

**ADHERENCE TO AND COMPLIANCE WITH
ARMS CONTROL, NONPROLIFERATION, AND DISARMAMENT
AGREEMENTS AND COMMITMENTS**



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ADHERENCE TO AND COMPLIANCE WITH ARMS CONTROL, NONPROLIFERATION, AND DISARMAMENT AGREEMENTS AND COMMITMENTS

INTRODUCTION

PURPOSE

This Report is transmitted pursuant to Section 403 of the Arms Control and Disarmament Act, as amended (22 U.S.C. § 2593a), which requires a report by the President on *Adherence to and Compliance with Arms Control, Nonproliferation, and Disarmament Agreements and Commitments*.

SCOPE OF THE REPORT

This Report assesses U.S. compliance with and adherence to arms control, nonproliferation, and disarmament agreements and related commitments in 2019, including confidence- and security-building measures (CSBMs), as well as the compliance and adherence in 2019 of other nations to arms control, nonproliferation, and disarmament agreements and commitments, including CSBMs and the Missile Technology Control Regime, to which the United States is a participating State. The issues addressed in the Report will primarily reflect activities from January 1, 2019, through December 31, 2019, unless otherwise noted.

The Compliance Report includes reporting and analysis at the levels of classification for which reliable supporting information is available. The SECRET and unclassified versions of the Report recount as much information as possible, but certain issues can be discussed only at higher levels of classification. Some compliance concerns are raised and some findings of violations are made, for instance, only in the SECRET or TOP SECRET/SCI-level elements of the Report.

ADHERENCE AND COMPLIANCE

Arms control, nonproliferation, and disarmament agreements and related commitments continue to be important tools that can protect and advance U.S. interests. Their provisions can limit or reduce threats to U.S. and allies' and partners' security, including by limiting participating States' access to or engagement in dangerous or destabilizing capabilities or activities, providing insight and transparency into the actions of participating States, and encouraging stabilizing patterns of behavior and interaction. In these ways, such agreements and commitments can contribute broadly to transparency and stability on a global and regional scale.

However, the utility of arms control, nonproliferation, and disarmament agreements and commitments as tools of statecraft and for the protection and advancement of security interests diminishes significantly if participating States do not fully implement the obligations and commitments they have undertaken. In fact, failure to comply can present serious national security challenges. A Party that complies with a treaty only to have one or more of its counterparts violate the agreement, for instance, can find itself at a potentially grave and

destabilizing disadvantage – a danger that would be all the more acute to the degree that such cheating is successfully concealed. Violations that are not appropriately and effectively addressed can perpetuate and compound these dangers. Therefore, within the framework of any given set of agreements and commitments, vigorous verification, scrupulous compliance analysis, and robust compliance enforcement are critical aspects of U.S. national security planning.

In evaluating any country's compliance with its arms control, disarmament, and nonproliferation obligations, the United States considers a variety of factors. These include the nature and precise language of the obligations undertaken in the context of international law, information regarding the country's activities – including that acquired by so-called National Technical Means of verification (*i.e.*, intelligence collection), cooperative verification measures, open source information, and diplomatic means – and any information provided by the country in question. A similar process is used to evaluate a country's adherence to politically binding commitments.

Many concerns relating to compliance involve matters of interpretation; many involve highly classified information derived from sensitive sources and methods. Furthermore, some states often attempt to conceal activity that is inconsistent with their obligations or commitments, and some are able to do so with a thoroughness and sophistication that can make it difficult to “pierce the veil” of denial and deception and establish the requisite factual basis for a compliance assessment. For these reasons, it may take significant time to assess whether the actions or activities that gave rise to concerns constitute violations or simply represent differences in implementation approaches or some other permissible activity.

In the Report, the term “violation” refers to any action or omission by a State Party to an international agreement that has been determined by the United States to be inconsistent with obligations owed by that State Party to the United States under the agreement in question and that may give rise to international legal remedies.

As noted above, there can sometimes be legal or factual uncertainty as to whether a violation has occurred. Accordingly, the Report distinguishes between “violations” and instances in which the U.S. government is considering but has not yet determined whether a violation has occurred, for example because there are unresolved factual or legal questions about compliance. The Report refers to the latter category as “compliance concerns.”

In general, the Report uses the terms “violation” and “compliance” only in reference to legal obligations undertaken in international agreements. When discussing politically binding commitments, the Report generally uses the term “adherence” instead of “compliance.” Thus, a State engaged in conduct that is determined to be inconsistent with a politically binding commitment is said to be “not adhering” to that commitment, rather than “violating” the commitment.

When concerns arise regarding the actions of treaty partners, the United States seeks, whenever possible, to address its concerns through diplomatic engagement. However, in the event that the United States determines violations to have occurred, we also have a range of options and means

to try to convince violators it is in their interest to return to compliance and to prevent violators from benefitting from their violations.

The Report evaluates adherence to and compliance with arms control, nonproliferation, and disarmament agreements and commitments to which the United States is a participating State. The United States and the majority of the other participating States involved in these agreements and commitments are implementing these obligations and commitments and have indicated their intention to continue doing so. As the Report makes clear, however, compliance concerns – and in some instances treaty violations and actions determined to be inconsistent with political commitments – exist involving a relatively small number of States. Where possible, the United States continues to pursue resolution of those issues with the States in question, as well as to assess the implications of these States' actions and how best the United States should respond to them.

U.S. Organizations and Programs to Evaluate and Ensure Treaty Compliance

Because of our deep-seated legal traditions, our commitment to the rule of law, and our belief in the importance of such agreements to enhance our security and that of our allies and partners, the United States complies with its obligations under all applicable arms control, nonproliferation, and disarmament agreements. It is longstanding U.S. policy to comply with international legal obligations. To the extent the United States has determined that compliance with an obligation is no longer in the U.S. national security interest, the United States has sought to negotiate modification of the agreement in question or withdraw from the agreement altogether – as indeed occurred recently with the Intermediate-Range Nuclear Forces or INF Treaty.

As a reflection of the seriousness with which the United States views these obligations, the United States has established legal and institutional procedures to ensure U.S. compliance. As described below, individual departments and agencies within the executive branch have established policies and procedures to ensure that plans and programs under those departments and agencies' purview remain consistent with U.S. international obligations. For example, U.S. Department of Defense (DOD) compliance review groups oversee and manage DOD compliance with arms control, nonproliferation, and disarmament agreements and related commitments, including CSBMs. Additionally, the U.S. Department of State, in its role as the lead U.S. agency on arms control matters, is responsible for providing policy advice and expertise related to compliance to individual departments and agencies and the interagency community. Further, an interagency review is conducted in appropriate cases, including when other treaty parties formally raise concerns regarding U.S. implementation of its obligations. Finally, Congress performs oversight functions through committee hearings and budget allocations.

OVERVIEW

This Report addresses U.S. compliance with and adherence to arms control, nonproliferation, and disarmament agreements and commitments (Part I), other States' compliance with and adherence to arms control, nonproliferation, and disarmament agreements and commitments pertaining to nuclear issues (Part II), other States' adherence to missile commitments and assurances (Part III), and other States' compliance with and adherence to arms control, nonproliferation, and

disarmament agreements and commitments pertaining to chemical issues (Part IV), biological issues (Part V), and conventional issues (Part VI).

PART I: U.S. COMPLIANCE WITH ARMS CONTROL, NONPROLIFERATION, AND DISARMAMENT AGREEMENTS AND COMMITMENTS

U.S. INSTITUTIONAL AND PROCEDURAL ORGANIZATION FOR ENSURING COMPLIANCE

There are processes and controls within the U.S. Executive Branch, including at the Department of Defense (DOD), the Department of Energy (DOE), the Department of Homeland Security (DHS), the Department of Commerce (DOC), and the Nuclear Regulatory Commission (NRC), that operate to ensure that plans and programs under those departments' and agencies' purview remain consistent with U.S. international obligations and commitments in the areas of arms control, nonproliferation, and disarmament. Additionally, the Department of State, as the lead U.S. agency on arms control matters, has a role in providing policy advice and expertise related to compliance to individual departments and agencies and the interagency community. These processes and controls operate in parallel, and in addition to the Congressional oversight process.

In 1972, DOD established the first such department-level process. Under this compliance process, established at the conclusion of the Strategic Arms Limitation Talks (SALT) that led to arms control-related agreements on strategic offensive arms, key offices in DOD are responsible for overseeing DOD compliance with all U.S. arms control, nonproliferation, and disarmament agreements and commitments, including CSBMs. DOD components ensure that their implementing program offices adhere to DOD compliance directives and seek guidance from the offices charged with oversight responsibility. Similar processes have been established by other departments and agencies to ensure that their programs and activities comply with the United States' international obligations and commitments. For example, DHS similarly established a compliance review process to assess DHS-sponsored research for compliance with all relevant arms controls agreements. Interagency reviews also are conducted in appropriate cases, such as when other States formally raise concerns regarding the United States' implementation of its arms control, nonproliferation, and disarmament obligations and commitments.

In addition, all Federal departments and agencies that fund, direct, or execute classified life sciences research are required to implement oversight measures to ensure all department or agency activities comply with applicable domestic and international legal obligations, and to report on classified life sciences research projects and on the functioning of their oversight processes.

