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Application of Safeguards in the Democratic People's Republic of Korea

Report by the Director General

A. Introduction

1. The Director General's report on the application of safeguards in the Democratic People's Republic of Korea (DPRK), issued on 7 September 2022, was submitted to the Board of Governors and to the 66th regular session of the General Conference in September 2022 (GOV/2022/40-GC(66)/16).
2. Having considered the report of September 2022,¹ the General Conference adopted resolution GC(66)/RES/11 on 30 September 2022 and decided to remain seized of the matter and to include the item on the agenda for its 67th (2023) regular session.
3. This report of the Director General to the Board of Governors and the General Conference covers developments since the report of September 2022.

B. Background

4. The Agency has not been able to verify the correctness and completeness of the DPRK's declarations under the Agreement between the DPRK and the Agency for the Application of Safeguards in Connection with the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) (hereinafter referred

¹ That extensive report provided a detailed overview of developments in the DPRK's nuclear programme for the period since the previous extensive report to the Board of Governors and the General Conference of 2 September 2011 (GOV/2011/53-GC(55)/24), as well as developments since the report of 27 August 2021 (GOV/2021/40-GC(65)/22).

to as the “NPT Safeguards Agreement”).² Following ad hoc inspections to verify the information contained in the initial report provided by the DPRK, on 1 April 1993 the Board of Governors found, pursuant to Article 19 of the NPT Safeguards Agreement, that “the Agency is not able to verify that there has been no diversion of nuclear material required to be safeguarded under the terms of the Agreement to nuclear weapons or other nuclear explosive devices”, and decided to report the DPRK’s non-compliance and the Agency’s inability to verify such non-diversion to all Member States of the Agency, to the UN Security Council and to the UN General Assembly.³ Since 1994, the Agency has not been able to conduct all necessary safeguards activities provided for in the NPT Safeguards Agreement.

5. From November 1994 to December 2002, the Agency maintained a continuous inspector presence at the Yongbyon site to monitor a freeze at five facilities under the Agreed Framework between the United States of America (USA) and the DPRK. From July 2007 to April 2009, the Agency maintained a continuous inspector presence at Yongbyon to monitor and verify the status of shut down or sealed facilities under the Initial Actions for the implementation of the Joint Statement of 19 September 2005, agreed by the States parties in the Six Party Talks.⁴ From the end of 2002 until July 2007, the Agency was not able, and since April 2009 has not been able, to implement any safeguards measures in the DPRK.

6. Following the DPRK’s nuclear tests in 2006, 2009, 2013, 2016 and 2017, the UN Security Council adopted resolutions 1718 (2006), 1874 (2009), 2094 (2013), 2270 (2016), 2321 (2016) and 2375 (2017). In these resolutions, the UN Security Council, inter alia: demanded that the DPRK return at an early date to the NPT and IAEA safeguards; decided that the DPRK shall abandon all nuclear weapons and its existing nuclear programme in a complete, verifiable and irreversible manner and immediately cease all related activities and act strictly in accordance with the obligations applicable to parties under the NPT and the terms and conditions of its NPT Safeguards Agreement; and decided that the DPRK shall provide the Agency with transparency measures extending beyond these requirements, including such access to individuals, documentation, equipment and facilities as may be required and deemed necessary by the Agency. Contrary to the requirements of those resolutions, the DPRK has not abandoned its existing nuclear programme in a complete, verifiable and irreversible manner or ceased all related activities.

7. As the Agency remains unable to carry out verification activities in the DPRK, and as further nuclear activities continue to take place in the country, the Agency’s knowledge of the DPRK’s nuclear programme is limited. Nevertheless, it is important for the Agency to remain cognizant of developments in that programme to the fullest extent possible, especially in light of the General Conference’s support of the Secretariat’s continued enhanced readiness to play its essential role in verifying the DPRK’s nuclear programme, including the capability to re-establish the implementation of safeguards related activities in the DPRK.⁵

² The DPRK concluded an agreement with the Agency, based on INFCIRC/66/Rev.2, for the application of safeguards in respect of a research reactor (INFCIRC/252) in July 1977. Under this item-specific safeguards agreement, safeguards were applied by the Agency to two nuclear research facilities in Yongbyon: the IRT Research Reactor and a critical assembly. Although the DPRK acceded to the NPT in December 1985, its NPT Safeguards Agreement with the Agency, based on INFCIRC/153 (Corrected), only entered into force in April 1992 (INFCIRC/403). As provided for in Article 23 of the NPT Safeguards Agreement, the application of safeguards under the earlier safeguards agreement (INFCIRC/252) is suspended while the NPT Safeguards Agreement is in force.

