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# **APPLICATION OF SAFEGUARDS IN THE DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA**

*Report by the Director General*

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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 25 August 2023, was submitted to the Board of Governors and to the 67th regular session of the General Conference in September 2023 (GOV/2023/41-GC(67)/20).
2. Having considered the report of August 2023, the General Conference adopted resolution GC(67)/RES/12 on 29 September 2023 and decided to remain seized of the matter and to include the item on the agenda for its 68th (2024) regular session.
3. This report of the Director General to the Board of Governors and the General Conference covers developments since the report of August 2023.

## 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 to as the "NPT Safeguards Agreement").<sup>1</sup> Following ad hoc inspections to verify the information

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<sup>1</sup> 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

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”. The Board 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.<sup>2</sup> 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.<sup>3</sup> 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.<sup>4</sup> 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.<sup>5</sup>

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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.

<sup>2</sup> GOV/2645 (1993).

<sup>3</sup> GOV/2022/40-GC(66)/16, para. 7.

<sup>4</sup> 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.

<sup>5</sup> GC(67)/RES/12, para. 12.

## C. Developments

8. On 6 September 2023, General Secretary of the Workers' Party of Korea (WPK) and President of the State Affairs, Kim Jong Un (hereafter referred to as General Secretary Kim), stated "we... will continue to push ahead with the nuclear weaponization of our Navy" and "we should give greater impetus to the building of nuclear-powered submarine".<sup>6</sup>

9. During the Supreme People's Assembly (SPA) session held from 26 to 27 September 2023,<sup>7</sup> General Secretary Kim said the DPRK's constitution had been supplemented "with new contents - to ensure the country's right to existence and development, deter war and protect regional and global peace by rapidly developing nuclear weapons to a higher level" and that "The DPRK's nuclear force-building policy has been made permanent as the basic law of the state". General Secretary Kim also said "the important task facing the WPK and the DPRK government... is to rapidly bolster up both in quality and quantity the nuclear force". He "stressed the need to push ahead with the work for exponentially boosting the production of nuclear weapons".<sup>8</sup>

10. General Secretary Kim's report to the WPK Central Committee, during a meeting held from 26 to 30 December 2023, "stressed the need for the nuclear weapons field to lay a reliable foundation for steadily increasing the production of nuclear weapons and wage a vigorous struggle for carrying out the nuclear weapons production plan in 2024".<sup>9</sup>

11. In his speech at the SPA session held on 15 January 2024, General Secretary Kim said "if we... operate atomic and tidal power stations in the future, we can solve the problem of power shortage as we want".<sup>10</sup>

12. On 28 January 2024, General Secretary Kim "discussed the issues related to the building of a nuclear-powered submarine... indicated the immediate tasks to be carried out by relevant sectors and state measures to be taken, and made an important conclusion on the ways to implement them".<sup>11</sup>

## D. Nuclear Programme Update

13. During the reporting period, the Agency has continued to monitor developments in the DPRK's nuclear programme and to evaluate all safeguards relevant information available to it. The Agency has not had access to the Yongbyon site<sup>12</sup> or to other locations in the DPRK. Without such access, the Agency cannot confirm either the operational status or the configuration/design features of the facilities,

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<sup>6</sup> 'Respected Comrade Kim Jong Un Makes Congratulatory Speech at Ceremony for Launching Newly-Built Submarine', KCNA, 8 September 2023.

<sup>7</sup> '9th Session of 14th SPA of DPRK Held', KCNA, 28 September 2023.

<sup>8</sup> 'Respected Comrade Kim Jong Un Makes Speech at 9th Session of 14th SPA', KCNA, 28 September 2023.

<sup>9</sup> 'Report on 9th Enlarged Plenum of 8th WPK Central Committee', KCNA, 31 December 2023.

<sup>10</sup> 'Respected Comrade Kim Jong Un Makes Policy Speech at 10th Session of 14th SPA', KCNA, 16 January 2024.

<sup>11</sup> 'Respected Comrade Kim Jong Un Guides Test-fire of Submarine-launched Strategic Cruise Missile', KCNA, 29 January 2024.

<sup>12</sup> The names of the nuclear facilities at the Yongbyon site are as previously declared by the DPRK to the Agency (GOV/2011/53-GC(55)/24, Annex), except for the Reported Centrifuge Enrichment Facility and the Light Water Reactor (LWR), which the DPRK has not declared to the Agency.

or locations, as described in this section, nor can it confirm the nature and purpose of the activities conducted therein.

## **D.1. Mining and Milling**

14. 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.

## **D.2. Conversion and Fuel Fabrication**

15. As previously reported, work commenced in July 2022 on a major renovation of the derelict UF<sub>4</sub> Production Process Building, and during April 2023 process equipment was relocated from the UO<sub>2</sub> Production Process Building to the UF<sub>4</sub> Production Process Building.<sup>13</sup> There are indications that some of the processes formerly conducted within the UO<sub>2</sub> Production Process Building have been reconstituted in the UF<sub>4</sub> Production Process Building. Renovation of the UF<sub>4</sub> Production Process Building continued throughout the reporting period. No operation of the UO<sub>2</sub> Production Process Building has been observed since December 2022.