U.S. COMPLIANCE

In 2019, the United States continued to be in compliance with all of its obligations under arms control, nonproliferation, and disarmament agreements. When other countries have formally raised a compliance concern regarding U.S. implementation activities, the United States has carefully reviewed the matter to confirm its actions were in compliance with its obligations.

Convention on the Prohibition of the Development, Production, and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction (Biological Weapons Convention or BWC)

All U.S. activities during the reporting period were consistent with the obligations set forth in the Biological Weapons Convention (BWC). The United States continues to work toward enhancing transparency of biological defense work and effective national implementation of BWC obligations using the BWC confidence-building measures and a range of voluntary measures and initiatives.

Nevertheless, Russia continues to raise questions about U.S. compliance with the BWC. Near the end of 2018, the Russian Federation again questioned the activities of the Lugar Center for Public Health Research in Tbilisi, Georgia, and alleged that the U.S. Army Medical Research Directorate-Georgia (USAMRD-G), located at the Lugar Center “carries out double purpose research activities in the field of highly dangerous infectious diseases.”

These Russian accusations are groundless. USAMRD-G has a small contingent of researchers working at the Lugar Center on health security at the request of the Government of Georgia. At the Center, USAMRD-G conducts epidemiologic disease surveillance and sample collection, basic science, translational research, and product development, including vaccine development. These activities are legitimate medical research and do not violate the BWC.

Russia also alleged that certain U.S.-registered patents are for “devices that appear to be prohibited by the BWC, as well as the Chemical Weapons Convention (CWC).” In the United States, a patent does not confer any legal right or authorization to produce an invention; patent rights simply serve to give the patent owner the legal means to exclude other parties from taking certain actions with respect to that invention. The United States has a comprehensive legal regime to implement its obligations under Article IV of the BWC and Article VII of the CWC. These laws make clear that, *inter alia*, the development and production of a biological or chemical weapon is prohibited under U.S. law, and any violation of those laws is punishable by penalties ranging from fines to imprisonment. No patent approval does – or could – convey authority to conduct activity that contravenes these clear rules.

Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction (Chemical Weapons Convention or CWC)

The United States has provided a full and complete declaration of its chemical weapons (CW) and associated CW facilities, and continues to work toward completing the destruction of CW and associated CW facilities, in accordance with its CWC obligations. The CWC Conference of the States Parties (CSP) decision regarding the “Final Extended Deadlines of 29 April, 2012” requires the United States to report at each regular session of the Organization for the Prohibition of Chemical Weapons (OPCW) Executive Council (EC) on the progress achieved towards complete destruction of remaining stockpiles. The United States provides a report and briefing to each regular session of the EC and to the CSP annually on U.S. progress achieved towards complete destruction.

The original deadline of 2012 could not be met because changes in U.S. law required further research and development into alternative chemical weapons destruction methods, other than transport and incineration.

The United States has completed destruction of its Category 2 and 3 chemical weapons and has completed destruction of more than 93 percent of its Category 1 chemical weapons stockpile. There are two CW destruction facilities, one located in Pueblo, Colorado, and one in Blue Grass, Kentucky, that are scheduled to complete destruction of the remaining stockpile not later than December 31, 2023. Neutralization is used as the primary destruction technology at both sites. Additionally, explosive destruction technologies are used to enhance safety, while accelerating destruction schedules at both sites.

The United States remains fully committed to complete destruction of its entire stockpile, consistent with the Convention's imperatives of public safety, environmental protection, and international transparency and oversight.

The United States also is compliant with its CWC obligations related to commercial activities. U.S. CWC Regulations (15 CFR § 710 *et seq.*) require commercial facilities exceeding CWC-specified activity thresholds to submit annual declarations, notifications, and other reports, including on past and anticipated activities, and to permit systematic and routine verification through on-site inspections of declared commercial facilities.

**Treaty on the Elimination of Intermediate-Range and Shorter-Range Missiles
(Intermediate-Range Nuclear Forces or INF Treaty)**

All U.S. activities during the reporting period were consistent with the obligations set forth in the INF Treaty during the period they were applicable.

On December 4, 2018, Secretary of State Pompeo announced the U.S. intent to suspend its obligations under the Treaty within 60 days, should Russia fail to return to compliance.

On February 2, 2019, the United States notified the Parties to the INF Treaty that the United States had suspended its obligations under the treaty as a remedy for Russia's material breach, as announced on December 4, 2018. The United States also announced it would withdraw from the treaty in six months in accordance with Article XV of the treaty. During the six-month suspension period (February 2, 2019, to August 1, 2019), the United States remained a Party to the INF Treaty, but was not obligated to comply with its provisions. On August 2, 2019, the United States withdrew in accordance with Article XV of the INF Treaty, and the treaty terminated. Future compliance reports will not include material on the INF Treaty.

Threshold Test Ban Treaty (TTBT), Underground Nuclear Explosions for Peaceful Purposes Treaty (PNET), and Limited Test Ban Treaty (LTBT)

The Treaty Between the United States of America and the Union of Soviet Socialist Republics on the Limitation of Underground Nuclear Weapon Tests, also known as the Threshold Test Ban Treaty (TTBT), was signed in 1974, with a Protocol signed in 1990. It establishes a nuclear “threshold” by prohibiting each Party from undertaking underground nuclear weapon tests having a yield exceeding 150 kilotons at any place under its jurisdiction or control, and it provides for notification and verification of testing activities. The Peaceful Nuclear Explosions Treaty (PNET) governs underground nuclear explosions for peaceful purposes at any place under the jurisdiction or control of the Parties other than the test sites specified under the TTBT. The Limited Test Ban Treaty (LTBT) is a multilateral agreement that opened for signature and entered into force in 1963. It prohibits nuclear weapon tests or any other nuclear explosion in the atmosphere, in outer space, and under water.

Under Section IV, paragraph 2, of the June 1990 Protocol to the TTBT, each party is required, by not later than June 1 of each year, to inform the other of the number of underground nuclear weapons tests by specified category that it intends to conduct in the following calendar year. For purposes of the TTBT, an “underground nuclear weapon test” means either a single underground nuclear explosion conducted at a test site, or two or more underground nuclear explosions conducted at a test site within an area delineated by a circle having a diameter of two kilometers, conducted within a total period of time of 0.1 second, and whose combined yield is less than 150 kilotons. The TTBT Protocol defines the term “explosion” as “the release of nuclear energy from an explosive canister.” The United States interprets “the release of nuclear energy from an explosive canister” to mean the release of nuclear energy resulting from a physical breach of the explosive canister.

The United States has not conducted any nuclear weapon explosive tests or any nuclear explosions for peaceful purposes since 1992. All U.S. activities during the reporting period were consistent with the obligations set forth in the TTBT, PNET, and LTBT.

1925 Geneva Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare

All U.S. activities during the reporting period were consistent with the obligations set forth in the 1925 Geneva Protocol.

Treaty on Conventional Armed Forces in Europe (CFE)

All U.S. activities during the reporting period were consistent with the obligations set forth in the Treaty on Conventional Armed Forces in Europe (CFE).

The United States continues to implement countermeasures vis-à-vis the Russian Federation, specifically the cessation of implementation of certain CFE Treaty obligations (notifications, data exchange, and inspections) in response to Russia’s continued violation of its obligations to the United States under the CFE Treaty. These measures were closely coordinated with NATO

Allies, who also continued to implement similar steps in their respective national capacities. Russia has not challenged this action. The United States continues to perform its obligations under the CFE Treaty vis-à-vis all other States Party.

Treaty on Open Skies (OST)

All U.S. activities during the reporting period were consistent with the obligations set forth in the Treaty on Open Skies (OST).

Treaty on the Non-Proliferation of Nuclear Weapons (Nuclear Non-Proliferation Treaty or NPT)

All U.S. activities during the reporting period were consistent with the obligations set forth in the NPT.

Treaty Between the United States of America and the Russian Federation on Measures for the Further Reduction and Limitation of Strategic Offensive Arms (New START or NST)

All U.S. activities during the reporting period were consistent with the obligations set forth in New START (NST).

U.S. conversion procedures for B-52H heavy bombers and Trident II SLBM launchers fully comply with Treaty provisions, and the United States has met its obligations under the Treaty to remove these items from accountability.

Agreement between the Government of the United States of America and the Government of the Russian Federation Concerning the Management and Disposition of Plutonium Designated as No Longer Required for Defense Purposes and Related Cooperation, as amended (Plutonium Management and Disposition Agreement or PMDA)

The United States has not undertaken any activities during or prior to the reporting period that are inconsistent with its obligations under the Plutonium Management and Disposition Agreement (PMDA). This includes U.S. activities during the reporting period to terminate the project to construct a mixed oxide (MOX) fuel fabrication facility that would have been used to dispose of plutonium under the agreement by turning it into fuel for irradiation in commercial nuclear reactors and to develop plans for a less expensive alternative disposition through dilution and burial of the plutonium. Russia's assertion that this change in U.S. disposition plans violates the agreement, which was addressed in the 2019 Compliance Report, remains without merit.

The PMDA provides that the disposition of plutonium designated under the agreement shall be by irradiation as fuel in nuclear reactors or by any other methods that may be agreed by the Parties in writing. The PMDA does not stipulate any legally-binding deadlines for the start or completion of plutonium disposition, but it does contain a non-binding target to begin disposition in 2018.

