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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 Acting Director General's report on the application of safeguards in the Democratic People's Republic of Korea (DPRK), issued on 19 August 2019, was submitted to the Board of Governors and to the 63rd regular session of the General Conference in September 2019 (GOV/2019/33-GC(63)/20). 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 report of August 2019, the General Conference adopted resolution GC(63)/RES/12 on 19 September 2019 and decided to remain seized of the matter and to include the item in the agenda for its 64th (2020) regular session.

3. The current report, which is being submitted to the Board of Governors and the General Conference, covers developments since the report of August 2019.

## 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, 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 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>

7. 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 intensified efforts to enhance its readiness to play its essential

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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.

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>

## C. Developments

8. Since the last report, the following developments have occurred:

- a. On 5 October 2019, the United States and the DPRK held working-level talks in Stockholm, Sweden.<sup>6</sup>
- b. On 1 January 2020, Kim Jong Un, the Chairman of the State Affairs Commission of the DPRK – when referring to the DPRK “halting its nuclear test and ICBM test-fire and shutting down the nuclear-test ground” – stated “there is no ground for us to get unilaterally bound to the commitment any longer...”<sup>7</sup>

9. 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. As previously reported, a DPRK Team was formed within the Department of Safeguards in August 2017 to enhance the Agency's readiness to play its essential role in verifying the DPRK's nuclear programme.<sup>8</sup> During the reporting period, the Agency has further intensified its readiness and has undertaken, inter alia, the following activities:

- a. Intensified its open source information collection and analysis of the DPRK's nuclear programme, including through expanded multilingual capabilities and the acquisition of new information sources, such as scientific and technical literature.
- b. Expanded its collection and analysis of high-resolution commercial satellite imagery to monitor the DPRK's nuclear programme (taking advantage of the increased availability of commercial satellite imagery). This has provided greater insight into ongoing activities in the DPRK and enabled the more timely detection of changes in the operational status of the DPRK's nuclear facilities.
- c. Completed the procurement of equipment and supplies necessary to ensure that the Agency is prepared to promptly initiate verification and monitoring activities in the DPRK.
- d. Trained Agency inspectors on the technical features of DPRK facilities and on the technologies relevant to the DPRK's nuclear programme. An ongoing training programme is being implemented to sustain the current high level of readiness.
- e. Documented the knowledge of inspectors with experience conducting verification and monitoring in the DPRK and consolidated historical information acquired from such past activities with current information. This consolidated knowledge is being used to support training, analysis and the refinement of plans and procedures for a possible return to the DPRK.

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<sup>5</sup> GC(63)/RES/12, paras 11 and 12.

<sup>6</sup> “Fate of DPRK-U.S. Dialogue Depends on U.S. Attitude: DPRK Foreign Ministry Spokesperson,” KCNA, 6 October 2019; “North Korea Talks,” Press Statement, US Department of State, 5 October 2019.

<sup>7</sup> “Report on 5th Plenary Meeting of 7th C.C., WPK,” KCNA, 1 January 2020.

<sup>8</sup> GOV/2017/36-GC(61)/21, para. 12.

10. 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>9</sup>

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

11. 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, 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.

12. **The Yongbyon Site.** The details of developments observed at the Yongbyon site during the reporting period are as follows.<sup>10</sup>