16. As previously reported,<sup>14</sup> 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. As previously reported,<sup>15</sup> since March 2023, the Agency has observed the construction of a group of four new buildings in the southern part of the Nuclear Fuel Rod Fabrication Plant. Two of these buildings have features consistent with chemical processing activities. During the reporting period, tanks and vessels were delivered to the area, and by June 2024 three of the four buildings were separately secured within a common perimeter wall.

## **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, including the annex constructed between September 2021 and May 2022, continued to operate.

### **D.3.2. Kangson Complex**

19. As previously reported,<sup>16</sup> 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.

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<sup>13</sup> GOV/2022/40-GC(66)/16, para. 26, GOV/2023/41-GC(67)/20, paras 14 and 15.

<sup>14</sup> GOV/2022/40-GC(66)/16, para. 32.

<sup>15</sup> GOV/2023/41-GC(67)/20, para. 17.

<sup>16</sup> GOV/2022/40-GC(66)/16, para. 39.

20. In February 2024, construction commenced on a new annex along the south-western side of the main building of the Kangson complex, expanding the available floorspace.<sup>17</sup> The annex was externally complete by early-April 2024. In May 2024, a support building adjacent to the main building was renovated and expanded, and a shelter connecting it to the main building and annex was constructed.

## **D.4. Reactors**

### **D.4.1. Graphite Reactors**

21. 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. On eleven occasions, the Agency observed short periods of shutdown, each of only a few days duration. A longer shutdown period, lasting up to 26 days, was observed during late-September to early-October 2023. These shutdown periods are consistent with observations of past reactor operating cycles.

22. 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.<sup>18</sup>

### **D.4.2. Light Water Reactor**

23. From mid-October 2023 until mid-March 2024, the Agency observed an almost continuous strong water outflow from the LWR's tertiary cooling water system. During a period of cold weather in mid-December 2023, ice melt in the river and steam from the water outflow were observed, indicating that warm water was being discharged and that the LWR had reached criticality.<sup>19</sup> From mid-March 2024, the LWR was shut down for approximately 30 days, and since mid-April 2024, it has operated intermittently. These observations are consistent with the start of a commissioning process in October 2023, which has continued through the end of the reporting period.

24. As previously reported,<sup>20</sup> a group of buildings located south of the LWR compound was externally complete by December 2022. These buildings may support the fabrication and maintenance of reactor components. Ongoing activities, including deliveries to these buildings, and vehicle movements between the LWR and these buildings, were observed during the reporting period.

### **D.4.3. IRT Research Reactor**

25. No indications of operation of the IRT reactor were observed during the reporting period.

## **D.5. Reprocessing**

26. As previously reported,<sup>21</sup> the steam plant that serves the Radiochemical Laboratory operated intermittently from late-June 2023 to the end of the previous reporting period in mid-August 2023. During this reporting period, operation of the steam plant continued until late-August 2023, but no further operation has been observed since then. The operation of the steam plant during 2023 is

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<sup>17</sup> IAEA Director General's Introductory Statement to the Board of Governors, 3 June 2024.

<sup>18</sup> GOV/2011/53-GC(55)/24, para. 39.

<sup>19</sup> IAEA Director General Statement on Recent Developments in the DPRK's Nuclear Programme, 21 December 2023.

<sup>20</sup> GOV/2023/41-GC(67/20), para. 24.

<sup>21</sup> GOV/2023/41-GC(67)/20, para. 27.



consistent with waste treatment or maintenance activity at the Radiochemical Laboratory. A renovation of the steam plant, including replacement of the roof, took place between March and June 2024.

27. As previously reported,<sup>22</sup> 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. During this reporting period, the Agency has observed the construction of three concrete pads at the location.

## **D.6. Weaponization and Nuclear Testing**

28. As previously reported,<sup>23</sup> 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. One of the support buildings near the entrance to Adit 3 was removed during February 2024, but no other significant activity was observed during the reporting period.

29. As previously reported,<sup>24</sup> the road to the former Adit 4 entrance at the nuclear test site was restored in 2022 and a small support structure was constructed during April 2023. No significant activity was observed at Adit 4 during the current reporting period.

30. The nuclear test site remains prepared to support a nuclear test.<sup>25</sup>

## **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.<sup>26</sup>

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.<sup>27</sup>

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<sup>22</sup> GOV/2023/41-GC(67)/20, para. 28.

<sup>23</sup> GOV/2022/40/-GC(66)/16, para. 74.

<sup>24</sup> GOV/2022/40-GC(66)/16, para. 74.

<sup>25</sup> IAEA Director General's Introductory Statement to the Board of Governors, 3 June 2024

<sup>26</sup> GOV/2023/41-GC(67)/20, para. 31.

<sup>27</sup> 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 annex. There were indications that the LWR commissioning process started in October 2023 and continued throughout the reporting period. At the Nuclear Fuel Rod Fabrication Plant, some buildings were renovated and others newly constructed. At the Kangson complex a new annex to the main building was constructed and a support building was renovated and extended. There were indications of ongoing 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 commissioning of the LWR, the ongoing maintenance of the nuclear test site, and the continued operation of the reported centrifuge enrichment facility and 5MW(e) reactor are deeply troubling. The continuation and further development 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.





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