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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 previous report on the application of safeguards in the Democratic People's Republic of Korea (DPRK), issued on 25 August 2017, was submitted to the Board of Governors and to the 61st regular session of the General Conference in September 2017 (GOV/2017/36-GC(61)/21). This report provides an update of developments of direct relevance to the Agency, along with information on the DPRK's nuclear programme.

2. Having considered the Director General's previous report, the General Conference adopted resolution GC(61)/RES/13 on 22 September 2017 and decided to remain seized of the matter and to include the item in the agenda for its 62nd (2018) regular session.

3. The current report, which is being submitted to the Board of Governors and the General Conference, covers developments since the Director General's report of August 2017.

## 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> On 1 April 1993, the Board of Governors found, pursuant to Article 19 of the NPT Safeguards Agreement, that the Agency was not able to verify that there had 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 United Nations (UN) Security Council and to the UN General Assembly. Since 1994, the Agency has not been able to conduct all necessary safeguards activities provided for in the NPT Safeguards Agreement. 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.

5. Following the DPRK's nuclear tests in 2006, 2009, 2013 and January and September 2016, the UN Security Council adopted resolutions 1718 (2006), 1874 (2009), 2094 (2013), 2270 (March 2016) and 2321 (November 2016). 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 existing nuclear programmes 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.

6. In April 2013, the General Department of Atomic Energy of the DPRK announced that the DPRK would take measures for "readjusting and restarting all the nuclear facilities in Nyongbyon<sup>2</sup> including uranium enrichment plant and 5 MW[(e)] graphite moderated reactor".<sup>3</sup> In September 2015, the Director of the Atomic Energy Institute of the DPRK announced that "all the nuclear facilities in Nyongbyon including the uranium enrichment plant and 5 MW [(e)] graphite-moderated reactor were rearranged, changed or readjusted and they started normal operation...".<sup>4</sup>

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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 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> Nyongbyon is also known as Yongbyon.

<sup>3</sup> 'DPRK to Adjust Uses of Existing Nuclear Facilities', Korean Central News Agency (KCNA), 2 April 2013. The Agency refers to this reactor as the Yongbyon Experimental Nuclear Power Plant (5 MW(e)).

<sup>4</sup> 'Director of Atomic Energy Institute of DPRK on Its Nuclear Activities', KCNA, 15 September 2015.

## C. Developments

7. On 3 September 2017, the DPRK announced that on that day it had conducted a test of a “two-stage thermo-nuclear weapon”.<sup>5</sup> The Director General issued a statement on the same day which stated, inter alia, that the DPRK’s nuclear test was in complete disregard of the repeated demands of the international community and was an extremely regrettable act. He strongly urged the DPRK to fully implement all relevant resolutions of the UN Security Council and of the Agency.<sup>6</sup>

8. On 11 September 2017, the UN Security Council, acting under Chapter VII of the UN Charter, adopted resolution 2375 (2017) in which it, inter alia, condemned “in the strongest terms the nuclear test conducted by the DPRK... in violation and flagrant disregard of the Security Council’s resolutions” and reaffirmed its decision that the DPRK “shall immediately abandon all nuclear weapons and existing nuclear programmes in a complete, verifiable and irreversible manner, and immediately cease all related activities”.<sup>7</sup>

9. Since the Director General’s previous report, the following developments have occurred:

- (a) The DPRK announced on 1 January 2018 that during 2017 it had accomplished the goal of “perfecting the national nuclear forces”.<sup>8</sup>
- (b) At their meeting in Panmunjeom, Republic of Korea (ROK) on 27 April 2018, President Moon Jae-in of the ROK and Chairman of the State Affairs Commission Kim Jong Un of the DPRK, inter alia, “confirmed the common goal of realizing, through complete denuclearization, a nuclear-free Korean Peninsula”.<sup>9</sup> The two leaders also agreed to “actively seek the support and cooperation of the international community for the denuclearization of the Korean Peninsula”.<sup>10</sup>
- (c) The DPRK announced on 25 May 2018 that the “northern nuclear test ground of the DPRK was completely dismantled”.<sup>11</sup>
- (d) In a separate statement, the Nuclear Weapons Institute of the DPRK noted that “[d]ismantling the nuclear test ground was done in such a way as to make all the tunnels of the test ground collapse by explosion and completely close the tunnel entrances”.<sup>12</sup>
- (e) At their meeting in Singapore on 12 June 2018, President Donald J. Trump of the United States of America and Chairman of the State Affairs Commission Kim Jong Un of the DPRK, stated, inter alia: “Reaffirming the April 27, 2018 Panmunjom Declaration, the DPRK commits to work toward complete denuclearization of the Korean Peninsula”.<sup>13</sup>

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<sup>5</sup> ‘DPRK Weapons Institute On Successful Test of H-Bomb’, KCNA, 3 September 2017.