In 2018, the Secretary of Energy exercised the authority under the National Defense

Authorization Act for Fiscal Year 2018 and the Consolidated Appropriations Act, 2018 to waive the requirement to use funds for construction and project support activities relating to the MOX facility, including certification that an alternative option for carrying out the disposition program for the same amount of plutonium intended to be disposed of in the MOX facility exists. The Department of Energy took additional steps to terminate the project to construct the MOX facility. The administration will continue to work with Congress to finalize plans for U.S. disposition by the alternative dilute-and-dispose method. Further steps are needed in this respect before engaging Russia to obtain its agreement to this alternative method of disposition as required under the PMDA.

PART II: OTHER STATES' COMPLIANCE WITH AND ADHERENCE TO ARMS CONTROL, NONPROLIFERATION, AND DISARMAMENT AGREEMENTS AND COMMITMENTS PERTAINING TO NUCLEAR ISSUES

TREATY BETWEEN THE UNITED STATES OF AMERICA AND THE UNION OF SOVIET SOCIALIST REPUBLICS ON THE ELIMINATION OF THEIR INTERMEDIATE-RANGE AND SHORTER-RANGE MISSILES (INTERMEDIATE-RANGE NUCLEAR FORCES OR INF TREATY)

The Treaty Between the United States of America and the Union of Soviet Socialist Republics on the Elimination of Their Intermediate-Range and Shorter-Range Missiles (INF Treaty) was signed by President Ronald Reagan and Soviet General Secretary Mikhail Gorbachev on December 8, 1987, and entered into force on June 1, 1988. The treaty was of unlimited duration. The treaty provided that a party could withdraw on six months' notice if it decided that extraordinary events related to the subject matter of this treaty had jeopardized its supreme interests. The United States exercised that right and withdrew on August 2, 2019, terminating the treaty, due to Russia's failure to return to full and verifiable compliance with the treaty despite U.S. efforts to engage Russian officials on the issue from mid-2013 onward. Because the treaty is no longer in force, future compliance reports will not include material on the INF Treaty.

RUSSIAN FEDERATION (RUSSIA)

FINDING

The United States has determined that in 2019, the Russian Federation (Russia) continued to be in violation of its obligations under Articles I, IV, and VI of the INF Treaty not to possess, produce, or flight-test a ground-launched cruise missile (GLCM) with a range capability of 500 kilometers (km) to 5,500 kilometers, or to possess or produce launchers of such missiles. The Russian GLCM in question is the SSC-8 SCREWDRIVER, which the United States assesses to be designated by Russia as the 9M729. On December 4, 2018, Secretary of State Michael Pompeo announced that Russia's continued production, possession, and deployment of such a GLCM constituted a material breach of the treaty. Secretary Pompeo also announced the United States would suspend its obligations under the treaty in 60 days as a remedy for Russia's material breach unless Russia returned to full and verifiable compliance. Since 2014, the United States made very clear its concerns about Russia's violation and the risks it posed to European and Asian security. Russia would have had to verifiably eliminate all SSC-8/9M729 missiles, all SSC-8/9M729 launchers, and all associated support equipment in order to come back into full and verifiable compliance with its INF Treaty obligations.

On February 2, 2019, the United States notified Russia that the United States was suspending its obligations under the treaty as a remedy for Russia's material breach, as announced on December 4, 2018. At the same time, the United States also announced it would withdraw from the treaty in six months, in accordance with Article XV of the treaty. Subsequently, Russia announced the suspension of its obligations under the treaty on March 4, 2019. Despite continuing U.S. efforts to convince Russia to return to compliance, it chose not to do so, and the United States duly withdrew from the treaty on August 2, 2019, resulting in the treaty's termination.

CONDUCT GIVING RISE TO COMPLIANCE CONCERNS

The INF Treaty banned the possession, production, and flight-testing of intermediate- and shorter-range missile systems, because the United States and the Soviet Union shared the view that these systems threatened peace and stability in the European region. The treaty required the complete elimination of the approximately 800 U.S. and approximately 1,800 Soviet ground-launched missiles with maximum ranges between 500 and 5,500 kilometers, their launchers, and their associated support equipment and structures. All such items were eliminated by May 28, 1991.

The INF Treaty established a verification regime using national technical means of verification (NTM), notifications, and an on-site inspection regime to detect and deter violations of treaty obligations. The inspection regime concluded on May 31, 2001 – that is, 13 years after the treaty's entry into force – in accordance with Article XI of the treaty.

As stated in all editions of this Report since 2014, the United States determined that Russia was in violation of its obligations under the INF Treaty not to possess, produce, or flight-test a

GLCM with a range capability of 500 kilometers to 5,500 kilometers, or to possess or produce launchers of such missiles.

SSC-8/9M729 Ground-Launched Cruise Missile

Russia began the covert development of an intermediate-range, ground-launched cruise missile (the SSC-8/9M729) probably by the mid-2000s. The Novator design bureau was tasked to develop the missile. Although the 9M729 closely resembles and has features in common with other cruise missiles that Novator was developing at the time, specifically Russia's R-500/9M728 ground-launched cruise missile for the Iskander system, as well as Kalibr naval cruise missiles, it is clearly a separate and distinguishable weapon. As of the end of 2018, the United States assesses that Russia has fielded multiple battalions of SSC-8/9M729 missiles.

Russia was ready to test the SSC-8/9M729 cruise missile in the mid- to late 2000s in such a way that appeared purposefully designed to disguise the true nature of the activity. Developers installed a fixed missile launcher for the SSC-8/9M729 at one of the test pads at the Kapustin Yar missile test range. This portion of the range historically has been used to test other missiles, which have been treaty compliant.

Russia used the fixed launcher to flight test the SSC-8/9M729 cruise missile to distances well over 500 kilometers. The flight-testing of cruise missiles to such ranges was allowed by the treaty under certain conditions, but only if the missile was not being developed for ground-based use. The purpose of this exception was to permit the land-based testing of missiles not subject to the treaty, such as submarine-based ballistic or cruise missiles. By using a fixed launcher for tests beyond 500 kilometers, Russia was attempting to conceal the fact that the SSC-8/9M729 missile was designed to be a ground-launched missile and was therefore a violation of the treaty.

At a certain point in its development of the SSC-8/9M729, Russia needed to flight test the missile from its intended ground-mobile platform to verify the capability. These tests also occurred from Kapustin Yar. To mask the purpose of these tests, Russia was careful to fly the SSC-8/9M729 only to distances less than 500 kilometers rather than to its maximum range capability. Russia probably assumed that its parallel development and deployment of the Iskander cruise missile – also tested from the same site – would provide sufficient cover for its INF violation.

By 2015, Russia had completed a comprehensive flight test program consisting of multiple tests of the SSC-8/9M729 missile from both fixed and mobile launchers at Kapustin Yar. In March 2017, Novator's General Director publicly acknowledged the successful test program for the SSC-8/9M729 and several other missiles during a Kapustin Yar anniversary ceremony but provided no details on its capabilities. Compared to its other modern cruise missiles, Russia remained conspicuously silent about the details of the SSC-8/9M729.

To be clear, the SSC-8/9M729 represented a flagrant violation of the INF Treaty that Russia intended to keep secret. The U.S. finding was not based on a misunderstanding of this system or its capabilities. A cruise missile did not need to be tested from a mobile launcher to ranges over 500 kilometers to violate the INF Treaty. Further, the treaty applied to ground-launched

intermediate-range missiles such as the SSC-8/9M729 regardless of the type of warhead they carried. In any event, the SSC-8/9M729 is both conventional and nuclear capable.

The history of Russia's attempt to covertly exploit a treaty exception permitting ground-based flight tests of intermediate-range for missiles not subject to the treaty, its lack of an explanation for these tests, and its overall secrecy about the SSC-8/9M729 missile provide important context for Russia's violation.

SS-N-30a/Sagaris Naval Cruise Missile

Beginning in 2013, Russian's defense industry and military officials publicly suggested that they would arm select ship classes with a cruise missile system designed to resemble a standard 40-foot shipping container and notionally called Kalibr-K, but they did not specify which weapons it would contain.

Among other weapons, the Kalibr missile complex includes the intermediate-range RS-SS-N-30a/Sagaris land-attack cruise missile (LACM), according to a Western defense journal report, which Russia has employed from naval platforms against targets in Syria.

In early February 2019, several senior Russian officials, including President Putin, publicly endorsed proposals to base sea-based Kalibr missiles on land.

Additional information is provided in the higher classification Annex.

ANALYSIS OF COMPLIANCE CONCERNS

Relevant Treaty Provisions

The INF Treaty defined an intermediate-range missile as a ground-launched ballistic missile (GLBM) or GLCM having a range capability in excess of 1,000 kilometers but not in excess of 5,500 kilometers. The treaty defined a shorter-range missile as a GLBM or GLCM having a range capability equal to or in excess of 500 kilometers but not in excess of 1,000 kilometers. A GLCM was defined as a ground-launched cruise missile that was a weapon-delivery vehicle.

Article I provided that the Parties could not have intermediate-range and shorter-range missiles as defined by the treaty.

Paragraph 1 of Article IV provided that the Parties could not possess intermediate-range missiles or launchers of such missiles, or support structures or equipment of the categories listed in the Memorandum of Understanding associated with such missiles and launchers.