³ GOV/2645 (1993).

⁴ The States parties in the Six Party Talks process were the People’s Republic of China, the DPRK, Japan, the Republic of Korea, the Russian Federation and the USA.

⁵ GC(66)/RES/11, paras 11-12.

C. Developments

8. On 8 September 2022, the General Secretary of the Workers' Party of Korea (WPK) and President of the State Affairs Commission, Kim Jong Un, said the DPRK "can never give up the nuclear weapons" and "there will never be such a thing as our abandonment of the nuclear weapons or denuclearization first, nor will there be any negotiations to this end or bargaining chip in these processes".⁶ On the same day, the Supreme People's Assembly (SPA) of the DPRK reportedly promulgated an updated law on nuclear policy, specifying conditions for the use of nuclear weapons.⁷

9. In December 2022, General Secretary Kim said that recent developments "highlights the importance and necessity of a mass-producing of tactical nuclear weapons and calls for an exponential increase of the country's nuclear arsenal".⁸

10. After reportedly guiding a "combined tactical drill for nuclear counterattack" in March 2023, General Secretary Kim said "the present situation... urgently requires the DPRK to bolster up its nuclear war deterrence exponentially".⁹

11. Later in March 2023, the DPRK Nuclear Weapons Institute "reported to Kim Jong Un on recent years' work and production for bolstering up the nuclear force of the DPRK both in quality and quantity in accordance with the orientation of developing nuclear weapons". General Secretary Kim said that "the institute and the field of atomic energy should expand on a far-sighted way the production of weapon-grade nuclear materials for thoroughly implementing the plan of the Party Central Committee on increasing nuclear arsenals exponentially and put spurs to continuing to produce powerful nuclear weapons".¹⁰

12. In June 2023, the WPK Political Bureau, at a meeting attended by General Secretary Kim, called "on the national defence field to consistently adhere to the orientation of developing nuclear weapons and the line of bolstering up the nuclear force set forth by the Party Central Committee" and to increase "the production of powerful nuclear weapons".¹¹

D. Nuclear Programme Update

D.1. Mining and Milling

13. During the reporting period, there were indications of ongoing mining, milling and concentration activities at the Pyongsan Uranium Mine and the Pyongsan Uranium Concentrate Plant, consistent with activities observed by the Agency during previous years.

⁶ 'Respected Comrade Kim Jong Un Makes Policy Speech at Seventh Session of the 14th SPA of DPRK', KCNA, 9 September 2022.

⁷ 'Law on DPRK's Policy on Nuclear Forces Promulgated', KCNA, 9 September 2022.

⁸ 'Report on 6th Enlarged Plenary Meeting of 8th WPK Central Committee', KCNA, 1 January 2023.

⁹ 'Nuclear Counterattack Simulation Drill Conducted in DPRK', KCNA, 20 March 2023.

¹⁰ 'Respected Comrade Kim Jong Un Guides Work for Mounting Nuclear Warheads on Ballistic Missiles', KCNA, 28 March 2023.

¹¹ 'Report on 8th Enlarged Plenary Meeting of 8th WPK Central Committee', KCNA, 19 June 2023.

D.2. Conversion and Fuel Fabrication

14. During December 2022, steam emissions were observed by the Agency from the UO₂ Production Process Building, indicating that conversion activities were taking place therein. However, since April 2023, refurbishment or repurposing of the Building has been underway, including the removal of process equipment.

15. As previously reported,¹² work commenced in July 2022 on a major renovation of the derelict UF₄ Production Process Building and continued throughout the reporting period. There are indications that some of the process equipment removed from the UO₂ Production Process Building has been transferred to the UF₄ Production Process Building.

16. As previously reported,¹³ between 2009 and 2019, the Agency observed some buildings being renovated and new buildings being constructed in the south-eastern corner of the Nuclear Fuel Rod Fabrication Plant. While the Agency is unable to determine the purpose of these buildings, based on their location and configuration, they may be related to conversion and fuel fabrication. During the reporting period, there were indications of ongoing activities in these buildings.