<sup>6</sup> ‘Statement by IAEA Director General Yukiya Amano on DPRK’, IAEA, 3 September 2017.

<sup>7</sup> UN Security Council Resolution S/RES/2375 (2017), 11 September 2017, paras 1 and 2.

<sup>8</sup> ‘Kim Jong Un Makes New Year Address’, KCNA, 1 January 2018.

<sup>9</sup> ‘Panmunjeom Declaration for Peace, Prosperity and Unification of the Korean Peninsula’, Ministry of Foreign Affairs, Republic of Korea, 27 April 2018.

<sup>10</sup> Ibid.

<sup>11</sup> ‘Northern Nuclear Test Ground of DPRK Dismantled’, Press Statement by the Foreign Ministry of the DPRK, 25 May 2018.

<sup>12</sup> ‘Statement of Nuclear Weapons Institute of DPRK’, Press Statement by the Foreign Ministry of the DPRK, 24 May 2018.

<sup>13</sup> ‘Joint Statement of President Donald J. Trump of the United States of America and Chairman Kim Jong Un of the Democratic People’s Republic of Korea at the Singapore Summit’, White House Press Office, 12 June 2018.

10. On 12 June 2018, the Director General issued a statement in which he welcomed the US-DPRK Joint Statement which included the DPRK's commitment towards complete denuclearization of the Korean Peninsula.<sup>14</sup>

11. As the Agency remains unable to carry out verification activities in the DPRK, its knowledge of the DPRK's nuclear programme is limited and, as further nuclear activities take place in the country, this knowledge is declining. Nevertheless, it is important for the Agency to remain cognizant of developments in that programme to the fullest extent possible, especially in light of support by the General Conference of the Secretariat's intention to enhance its readiness to play an 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>15</sup> As indicated in previous reports of the Director General, the Agency has maintained such readiness over a number of years.

12. As previously reported, in his introductory statement to the Board of Governors in June 2017 the Director General indicated his intention to enhance the Agency's readiness to play an essential role in verifying the DPRK's nuclear programme. To this end, an Executive Group was formed within the Secretariat and a DPRK Team was formed within the Department of Safeguards in August 2017.<sup>16</sup> Since the Director General's previous report, the DPRK Team and the Executive Group have intensified their efforts. The DPRK Team has increased monitoring of the DPRK's nuclear programme through more frequent collection of satellite imagery and has enhanced its readiness to promptly undertake any activities it may be requested to conduct in the DPRK. Actions to enhance readiness have included: formulation and updating of verification approaches and procedures; identification of potential inspectors for initial activities in the DPRK and provision of specialized training for them; and ensuring the availability of appropriate verification technologies and equipment to support the initial activities. 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. Once a political agreement has been reached among the countries concerned, the Agency is ready to return to the DPRK in a timely manner, if requested to do so by the DPRK and subject to approval by the Board of Governors.

## **D. Other Information on the DPRK's Nuclear Programme**

13. Since the Director General's previous report, the Agency has continued to monitor developments in the DPRK's nuclear programme and to evaluate all safeguards relevant information available to it, including open source information and satellite imagery. The Agency has not had access to the Yongbyon site or to other locations in the DPRK. Without such access, the Agency cannot confirm either the operational status or configuration/design features of the facilities or locations as described in this section, or the nature and purpose of the activities conducted therein.

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<sup>14</sup> 'Statement by IAEA Director General Yukiya Amano on DPRK', IAEA, 12 June 2018.

<sup>15</sup> GC(61)/RES/13, para. 12.

<sup>16</sup> GOV/2017/36-GC(61)/21, para. 12.