Paragraph 1 of Article VI provided that no Party could produce or flight-test any intermediate-range missiles or produce any stages or launchers of such missiles.

Paragraph 1 of Article VII provided that if a cruise missile had been flight-tested or deployed for weapon delivery, all missiles of that type would be considered to be weapon-delivery vehicles.

Paragraph 2 of Article VII provided that if a GLCM were an intermediate-range missile, all GLCMs of that type would be considered to be intermediate-range missiles.

Paragraph 4 of Article VII provided that the range capability of a GLCM not listed in Article III of the treaty would be considered to be the maximum distance that could be covered by the missile in its standard design mode flying until fuel exhaustion, determined by projecting its flight path onto the earth's sphere from the point of launch to the point of impact.

Paragraph 7 of Article VII provided that if a launcher had been tested for launching a GLCM, all launchers of that type would be considered to have been tested for launching GLCMs.

Paragraph 8 of Article VII provided that if a launcher had contained or launched a particular type of GLCM, all launchers of that type would be considered to be launchers of that type of GLCM.

Paragraph 11 of Article VII provided that a cruise missile that was not a missile to be used in a ground-based mode would not be considered to be a GLCM if it was test-launched at a test site from a fixed land-based launcher that was used solely for test purposes and that was distinguishable from GLCM launchers.

Paragraph 2 of Article XV provided that each Party would have the right to withdraw from the treaty if it decided that extraordinary events related to the subject matter of this treaty had jeopardized its supreme interests. It would have to give notice of its decision to withdraw to the other Party six months prior to withdrawal from the treaty. Such notice must include a statement of the extraordinary events the notifying Party regarded as having jeopardized its supreme interests.

SSC-8/9M729 Ground-Launched Cruise Missile

As noted above, the INF Treaty prohibited States Party from possessing, producing, or flight-testing cruise or ballistic missiles subject to the treaty, or possessing or producing launchers of such missiles. There were four criteria that determined whether a State Party's cruise missile was subject to the treaty: (1) the cruise missile was considered to be ground-launched; (2) the cruise missile met the treaty definition (Article II, paragraph 2) of a cruise missile; (3) the cruise missile was a weapon-delivery vehicle; and (4) the cruise missile had a range capability equal to or greater than 500 kilometers, but not greater than 5,500 kilometers. Based on U.S. intelligence assessments, the United States determined that the SSC-8/9M729 meets all four criteria. The United States has also determined that all launchers of the type that had contained, launched, or been tested for launching the SSC-8/9M729 were prohibited under the provisions of the INF Treaty.

The United States determined that the SSC-8/9M729 was an intermediate-range GLCM subject to the INF Treaty and that the possession, production, and flight-testing of this GLCM by Russia was in violation of obligations under the INF Treaty not to possess, produce, or flight-test such missiles (Articles I, IV, and VI). As these obligations were essential to the accomplishment of

the treaty's object and purpose, the United States found Russia's violation to constitute a material breach.

SS-N-30a/Sagaris Naval Cruise Missile

As stated above, some sea-based missiles in the Kalibr missile complex have a demonstrated range equal to or in excess of 500 km. In February 2019, several senior Russian officials, including President Putin, publicly endorsed proposals to base Kalibr missiles on land. The mere endorsement of these proposals did not amount to a violation of the INF Treaty, both because the parties' obligations were suspended at the time and because proposals for potential ground-launched INF-range systems are not themselves violations absent actual production, testing, or possession of such systems. However, the endorsement of these proposals demonstrated Russia's lack of interest in returning to full compliance with the treaty. In February 2019, the United States had made clear that it would rescind its notice of withdrawal if Russia returned to full compliance by destroying the treaty-violating SSC-8 missile system and associated launchers. Russian officials' endorsement of proposals to base Kalibr missiles on land indicated that, instead of seeking to conform its conduct to the treaty, Russia was contemplating additional conduct that could be inconsistent with the treaty.

EFFORTS TO RESOLVE COMPLIANCE CONCERNS AND NEXT STEPS

After declaring Russia in violation of the INF Treaty in July 2014 for the possession, production, and flight-testing of the SSC-8/9M729 ground-launched cruise missile system, the United States pressed Russia to return to compliance with its obligations under the treaty. U.S. officials raised U.S. concerns with Russia on repeated occasions and at various levels and departments within the Russian government, engaged the highest levels of Russia's government, and provided detailed information to Russia outlining U.S. concerns. U.S. officials stressed that Russia's continuing violation and failure to take concrete steps to return to compliance were impediments to improving bilateral relations and created an untenable situation whereby the United States complied with the INF Treaty while Russia violated it.

Between May 2013 and February 2019, the United States took the following concrete steps to address the Russian violation:

- Over 30 engagements with Russian officials at senior levels;
- Held six expert-level meetings to discuss Russia's violation: these included two sessions of the Special Verification Commission (SVC), the treaty's implementation body, and four bilateral meetings of technical experts;
- Placed two Russian entities involved in the violation onto the U.S. Department of Commerce Entity List;
- Secured from Congress funding to start treaty-compliant research and development on conventional, ground-launched, intermediate-range systems to show Russia the potential cost of endangering the INF Treaty;
- Held more than a dozen meetings within NATO regarding the INF issue, and secured seven formal statements from NATO on the INF issue that urged Russia to be transparent and to take action to preserve the viability of the treaty;

- Conducted multiple engagements, beginning in 2014, with Indo-Pacific allies, such as Japan, the Republic of Korea, and Australia, in bilateral dialogues to explain Russia's violation of the INF Treaty and discuss the U.S. approach to bringing Russia back into compliance;
- Held multiple engagements with allies after President Trump's October 20, 2018, announcement regarding looming U.S. withdrawal of the treaty, including with NATO at the highest levels; and
- Provided five annual compliance reports to Congress recounting and detailing the U.S. finding of Russia's noncompliance with the treaty.

During the six-month period following suspension but prior to withdrawal (February 2-August 1, 2019), the United States continued to urge the Russia to return to compliance, including through:

- More than six senior-level engagements with Russia's officials;
- A July 5 NATO-Russia Council meeting;
- A July 17 Strategic Security Dialogue with Russia; and
- Release of the 2019 Arms Control Compliance Report reflecting once again Russia's longstanding noncompliance with the treaty.

Despite all of these U.S. efforts to use diplomacy to resolve the situation, Russia persisted in its violation, and the SSC-8 proceeded from testing to production, and then to deployment.

Across two administrations, the United States made serious attempts to resolve Russia's noncompliance with the INF Treaty. Under the Trump Administration, the United States redoubled efforts to bring Russia back into compliance with an integrated strategy of diplomatic, economic, and military measures. The Administration conducted an extensive review of Russia's ongoing INF Treaty violation in order to assess the potential security implications of the violation for the United States and its allies and partners and to determine an appropriate response. On December 8, 2017, the Administration announced its INF Integrated Strategy, which included new diplomatic, military, and economic measures intended to induce Russia to return to compliance and to deny it any military advantage should it persist in its violation.

- First, the United States sought diplomatic resolution, including through the SVC, which had been established by the INF Treaty to "resolve questions relating to compliance with the obligations assumed." The United States convened sessions of the SVC on November 15-16, 2016, and on December 12-14, 2017, to discuss Russia's violation. Ukraine, Kazakhstan, and Belarus also participated in the SVC. Additionally, the United States and Russia held bilateral experts meetings in September 2014, April 2015, June 2018, and January 2019.
- Second, as a military response, the U.S. Department of Defense commenced INF treaty-compliant research and development (R&D) of conventional ground-launched, intermediate-range missile concepts in late 2017. Such R&D was not prohibited by the treaty. After the United States suspended its obligations under the treaty in February 2019, DOD commenced fabrication activities on components to support developmental testing of these systems. These activities were designed to be reversible, in case Russia

returned to full and verifiable compliance before the United States withdrew from the treaty in August 2019.

- Third, the United States took economic measures relating to Russia's INF Treaty-violating ground-launched cruise missile program. The Administration added the Russian firms Novator and Titan, both associated with development of the SSC-8/9M729, to the Department of Commerce Entity List: this created a higher bar for export, re-export, or transfer licenses.

The Administration's INF Integrated Strategy focused on two lines of effort: increasing pressure on Russia to return to full and verifiable compliance; and developing a proposal for a potential negotiated solution or "off ramp," that, in combination with increased pressure, could encourage Russia's return to compliance. Possible steps (including verification measures) that would permit confidence that Russia had returned to compliance would have needed to be agreed to with Russia through a consultative process.

On October 20, 2018, President Trump announced that the United States would "terminate" the INF Treaty. On December 4, 2018, Secretary Pompeo announced that the United States found Russia in material breach of the treaty and that as a remedy the United States would suspend its obligations in 60 days unless Russia returned to full and verifiable compliance. This announcement followed extensive engagement with Russia to convince it to return to compliance. On February 2, 2019, the United States notified Russia that the United States suspended its obligations under the treaty as a remedy for Russia's material breach, as announced on December 4, 2018. The United States also announced it would withdraw from the treaty in six months in accordance with Article XV. As Secretary Pompeo said on February 1, 2019: "Russia has jeopardized the United States' security interests, and we can no longer be restricted by the Treaty while Russia shamelessly violates it." NATO Allies fully supported the U.S. action.