17. In addition, since March 2023, the Agency has observed the construction of a group of four new buildings in the southern area of the Nuclear Fuel Rod Fabrication Plant, the purpose of which the Agency has not determined.

D.3. Enrichment

D.3.1. Reported Centrifuge Enrichment Facility at Yongbyon

18. During the reporting period, the Agency observed indications that the reported centrifuge enrichment facility at Yongbyon continued to operate.¹⁴ As previously reported,¹⁵ between September 2021 and May 2022, a new annex to this facility was constructed, thereby increasing the overall floor area by approximately one third. There were indications during the reporting period that activities related to uranium enrichment had commenced within the new annex.

D.3.2. Kangson Complex

19. As previously reported,¹⁶ a complex of buildings within a security perimeter at Kangson, in the vicinity of Pyongyang, shares infrastructure characteristics with the reported centrifuge enrichment facility at Yongbyon. During the reporting period, there were indications of ongoing activities at this complex.

D.4. Reactors

D.4.1. Graphite Reactors

20. During the reporting period, indications of the operation of the 5MW(e) Experimental Nuclear Power Plant, including the discharge of cooling water, continued to be observed.¹⁷ However, there were

¹² GOV/2022/40/-GC(66)/16, para. 26.

¹³ GOV/2022/40/-GC(66)/16, para. 32.

¹⁴ IAEA Director General's Introductory Statements to the Board of Governors: 16 November 2022 and 6 March 2023.

¹⁵ GOV/2022/40/-GC(66)/16, para. 38.

¹⁶ GOV/2022/40/-GC(66)/16, para. 39.

¹⁷ IAEA Director General's Introductory Statements to the Board of Governors: 16 November 2022 and 6 March 2023.

short periods in late-September 2022, mid-November 2022, late-March 2023 and mid-April 2023, when there was no cooling water discharge. Intermittent shutdowns are consistent with observations of past reactor operating cycles.

21. Construction of the 50MW(e) Nuclear Power Plant at Yongbyon and the 200MW(e) Nuclear Power Plant at Taechon was halted during the 1994 Agreed Framework and has since not been restarted.¹⁸

D.4.2. Light Water Reactor

22. An increase in the level of activity around the Light Water Reactor (LWR) was observed throughout the reporting period. A new channel for the southern cooling water outlet was excavated in October 2022 and indications of possible tests of the LWR's cooling water systems were observed more frequently, and for longer duration, than in previous reporting periods. The Agency did not observe indications of the operation of the LWR and, based on the information currently available, it is not possible for the Agency to estimate when the reactor could become operational.

23. During the reporting period, three new buildings were constructed in the immediate vicinity of the LWR.

24. In addition, as previously reported,¹⁹ construction started on a new group of buildings south of the LWR compound in August 2021, possibly to support the fabrication or maintenance of reactor components. The construction of this group of buildings was externally complete by December 2022.

25. Further south of the LWR compound, construction of another industrial-type building commenced in March 2023. The purpose of this building has not been determined by the Agency.

D.4.3. IRT Research Reactor

26. There were indications of intermittent operation of the IRT reactor.

D.5. Reprocessing

27. The steam plant that serves the Radiochemical Laboratory was observed by the Agency to have operated from late-April to late-September 2022, although only intermittently.²⁰ From late-June 2023 to the end of the reporting period the steam plant was again observed to be operating intermittently. The observed operation of the steam plant is consistent with waste treatment or maintenance activity at the Radiochemical Laboratory.

28. In March 2023, the Agency observed that the soil and vegetation covering a radioactive waste storage location situated north of the Radiochemical Laboratory had been removed, exposing the liquid waste storage tanks and solid waste storage compartments. Near a second waste storage location, a building located east of the Radiochemical Laboratory, small-scale excavation was observed in late-June 2023.²¹

¹⁸ GOV/2011/53-GC(55)/24, para. 39.

¹⁹ GOV/2022/40/-GC(66)/16, para. 47.

²⁰ IAEA Director General's Introductory Statements to the Board of Governors: 16 November 2022 and 6 March 2023.