- a. ***Yongbyon Experimental Nuclear Power Plant (5MW(e)).*** As in the previous reporting period, there have been no indications of steam discharge from the reactor or of cooling water discharge into the Kuryong River. Based on these indicators, it is almost certain that the reactor has remained shut down since early December 2018. Indications of ongoing reactor maintenance included the regular presence of a probable carbon dioxide tanker and the frequent presence of other vehicles. The Agency has not been able to determine whether irradiated fuel from the most recent operational cycle of the reactor (approximately December 2015 to December 2018) remains within the reactor core or whether the fuel rods have been removed from the core and stored in the spent fuel pond.
- b. ***Radiochemical Laboratory.*** Vehicular movements and likely chemical deliveries were observed, indicating that a physical presence has been maintained at the radiochemical laboratory. However, no operation of the plant that provides the steam necessary for reprocessing activities was observed. Therefore, it is almost certain that no reprocessing activity took place and that the plutonium produced in the 5MW(e) reactor during the most recent operational cycle has not been separated.
- c. ***Yongbyon Nuclear Fuel Rod Fabrication Plant.*** Observations of the operation of the cooling units, as well as regular vehicular movements, were consistent with the production of enriched uranium at the reported centrifuge enrichment facility located within the plant. Emissions have been observed at the UO<sub>2</sub> Production Process Building.<sup>11</sup> At the complex of buildings in the south-eastern area of the plant, observed emissions indicate that chemical processing occurred.
- d. ***Light Water Reactor (LWR) under construction.***<sup>12</sup> As previously reported,<sup>13</sup> during late September and early October 2018, the Agency observed activities consistent with the transfer of major reactor components into the reactor containment building. No additional transfers of such components have been observed since then. Based on observations of

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<sup>9</sup> All commercial satellite imagery of the DPRK, and equipment and supplies procured for possible verification and monitoring activities in the DPRK, have been purchased with extrabudgetary contributions from Member States.

<sup>10</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>11</sup> This building was included in the design information provided by the DPRK to the Agency of the Yongbyon Nuclear Fuel Rod Fabrication Plant in 1992. Indications of operation have been observed intermittently since 1992.

<sup>12</sup> The DPRK stated in April 2009 that it would build an LWR. See GOV/2011/53-GC(55)/24, para. 31.

<sup>13</sup> GOV/2019/33-GC(63)/20, para. 15.

activity near the LWR, including deliveries of materials and the presence of construction vehicles, it is likely that internal construction work has continued during the current reporting period. The Agency has not observed any indications of reactor operation, although there was an indication of a test of the infrastructure for cooling water during April 2020, similar to that which was observed in March 2019.<sup>14</sup> Based on the information currently available, it is not possible to estimate when the reactor could become operational.

- e. **Construction in and near the Kuryong River.** No significant construction activities were observed in or near the Kuryong river in the vicinity of the LWR and 5MW(e) reactor.<sup>15</sup>

13. **The Pyongsan Mine and Concentration Plant.**<sup>16</sup> 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>17</sup>

14. **Other Locations.** As previously reported, the Agency has evaluated all safeguards-relevant information, including satellite imagery and open source information, about a group of buildings within a security perimeter at Kangson, in the vicinity of Pyongyang.<sup>18</sup> The construction of this complex at Kangson took place before the construction of the reported centrifuge enrichment facility at Yongbyon, with which it shares some characteristics. If the Kangson complex is a centrifuge enrichment facility this would be consistent with the Agency's assessed chronology of the development of the DPRK's reported uranium enrichment programme.<sup>19</sup> Regular vehicular movements indicated ongoing activities at the Kangson complex.

## E. Summary

15. During the reporting period, some nuclear facilities continued to operate while others remained shut down. There were indications consistent with the production of enriched uranium at the reported centrifuge enrichment facility at Yongbyon. It is also likely that the DPRK has continued internal construction activities at the experimental LWR. However, the 5MW(e) nuclear reactor and the Radiochemical Laboratory continued to show no indications of operation.

16. The DPRK's nuclear activities remain a cause for serious concern. The continuation of the DPRK's nuclear programme is a clear violation of relevant UN Security Council resolutions and is deeply regrettable.

17. 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.

18. The Agency is intensifying its readiness to play its essential role in verifying the DPRK's nuclear programme.

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<sup>14</sup> GOV/2019/33-GC(63)/20, para. 15.

<sup>15</sup> GOV/2019/33-GC(63)/20, para. 16.

<sup>16</sup> Pyongsan is also known as Phyongsan.

<sup>17</sup> GOV/2011/53-GC(55)/24, para. 28.

<sup>18</sup> GOV/2018/34-GC/(62)/12, para.22.

<sup>19</sup> GOV/2011/53-GC(55)/24, paras. 30-35, 50.





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