Russia failed to return to full and verifiable compliance with the treaty despite six years of U.S. diplomacy toward that goal. On August 2, 2019, the United States withdrew from the INF Treaty and the treaty terminated. Again, NATO Allies fully supported the U.S. action.

If Russia had decided it wanted to return to compliance, it had a clear path forward. There were measures in the INF Treaty used for eliminating missile systems, which Russia could have adapted to verifiably destroy its violating missile system. The United States tabled a paper of illustrative steps for verifiable elimination of the missiles, their launchers, and associated equipment to Russia, but it refused to acknowledge its violation or to engage on how to return to compliance.

Engagement with Russia

The United States first raised its INF concerns with Russia in May 2013. At the U.S. initiative, bilateral experts' meetings took place on September 11, 2014; April 20, 2015; and June 20-21, 2018. The United States further convened two meetings of the SVC, the formal body under the

treaty to address compliance concerns, on November 15-16, 2016, and December 12-14, 2017. U.S. and Russian experts met for a sixth time on January 15, 2019.

Over the course of many bilateral and multilateral engagements, the United States provided detailed information to Russia, more than enough information for Russia to engage substantively on the issue. This included the following information:

- Information pertaining to the missile and the launcher, including Russia's internal designator for the mobile launcher chassis and the names of the companies involved in developing and producing the missile and launcher;
- Information on the violating GLCM's test history, including coordinates of the tests and Russia's attempts to conceal the nature of the program;
- The violating GLCM had a range capability between 500 and 5,500 kilometers;
- The violating GLCM was distinct from the R-500/SSC-7 GLCM or the RS-26 ICBM; and,
- The United States assessed Russia's designator for the system in question was 9M729.

To assess Russia's willingness to return to compliance with its obligations under the treaty, the United States called another session of the SVC, which met December 12-14, 2017.

On June 20-21, 2018, the United States and Russia held a bilateral, expert-level meeting to discuss compliance and implementation issues related to the INF Treaty. Russia continued to deny its violation and make false allegations regarding U.S. compliance.

Following President Trump's October 20, 2018, announcement that Russia's violation of the INF Treaty posed a direct threat to U.S., European, and global security, Secretary Pompeo announced on December 4, 2018, the United States would suspend its obligations under the INF Treaty effective in 60 days as a remedy for Russia's material breach, unless Russia returned to compliance. During this 60-day period, Russia refused to acknowledge it was in violation of the treaty, choosing to continue to make false accusations regarding U.S. compliance and obscure facts rather than work with the United States to return to compliance.

In an effort to pressure the Russian Federation to return to compliance before the United States suspended its obligations under the treaty, Under Secretary of State for Arms Control and International Security Andrea Thompson led an interagency delegation to Geneva and met with Russian Deputy Foreign Minister Sergey Ryabkov on January 15, 2019, to discuss the INF Treaty. At that meeting, the United States again provided in writing specific steps Russia could take to return to full and verifiable compliance. Russia continued to deny that the SSC-8/9M729 missile violated the treaty and refused to discuss its return to compliance with the treaty.

On January 23, 2019, Russia hosted in Moscow an event that it claimed was a demonstration of the SSC-8/9M729 missile. This event was not requested or attended by the United States. Russia only exhibited a launcher and a canister, not a missile. Russia also revealed the location of the testing of the 9M729 missile at Kapustin Yar and the unique transporter-erector-launcher (TEL) used to launch the missile, but denied the missile flew over 500 km. A static display of the missile canister, however, did nothing – nor could it have done anything – to change the fact

that the SSC-8/9M729 was a GLCM that had been flight-tested to ranges beyond 500 km. On January 30-31, 2019, Under Secretary Thompson met with members of the P-5 in Beijing, China, including with DFM Ryabkov, where the INF issue was again discussed.

Regardless of the meeting venue, Russia's response to U.S. engagement over the five years was consistent: deny any wrongdoing, demand more information in an effort to determine how the United States detected the violation, and issue baseless counter-accusations that the United States was violating the treaty. For over five years, Moscow pretended that it did not know what missile or tests the United States was talking about. It was not until Special Assistant to the President and NSC Senior Director for Weapons of Mass Destruction and Counterproliferation Christopher A. Ford publicly announced Russia's designator for the missile – 9M729 – in November 2017 that the Russian side acknowledged the existence of the new cruise missile in question. Russia immediately pivoted to a new cover story, however, that such a new ground-launched cruise missile existed but was not capable of ranges banned by the treaty. Russia, to this day, has refused to answer questions about the SSC-8/9M729 tests to INF ranges from the fixed launcher, despite the U.S. provision of specific coordinates, information pertaining to the missile and launcher, and the violating missile test history.

As noted above, on February 2, 2019, the United States notified Russia that the United States was suspending its obligations under the treaty as a remedy for Russia's material breach, as announced on December 4, 2018. The United States also announced it would withdraw from the treaty in six months in accordance with Article XV. Russia failed to return to full and verifiable compliance with the treaty despite six years of U.S. diplomacy toward that goal. On August 2, 2019, the United States withdrew from the INF Treaty and the treaty terminated. As documented in NATO's February 1, 2019, statement, NATO Allies fully support the U.S. action.

Engagement with Allies and Partners

The United States regularly consulted allies and partners on its concerns regarding Russia's compliance with its obligations under the INF Treaty. Until the termination of the treaty in August 2019, the United States continued to work with its allies in Europe and the Indo-Pacific region to increase political pressure on Russia, to continue to share available intelligence information, and to consult with allies and partners on the threat posed by Russia's development of the SSC-8/9M729 and the possible need to readjust our regional defense posture to counter the aggregate Russian military threat, including the deployment of the SSC-8/9M729.

The North Atlantic Council issued a December 15, 2017, public statement, affirming U.S. compliance with the treaty and urging Russia to address the serious concerns raised by its missile system "in a substantial and transparent way, and actively engage in a technical dialogue with the United States." In the July 2018 NATO Summit Declaration, Allies reiterated their serious concerns regarding the SSC-8/9M729, observed that Russia's behavior had led to widespread doubts about its compliance, and stated that in the absence of any credible answer from Russia, "the most plausible assessment would be that Russia is in violation of the Treaty." On August 22-24, 2018, Under Secretary Thompson led an interagency team to Australia that, among other issues, discussed INF.

Following President Trump's October 20, 2018, announcement that the United States would terminate the treaty, the United States continued consultations with allies.

Allies publicly voiced their support for U.S. concerns about the ongoing Russian violation. On October 31, 2018, following a meeting of the NATO-Russia Council, NATO Secretary General Jens Stoltenberg stated, "No arms control arrangement can be effective if it is only respected by one side." Later, on November 29, 2018, Secretary General Stoltenberg reiterated in an op-ed piece that "Russia's actions undermine the INF Treaty, placing it in serious jeopardy.... There are no new U.S. missiles in Europe, but there are new Russian missiles. A treaty that is respected by only one side cannot be effective and will not keep us safe. If a treaty no longer affects the reality on the ground, then it is nothing more than a piece of paper." When the United States announced on December 4, 2018, that Russia was in material breach of the treaty, NATO issued a statement that it "strongly support[ed] the finding of the United States that Russia is in material breach of its obligations under the INF Treaty" and "the situation whereby the United States and other parties fully abide by the treaty and Russia does not, is not sustainable."

Allies also joined the United States in defeating Russia's attempts to distract from and avoid accountability for its violation by pursuing a disingenuous resolution on the INF Treaty at the United Nations. First, the Russian draft resolution was defeated October 26, 2018, during the United Nations First Committee, after which the United States led allies and other partners in defeating a revived draft on December 21, 2018, at the United Nations General Assembly by a vote of 43 Yes – 46 No – 78 Abstain. In a February 1, 2019, statement, NATO Allies said they fully supported the U.S. action to suspend its obligations and give notice of withdrawal from the treaty. They also said: "Unless Russia honours its INF Treaty obligations through the verifiable destruction of all of its 9M729 systems, thereby returning to full and verifiable compliance before the U.S. withdrawal takes effect in six months, Russia will bear sole responsibility for the end of the Treaty."

On February 15-17, 2019, Under Secretary Thompson participated in the Munich Security Conference, where the INF Treaty was a key topic of discussion.

On August 2, 2019, the North Atlantic Council released a statement that the United States' decision to withdraw from the treaty was "a decision fully supported by NATO Allies." That same day NATO Secretary General Stoltenberg further affirmed in public remarks that "NATO has been able to be united on this issue all the way. We are to understand that all Allies have agreed with the United States in their approach to Russia. The United States and many other Allies have reached out directly to Russia, tried over years to convince them to come back into compliance with the treaty. All Allies have agreed that Russia is in clear violation."

Beyond our engagement with Russia and allies, the United States has been transparent about its concerns. Since 2014, the Department of State's annual *Report on the Adherence to and Compliance with Arms Control, Nonproliferation, and Disarmament Agreements and Commitments* has found that Russia is in violation of its obligations under the INF Treaty. The unclassified version of the Compliance Report has been made available on the Department of State's website, and the classified versions have been transmitted to Congress.

