out a three-stage process to be conducted at FPFP involving the conversion of: UF_6 to UF_4 ; UF_4 to uranium metal; and uranium metal to uranium silicide (U_3Si_2).
6. In a letter dated 6 January 2021, the Agency requested Iran, in respect of its relevant nuclear-related commitments under the JCPOA,³ to provide the Agency as soon as possible with the timeline for: the installation of relevant equipment at FPFP; R&D activities on uranium metal; and the production of enriched uranium metal and U_3Si_2 .
7. On 10 January 2021, the Agency conducted an inspection at FPFP during which Iran informed the Agency that, for the first stage of the process, i.e. the conversion of UF_6 to UF_4 , some of the equipment needed had already been manufactured. This equipment was shown to the Agency. The Agency was informed that installation of the equipment needed for the first stage of the process was expected to be completed in 4-5 months. Iran indicated that as the other two stages of the process were still in the design phase no timeline was yet available.
8. In a letter dated 13 January 2021, Iran informed the Agency that pursuant to steps taken by Iran to reduce its commitments under the JCPOA “there is no limitation on R&D activities” and that the “modification and installation of the relevant equipment for the mentioned R&D activities have been already started”.

³ JCPOA, ‘Annex I – Nuclear-related measures’, para. 24 states “[f]or 15 years, Iran will not engage in producing or acquiring plutonium or uranium metals or their alloys, or conducting R&D on plutonium or uranium (or their alloys) metallurgy, or casting, forming, or machining plutonium or uranium metal”; and para. 26 states “[i]f Iran seeks to initiate R&D on uranium metal based TRR fuel in small agreed quantities after 10 years and before 15 years, Iran will present its plan to, and seek approval by, the Joint Commission”.