14. **The Yongbyon Site.** The details of developments at the Yongbyon site are set out in paragraphs 15–20 below.<sup>17</sup>

15. ***Yongbyon Experimental Nuclear Power Plant (5MW(e)).*** During the reporting period there have been indications consistent with the reactor's operation, including steam discharges and the outflow of cooling water. Since December 2015, when the current operational cycle started, there have been indications consistent with several short periods of reactor shutdown. However, none of these periods were of sufficient duration for the complete reactor core to have been discharged. The Agency's observations indicate that the current operational cycle is longer than the previous one.

16. ***Radiochemical Laboratory.*** Between late-April and early-May 2018, there were indications of the operation of the steam plant that serves the Radiochemical Laboratory. The duration of the steam plant's operation was not sufficient to have supported the reprocessing of a complete core from the 5MW(e) reactor.<sup>18</sup>

17. ***Yongbyon Nuclear Fuel Rod Fabrication Plant.*** There have been indications consistent with the use of the reported centrifuge enrichment facility located within the plant, including the operation of the cooling units as well as regular movements of vehicles. External construction work on the building adjoining the reported centrifuge enrichment facility was completed during 2017. Construction and renovation of buildings in the south-eastern area of the plant, including possible chemical processing buildings, which started in 2015, has continued.

18. ***Light Water Reactor (LWR) under construction.***<sup>19</sup> There have been indications in the LWR construction yard of continuing activities consistent with the fabrication of certain reactor components. The Agency has not observed indications of the delivery or introduction of major reactor components into the reactor containment building, nor has it observed any indication of the testing or operation of the reactor. A new structure with characteristics of an administrative building was constructed near to the LWR during 2018.

19. ***Construction in and near the Kuryong River.*** The Agency has observed construction activities in and near the Kuryong River. A dam across the Kuryong River was built in late-2017, which has increased the volume of water available for cooling the LWR and/or the 5MW(e) reactor. In 2018, the Agency observed construction of a structure with the characteristics of a pumphouse near the 5MW(e) reactor. Based on the Agency's observations, this construction may be related to changes in the cooling systems for the LWR and/or the 5MW(e) reactor.

20. ***Other locations within the Yongbyon site.*** The Agency has observed other small-scale construction and refurbishment activities.

21. **The Pyongsan Mine and Concentration Plant.** There have been indications of ongoing mining, milling and concentration activities at locations previously declared as the Pyongsan uranium mine and the Pyongsan uranium concentration plant.<sup>20</sup>

22. **Other Locations.** The Agency has evaluated all safeguards relevant information, including satellite imagery and open source information, about a group of buildings within a security perimeter in the vicinity of Pyongyang. The size of the main building and the characteristics of the associated

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<sup>17</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 Light Water Reactor, which the DPRK has not declared to the Agency.

<sup>18</sup> Other activities in the Radiochemical Laboratory, such as waste consolidation, may rely on the operation of the steam plant.

<sup>19</sup> The DPRK stated in April 2009 that it would build an LWR. See GOV/2011/53-GC(55)/24, para. 31.

<sup>20</sup> GOV/2011/53-GC(55)/24, para. 28.

infrastructure are not inconsistent with a centrifuge enrichment facility. The timeline of construction is not inconsistent with the reported uranium enrichment programme of the DPRK.<sup>21</sup> As stated above (paragraph 13), without access the Agency cannot confirm the nature and purpose of the activities conducted therein.

## **E. Summary**

23. The continuation and further development of the DPRK's nuclear programme and related statements by the DPRK are a cause for grave concern. The DPRK's nuclear activities, including those in relation to the Yongbyon Experimental Nuclear Power Plant (5 MW(e)) reactor, the use of the building which houses the reported centrifuge enrichment facility and the construction at the LWR, as well as the DPRK's sixth nuclear test, are clear violations of relevant UN Security Council resolutions, including resolution 2375 (2017) and are deeply regrettable.

24. 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, including those that have arisen during the absence of Agency inspectors from the DPRK. The Agency is enhancing its readiness to play an essential role in verifying the DPRK's nuclear programme.

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<sup>21</sup> GOV/2011/53-GC(55)/24, para. 30 In addition, GOV/2011/53-GC(55)/24, para. 50, noted reports on the provision of centrifuge enrichment technology to the DPRK and indications that the DPRK could produce UF<sub>6</sub> prior to 2001.