TREATY ON MEASURES FOR THE FURTHER REDUCTION AND LIMITATION OF STRATEGIC OFFENSIVE ARMS (NEW START OR NST)

For a discussion of Russia's implementation of its obligations under New START , see the Report on Implementation of the New START Treaty, dated April 2020, submitted pursuant to Section (a)(10) of the Senate Resolution of Advice and Consent to Ratification of the Treaty Between the United States of America and the Russian Federation on Measures for the Further Reduction and Limitation of Strategic Offensive Arms (also known as the "Condition (a)(10) Report"), and appended to this Report. An excerpt on Russian compliance from the Condition (a)(10) Report is below:

"Based on the information available as of December 31, 2019, the United States certifies the Russian Federation to be in compliance with the terms of the New START Treaty. The United States has raised some implementation-related questions with the Russian Federation through diplomatic channels and in the context of the Bilateral Consultative Commission (BCC). Discussions of these questions were ongoing as of December 31, 2019. The New START Treaty established the BCC to promote the objectives and implementation of the provisions of the treaty. This confidential forum for resolving questions relating to implementation and compliance consists of members from both the United States and Russian Federation and met two times in 2019. For a detailed discussion of issues the United States has raised with the Russian Federation between January 1, 2019, and December 31, 2019, and updates on issues raised previously, please see the classified version of this Report."

PRESIDENTIAL NUCLEAR INITIATIVES CONCERNING TACTICAL NUCLEAR WEAPONS

This chapter is a voluntary addition reporting on a unilateral arms control commitment by the Russian Federation (Russia).

In public speeches in 1991 and 1992, the presidents of the United States and the Soviet Union (and the Russian Federation or Russia after the dissolution of the Soviet Union) pledged, as a political commitment, to take separate but related steps regarding reductions in the number and deployment of their tactical nuclear weapons. These unilateral pledges are referred to as the Presidential Nuclear Initiatives (PNIs).

In a September 27, 1991, televised speech to the nation, President George H.W. Bush issued the first unilateral PNI in which the United States pledged changes in both its strategic and tactical nuclear forces. The U.S. tactical nuclear weapon-related pledges included:

- Elimination of its entire worldwide inventory of ground-launched short-range, that is, theater nuclear weapons;
- Return to the United States and destruction of all nuclear artillery shells and short-range ballistic missile (SRBM) warheads;
- Removal of all tactical nuclear weapons from surface ships, attack submarines, and land-based naval aircraft; and
- Destruction of many of these land- and sea-based warheads and securing remaining ones in central areas.

President Bush indicated the United States would implement these measures regardless of the Soviet reaction, but he invited Soviet President Mikhail Gorbachev to take similar steps to “go down this road with us.”

In an October 5, 1991, televised address, President Gorbachev responded with “reciprocal steps.” In regard to tactical nuclear warheads, he pledged that the Soviet Union would:

- Eliminate all nuclear mines, nuclear artillery munitions and nuclear warheads for tactical missiles;
- Withdraw nuclear warheads for air defense missiles from the troops and concentrate them in central bases as well as eliminate a portion of them; and
- Remove all tactical nuclear warheads from surface ships and general-purpose submarines and store the weapons, as well as those associated with land-based naval aviation, in central storage sites. A portion of the weapons would be eliminated.

After the dissolution of the Soviet Union, Russia’s President Boris Yeltsin confirmed that Russia was the legal successor state to the USSR and that Russia accepted responsibility for carrying out the PNI pledges. In a January 29, 1992, televised speech, President Yeltsin responded to President George H.W. Bush’s second PNI pronouncement by further pledging with regard to tactical nuclear warheads to:

- Cease production of nuclear warheads for land-based tactical missiles, nuclear artillery shells, and nuclear mines and eliminate the stockpile of these weapons;
- Eliminate one third of sea-based tactical nuclear weapons;
- Eliminate one half of nuclear warheads for air defense missiles; and
- Eliminate half of all air-launched tactical nuclear munitions.

In an October 6, 1991, meeting with U.S. officials, then-Soviet Deputy Foreign Minister Obukhov said that, since weapons subject to the Intermediate-Range Nuclear Forces (INF) Treaty had been eliminated, and since under the October 6 (sic) Gorbachev initiative Soviet tactical nuclear warheads would be eliminated, there would remain no nuclear warheads for surface-to-surface missiles (SSM) below intercontinental range (*i.e.*, 5,500 kilometers) once the relevant actions in Gorbachev's speech were completed. He also confirmed that after completion of the steps outlined in the Gorbachev initiative, there would be no nuclear weapons aboard Russian ships other than submarine-launched ballistic missiles (SLBMs).

Because presidential speeches are the primary source of the PNI pledges, the terms used to describe the types of weapons included or the actions of eliminating/withdrawing tactical nuclear warheads from operational units to central storage were never precisely defined. Little has been done to clarify further the terms used to describe the types of weapons included or the actions taken with respect to withdrawing tactical nuclear warheads from operational units to central storage or destroying the warheads. Since the time the pledges were made, both the United States and Russia have begun using the term "non-strategic nuclear weapons" (NSNW).

The Department of State has previously raised questions publicly about Russia's fulfillment of its PNI pledges. In 2004 and 2006, Assistant Secretary of State Stephen Rademaker made clear U.S. concerns about Russia falling short in its implementation of its PNIs.

FINDING

The United States assesses that Russia is not adhering to all of its PNI commitments. Although Russia has consolidated its Non-Strategic Nuclear Weapons into fewer nuclear weapons storage sites, Russia's efforts to retain dual-capable non-strategic systems for its ground forces are inconsistent with its PNI pledge to eliminate nuclear warheads for such systems. Despite a 2014 statement by a Russian Ministry of Foreign Affairs (MFA) official that force posture changes were made based on the PNIs "that are still carried out by Russia," and other carefully worded statements by Russia that the PNIs are still "relevant" to it, the United States assesses, based on Russian activities and statements from Russian officials and military officers from 1994 through the mid-2000s, that Russia no longer feels bound by its PNI pledge to eliminate all nuclear warheads for the ground forces.

CONDUCT GIVING RISE TO ADHERENCE CONCERNS

General-Lieutenant Buzhinskiy of the Ministry of Defense (MOD) International Affairs Directorate told the United States in 2005 that Russia was revisiting some of its pledges on NSNW and that he "could not say that Russia...would implement all of its PNI pledges." This was a change in tone from statements before 2003, in which Russian officials still held out the

possibility that all PNI initiatives—including elimination of nuclear warheads for Ground Forces—would be implemented.

Russia currently has an active stockpile of NSNW. Russia's NSNW arsenal includes warheads for SS-21 close-range ballistic missiles (CRBMs) and dual-capable SS-26 short-range ballistic missiles (SRBMs). It also includes atomic demolition mines and torpedoes for surface ships and submarines. The 2018 U.S. Nuclear Posture Review states that Russia is either rejecting or avoiding its obligations or commitments under several instruments, including the PNIs. On February 3, 2018, Russia's Foreign Ministry issued a statement saying: "it is not true what the new U.S. Nuclear Posture Review says about Russia's alleged refusal to implement the Presidential Nuclear Initiatives (PNIs) of 1991-1992, which concern the two countries' political commitments to withdraw and reduce non-strategic nuclear weapons (tactical nuclear weapons, TNWs). Acting in keeping with the PNIs, Russia has reduced the greater part (75 per cent) of its TNWs and has removed the rest from their delivery vehicles for storage at the central storage facilities in the national territory.... Although PNIs are not a legally binding international agreement, they continue to be relevant to us up to this day."

Russian officials have made a series of public statements that say either explicitly or implicitly that Russia's ground forces are equipped with non-strategic nuclear warheads, and in particular that the SS-26 SRBM is nuclear capable. Addressing the press after an April 29, 1999, Security Council meeting, then-Secretary of the Security Council Vladimir Putin reportedly said that President Yeltsin had signed a decree on a new concept for the development and use of NSNW; Russian press reports following the meeting said that the Security Council approved a nuclear capability for the SS-26. In May 2000, Colonel-General Bukreyev, then Chief of Staff of the Ground Forces Directorate, describing the current and future state of affairs of the Ground Forces in *Armeyskiy Sbornik*, declared that the most important requirements for the Ground Forces included the ability to carry out combat missions with the use of both nuclear and conventional weapons, indicating Russia had retained nuclear warheads for its SS-21 CRBMs. Colonel-General Vladimir Nikolayevich Zaritskiy, Chief of the Armed Forces Missile Troops and Artillery, told the Russian press in November 2003 that his troops continued to train in the use of NSNW in order to remain at "permanent readiness" to carry out nuclear strikes. According to a report by the Russian news agency Interfax, the chief of Russia's General Staff publicly stated in late 2008 that Russia regarded tactical nuclear weapons as "a restraining factor for the huge numbers of [conventional] weapons located in [NATO] European countries. And the chief of the MOD's 12th Main Directorate (GUMO) – the Defense Ministry organization responsible for maintaining and securing Russia's nuclear weapons stockpile – stated publicly in late 2007 that Russia "has a difficult southern sector, it has nuclear powers on its borders, and therefore tactical nuclear weapons represent for the Russian Federation a deterrence factor against aggressive influences hostile to it." In November 2019, the Russian MoD noted that the Iskander complex can carry a nuclear warhead in its website announcement that a missile brigade unit in western Russia was receiving Iskander equipment to replace its SS-21s.