²¹ In 1993, in accordance with Article 73(b) and 77 of the NPT Safeguards Agreement, the Agency requested additional information on, and access to, these two locations. The requested access and additional information was not provided by the DPRK. GOV/INF/684, Annex 7; INFCIRC/419 (8 April 1993), paras 8-17.

D.6. Weaponization and Nuclear Testing

29. As previously reported,²² in early-March 2022, work commenced near Adit 3 at the nuclear test site located near the settlement of Punggye-ri, to reopen the test tunnel after its partial demolition in May 2018. By May 2022, excavation work at Adit 3 was possibly completed. Further activities were observed at Adit 3 during the current reporting period, including the delivery of lumber during March 2023.

30. The road to the former Adit 4 entrance at the nuclear test site was restored in 2022.²³ There has been no significant activity near Adit 4 since then, although a small support structure was constructed during April 2023. In the test site support area several additional buildings were constructed during the reporting period.

E. Agency Readiness Activities

31. Once a political agreement has been reached among the countries concerned, the Agency is ready to return promptly to the DPRK, if requested to do so by the DPRK and subject to approval by the Board of Governors. The DPRK Team within the Department of Safeguards continues to undertake activities to maintain the Agency's enhanced readiness to play its essential role in verifying the DPRK's nuclear programme.²⁴ During the reporting period, the Agency has continued to maintain its enhanced readiness to return to the DPRK and has undertaken, inter alia, the following activities:

- a. Continued its collection and analysis of safeguards relevant open source information on the DPRK's nuclear programme.
- b. Increased its collection and analysis of a wide range of high-resolution commercial satellite imagery, both optical and radar, to monitor the DPRK's nuclear programme.
- c. Maintained the equipment and supplies necessary to ensure that the Agency is prepared to promptly initiate verification and monitoring activities in the DPRK.
- d. Conducted training of inspectors to maintain enhanced readiness to return to the DPRK.
- e. Continued to review and document the Agency's knowledge of the DPRK's nuclear programme, including through 3D modelling of facilities, information integration using a geospatial information system (GIS), and knowledge management activities, to ensure the Agency's experience from past activities in the DPRK is preserved.

32. All of these efforts related to the Agency's enhanced readiness have been conducted within available resources, including extrabudgetary contributions from a number of Member States.²⁵

²² GOV/2022/40/-GC(66)/16, para. 74.

²³ IAEA Director General's Introductory Statement to the Board of Governors: 16 November 2022 and 6 March 2023.

²⁴ GOV/2017/36-GC(61)/21, para. 12.

²⁵ The commercial satellite imagery, equipment and supplies procured for possible verification and monitoring activities in the DPRK, have been purchased using extrabudgetary contributions from Member States.

F. Summary

33. Since 1994, the Agency has not been able to conduct all necessary safeguards activities provided for in the NPT Safeguards Agreement and since April 2009, Agency inspectors have not been present in the DPRK.

34. During the reporting period, there were indications consistent with the operation of the 5MW(e) reactor, and operation of the reported centrifuge enrichment facility at Yongbyon and its new annex. At the Nuclear Fuel Rod Fabrication Plant, some buildings were renovated and others newly constructed. Increased levels of activity were observed at, and near, the LWR, including more frequent and longer duration testing of the LWR cooling system, and the construction of additional buildings. There were indications of ongoing activities at the Kangson complex and of mining, milling and concentration activities at the Pyongsan Uranium Mine and the Pyongsan Uranium Concentrate Plant.

35. The DPRK's nuclear activities continue to be a cause for serious concern. The ongoing maintenance of the nuclear test site continues to be deeply troubling, as is the expansion of the reported centrifuge enrichment facility and the continued operation of the 5MW(e) reactor and other facilities. The continuation of the DPRK's nuclear programme is a clear violation of relevant UN Security Council resolutions and is deeply regrettable.

36. The Director General continues to call upon the DPRK to comply fully with its obligations under relevant UN Security Council resolutions, to cooperate promptly with the Agency in the full and effective implementation of its NPT Safeguards Agreement and to resolve all outstanding issues, especially those that have arisen during the absence of Agency inspectors from the DPRK.

37. The Agency continues to maintain its enhanced readiness to return to the DPRK and to strengthen its ability to play its essential role in verifying the DPRK's nuclear programme.