Additional information is provided in the higher classification Annex.

ANALYSIS OF ADHERENCE CONCERNS

The PNIs, which were announced in Presidential speeches in 1991 and 1992, are non-legally-binding unilateral political commitments. There are no specific verification measures associated with these political commitments. As a result, monitoring and assessment of Russia's adherence to its PNI pledges relies primarily upon intelligence collected unilaterally.

Based on the information reported above, Russia's efforts to retain a dual-use capable system for its Ground Forces are inconsistent with its PNI pledge to eliminate its stockpile of warheads for these weapons.

EFFORTS TO RESOLVE ADHERENCE CONCERNS AND NEXT STEPS

There has been no substantive discussion of these matters with Russia since the mid-2000s. Even though Russia continues to abide by some PNI pledges, such as warhead consolidation and likely the declared reduction in stockpiles, the United States assesses, based partly on statements from Russia's military officers from 1994 through the mid-2000s, that Russia no longer feels bound by its PNI pledge to eliminate all nuclear warheads for ground-based tactical missiles.

PLUTONIUM MANAGEMENT AND DISPOSITION AGREEMENT

In 2000, the United States and the Russian Federation (Russia) signed and began provisionally applying the Plutonium Management and Disposition Agreement (PMDA), which commits each country to verifiably dispose of no less than 34 metric tons of weapon-grade plutonium removed from their respective defense programs. In 2006 and 2010, the United States and Russia signed Protocols that amended the PMDA. The PMDA as amended entered into force on July 13, 2011.

Russian President Putin announced in October 2016 that Russia was suspending “implementation of” the PMDA claiming “unfriendly actions” by the United States and the “inability of the United States of America to ensure fulfilment of its obligations.” Russia subsequently clarified that its purported suspension of the PMDA was in response to U.S. sanctions imposed because of Russia’s occupation of Crimea, as well as delays and proposed changes to the U.S. PMDA program. This is the fourth year the PMDA has been addressed in the Compliance Report.

The PMDA provides that the disposition of plutonium designated under the agreement shall be by irradiation as fuel in nuclear reactors or by any other methods that may be agreed by the Parties in writing. The PMDA does not stipulate any legally binding deadlines for the start or completion of plutonium disposition, but it does contain a non-binding target to begin disposition in 2019. Russia informed the United States in 2014 that it would be in a position to begin its disposition of plutonium by irradiation under the agreement by 2018, but that it will not begin its disposition until the United States is ready to begin disposition of its PMDA plutonium (which is consistent with the agreement). (In this respect, Russia announced completion of its fuel fabrication facility later in 2014.)

The United States is not ready to begin its disposition. As a result of its reviews since 2014, for budgetary reasons, the United States has sought a less expensive alternative to irradiation for its disposition of plutonium under the agreement. In 2019, the Department of Energy took steps to terminate the project to build a mixed-oxide (MOX) fuel fabrication facility. The United States previously had been planning to use that facility to dispose of plutonium under the agreement by turning it into fuel for irradiation in commercial nuclear reactors. Further steps are required to finalize plans for U.S. disposition by an alternative method (dilute and dispose in a geologic repository) before engaging Russia to obtain its agreement to this method as required under the PMDA.

FINDING

There is no indication that Russia has violated any of its obligations under the PMDA. Russia’s October 2016 notification of its purported suspension of the PMDA raised concerns regarding Russia’s future compliance with its PMDA obligations. Those concerns may be resolved one way or the other once the United States is in a position to engage Russia on the U.S. proposal for an alternative to irradiation for disposition of its PMDA plutonium.

CONDUCT GIVING RISE TO COMPLIANCE CONCERN

The Russian President announced a decision in the October 2016 decree to “suspend implementation of” the PMDA. The decree also stated that Russia would not return any of its PMDA plutonium to military programs or use it for any nuclear-explosive purposes. As addressed in the 2019 Compliance Report, the United States concluded that neither the decree nor subsequent Russian statements articulated a valid basis under the PMDA or customary international law for such a unilateral suspension in such circumstances. Therefore, it is the U.S. view that Russia’s purported suspension of the PMDA did not have legal effect and does not affect either Party’s obligations under the agreement.

There were no new developments in the reporting period.

ANALYSIS OF COMPLIANCE CONCERN

Neither Party is in violation of the PMDA.

Because disposition of plutonium had not yet begun under the agreement, Russia’s purported suspension of the PMDA has neither hindered any substantive activities under the agreement in 2017, 2018, or 2019, nor raised any other concerns about the status of Russia’s plutonium stocks.

Russia’s purported suspension of the PMDA gives rise only to a potential compliance concern because it creates uncertainty regarding whether Russia intends to comply with its obligations under the PMDA in the future.

EFFORTS TO RESOLVE COMPLIANCE CONCERN AND NEXT STEPS

As specified in the 2019 Compliance Report, the Parties exchanged views in 2016 and 2017 disputing the validity of the legal basis for Russia’s purported suspension of the PMDA. Additional information was provided in prior Compliance Reports. Aside from its purported suspension of the PMDA, Russia’s actions have not given rise to any compliance concerns. The United States remains committed to fulfilling its obligations under the PMDA.

The United States will continue to monitor whether Russia’s conduct, apart from its purported suspension of the PMDA, continues to be consistent with its obligations under the agreement.

NUCLEAR NON-PROLIFERATION TREATY (NPT)

This chapter of the Report covers developments relevant to other nations' compliance with the 1968 Treaty on the Non-Proliferation of Nuclear Weapons (Nuclear Non-Proliferation Treaty or NPT), including their compliance with related obligations to conclude and implement a Comprehensive Safeguards Agreement (CSA) with the International Atomic Energy Agency (IAEA). This chapter also addresses, where relevant, the status of countries' efforts to conclude and implement a modified Small Quantities Protocol (SQP) to their CSA and their efforts to conclude and implement an Additional Protocol to their CSA (AP). The chapter focuses on developments in Burma, Iran, North Korea, and Syria.

As of the end of 2019, there were nine non-nuclear-weapon States (NNWS) Party to the NPT that had not yet brought into force a CSA with the IAEA. Although the CSA was designed to meet the requirements of the NPT, the AP in combination with the CSA is now widely considered to be the global standard for nuclear safeguards. It contains measures that increase the IAEA's ability to verify the non-diversion of declared nuclear material and to provide assurances as to the absence of undeclared nuclear material and activities in a State, and thereby to provide assurances that the State has met its NPT obligation to place all nuclear material in peaceful uses under IAEA safeguards. The United States supports universal adoption of the AP by States Party to the NPT, and believes that AP adherence is essential to ensuring the effectiveness and credibility of IAEA safeguards. As of the end of 2019, 136 States Party had an AP that had entered into force, and Iran was provisionally applying its AP pending its entry into force. The Protocol Additional to the Agreement between the United States of America and the IAEA for the Application of Safeguards in the United States of America (U.S. AP) entered into force for the United States on January 6, 2009.

COUNTRY ASSESSMENTS

MYANMAR (BURMA)

FINDING

The available evidence does not support a conclusion that Myanmar (Burma) violated the NPT; however, the United States remains concerned about Burma's lack of transparency regarding past nuclear work, as much of this knowledge remains within the military and is not reported to the civilian government. Burma's signing of an AP to its safeguards agreement in 2013 and its announcement that it would adhere to the modified SQP contributed significantly to U.S. confidence in the civilian leadership's peaceful intentions regarding its nascent nuclear program. However, more than five years have passed and neither the AP nor the modified SQP has entered into force. Efforts to bring them into force and implement them will require cooperation between the civilian and military elements of the Burmese government. The United States urges these bodies to delay no longer and to complete the collaborative work necessary to bring the AP and modified SQP into force. Burma's implementation of the AP and a modified SQP will improve confidence regarding an assessment of Burma's NPT compliance.

CONDUCT GIVING RISE TO COMPLIANCE CONCERNS

Burma became a State Party to the NPT in 1992, its CSA with the IAEA entered into force in 1995, and it signed an AP with the IAEA in 2013. Entry into force (EIF) of the AP will occur when Burma notifies the IAEA that its domestic statutory requirements have been met, after which Burma will have 180 days to submit its initial declaration to the IAEA. As a country with little to no nuclear material, Burma concluded an SQP to its CSA in 1995, which holds in abeyance key provisions in the CSA as long as Burma does not possess quantities of nuclear material that exceed a defined threshold or maintain nuclear material “in a facility as defined in” its CSA. In 2005, the IAEA approved an update of the Model SQP. Burma has not yet modified its SQP to conform to the update, but in 2012, then-President Thein Sein announced Burma’s intention to do so.

Burma publicly announced its intention to acquire a nuclear research reactor for peaceful purposes as early as 2002, and in 2007 it signed an agreement with Russia for assistance building a nuclear research center, including a light-water research reactor. In 2010, an analysis commissioned by a dissident group alleged that Burma was seeking nuclear technology, concluding that “[t]his technology is only for nuclear weapons and not for civilian use or nuclear power.” The Burmese government at the time dismissed the claims as “groundless allegations.” Burma reported in 2010 that it had suspended its reactor plan with Russia “due to inadequacy of resources and the government’s concern for misunderstanding it may cause.” Russia and Burma did sign a Memorandum of Understanding (MOU) for cooperation in peaceful use of nuclear energy on June 18, 2015, and the two countries reportedly established a working body for nuclear technology cooperation under the MOU in October 2016. The Burmese government describes the MOU as addressing cooperation on research and development of nuclear energy for peaceful purposes, as well as nuclear safety, assessments of the environmental impact of nuclear energy, and nuclear medical technology. No significant nuclear projects between the two countries have yet moved forward as a result of this MOU.

Additional information is provided in the higher classification Annex.

ANALYSIS OF COMPLIANCE CONCERNS

Under NPT Article II, each NNWS Party undertakes, among other things, “not to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices.” In NPT Article III, each NNWS Party “undertakes to accept safeguards ... for the exclusive purpose of verification of the fulfillment of its obligations assumed under this Treaty with a view to preventing diversion of nuclear energy from peaceful uses to nuclear weapons or other nuclear explosive devices.” This obligation requires conclusion and implementation of a CSA with the IAEA.

When Burma’s AP enters into force, it will be obligated to, among other things, provide the IAEA with a declaration that includes information on any nuclear facilities and all nuclear-related activities. Burma will also be required to provide the IAEA with expanded inspection access, including to additional parts of its nuclear research program. The AP will also enable the IAEA to collect samples and information to verify compliance. When Burma modifies its SQP to conform to the 2005 update, this will, among other things, require it to declare all nuclear

material. Additionally, Burma will be required to provide early design information for any planned nuclear facilities and corresponding inspection access, obligations which are currently held in abeyance under the existing SQP.

The United States retains confidence in Burma's civilian leadership's intentions to pursue only activities consistent with a limited, and purely peaceful, civilian nuclear program. Although the United States continues to be concerned about Burma's willingness to be transparent about its previous nuclear work given that much of this knowledge remains within the military, which is not under the civilian government's control, we have no evidence of ongoing activities under Burma's civilian government that raise compliance concerns. Burma's declarations of nuclear-related activities and locations under an AP, its initial declaration of nuclear material under a modified SQP, and its responsiveness to IAEA questions following EIF and implementation of an AP and modified SQP are key to assessing activities that have raised concerns in the past regarding its military's nuclear intentions and activities.

Additional information is provided in the higher classification Annex.

EFFORTS TO RESOLVE COMPLIANCE CONCERNS AND NEXT STEPS

The United States has held a series of workshops for Burmese stakeholders, which included a complementary access exercise to increase awareness of the AP and the modified SQP, and to help prepare for their future implementation. A workshop was held in August 2018, at which experts from the IAEA and the United States Department of Energy consulted with representatives from Burma's Attorney General's office and legislative committees in parliament.

In 2019, the United States continued to emphasize the importance of ensuring the cooperation of all relevant agencies to provide complete reporting to the IAEA, address all IAEA outstanding questions and concerns regarding Burma's nuclear activities, and to bring the AP into force and update the SQP. The United States works with partners, particularly with Japan and Australia, to encourage Burma's civilian government to bring the AP into force and to update the SQP.

DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA (NORTH KOREA)

FINDING

The Democratic People's Republic of Korea (North Korea or DPRK) was in violation of its obligations under Articles II and III of the NPT and its CSA with the IAEA at the time it announced its withdrawal from the NPT in 2003, and it remains accountable for these violations. North Korea's continuing nuclear activities make clear that it also has not adhered to its commitments in the 2005 Joint Statement of the Six-Party Talks to abandon all nuclear weapons and existing nuclear programs, and to return at an early date to the NPT and IAEA safeguards. As discussed in prior Reports, North Korea failed to adhere to its commitments under the 1994 Agreed Framework. North Korea is in violation of its IAEA safeguards obligations.

CONDUCT GIVING RISE TO COMPLIANCE CONCERNS

North Korea acceded to the NPT in December 1985, and its CSA with the IAEA entered into force in 1992.

Irrespective of one's interpretation of whether or not North Korea's 2003 notice of withdrawal from the NPT became legally effective, the DPRK remains subject to IAEA safeguards obligations. If that withdrawal did become effective, North Korea's 1992 CSA would have terminated and its prior 1977 safeguards agreement with the IAEA would have resumed applicability. Alternatively, if the DPRK's withdrawal did *not* become effective in 2003, North Korea's 1992 CSA would still be in force today. In either case, therefore, North Korea is presently in violation of its IAEA safeguards obligations, since the IAEA has not conducted routine monitoring activities at any of the facilities covered by either agreement.

Previous editions of this Report have described violations by North Korea of its obligations under Articles II and III of the NPT and its CSA before it announced its withdrawal from the NPT in 2003. As discussed in prior Reports, North Korea also failed to adhere to its commitments to the United States under the 1994 Agreed Framework by developing a clandestine uranium enrichment program and by breaking its previous freeze on its plutonium production facilities.

Production Facilities

In an August 2019 report, the IAEA noted it observed indications consistent with the operation of the 5MW(e) plutonium production reactor at the Yongbyon Nuclear Research Center up until mid-August 2018. From mid-August through late November 2018, there were indications that the reactor was not in continuous operation. From early December 2018, there have been no indications of the reactor's operation.

In August 2019, the IAEA noted that during the reporting period there were indications consistent with the use of the reported centrifuge uranium enrichment facility at the Yongbyon Nuclear Fuel Rod Fabrication Plant, including the operation of the cooling units and the regular movement of vehicles. The IAEA reported that since early 2019 it has observed no further renovation and construction work on buildings in the south-eastern area of the Yongbyon Nuclear Fuel Rod Fabrication Plant, but there have been indications of possible chemical processing taking place in these buildings during the reporting period.

In 2017, the IAEA Director General Amano had noted that North Korea's uranium enrichment facility had doubled in size, noting that the situation had "gone into a new phase."

North Korea is also constructing an experimental light water reactor (ELWR) at Yongbyon, which North Korea revealed publicly in 2010. During late September and early October of 2018, the IAEA reported it observed activities consistent with the transfer of major reactor components into the reactor containment building. After mid-October 2018, the IAEA no longer observed activities consistent with the fabrication of major reactor components in the ELWR construction yard. It did continue to observe movement of construction vehicles near the reactor containment

building, turbine hall and electrical switchyard, which continued in the reporting period. The IAEA has not observed any indications of operations at the reactor, although there was an indication of a test of parts of the cooling infrastructure in March 2019.

If successfully completed and operated, the ELWR could provide North Korea with a relatively small source of electricity. It may be intended to provide North Korea with a civilian justification to possess uranium enrichment technology that could be used to produce fissile material for nuclear weapons.

From September to November of 2018, the IAEA observed additional activities near the Kuryong River, which may have been related to changes to the cooling system for the ELWR under construction and/or the 5MW(e) plutonium producing reactor at Yongbyon.

In August 2019, the IAEA reported that there were indications of ongoing mining, milling and concentration activities at locations previously declared as the Pyongsan uranium mine and Pyongsan uranium concentration plant.

The United States believes there is a possibility of additional unidentified nuclear facilities in North Korea.

Additional information is provided in the higher classification Annex.

Testing

North Korea has not conducted a nuclear test since its sixth nuclear test on September 3, 2017, which it claimed was of a “two-stage thermo-nuclear weapon.” On January 1, 2018, Kim Jong Un announced that during 2017 North Korea had accomplished the goal of “perfecting the national nuclear forces.”

Kim Jong Un announced on April 20, 2018, that North Korea would discontinue all nuclear and ICBM tests and dismantle the P’unggye Nuclear Test Site. North Korea announced on May 25, 2018, that the P’unggye Nuclear Test Site had been “completely dismantled.” In a separate statement, the Nuclear Weapons Institute of the DPRK noted that “dismantling 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.” Foreign journalists were invited to witness the “dismantlement” during a ceremony on May 24; however, international inspectors were not invited to verify the process, so the United States is unable to confirm the extent to which the site has been dismantled. Although Kim Jong Un committed to allow a visit by U.S. experts to the P’unggye Nuclear Test Site, this visit has yet to occur.

The results of dismantlement activities at P’unggye Nuclear Test Site on May 24, 2018, are almost certainly reversible.

It is also possible that North Korea could develop another nuclear test site, if it chose to do so.

Additional information is provided in higher classification Annex.

ANALYSIS OF COMPLIANCE CONCERNS

Under the 2005 Joint Statement of the Six-Party Talks, North Korea committed to abandoning all nuclear weapons and existing nuclear programs, and to returning at an early date to the NPT and IAEA safeguards. North Korea signed a Joint Statement at the June 2018 Singapore summit in which, among other things, it committed “to work toward complete denuclearization of the Korean Peninsula.” Since then, North Korea has not conducted additional nuclear tests and announced that the P’unggye Nuclear Test Site had been completely dismantled. At the end of December 2019, Kim Jong Un said that the DPRK no longer felt bound by its self-imposed moratorium on testing nuclear weapons.

North Korea was in violation of its obligations under Articles II and III of the NPT and its CSA before it announced its withdrawal from the NPT in 2003. Throughout 2019, the United States continued to have significant concerns regarding North Korea’s nuclear weapons program and its continued production of fissile material.

North Korea’s failure to permit qualified international inspectors to observe and verify the dismantlement of the the P’unggye Nuclear Test Site calls into question whether North Korea will forego further nuclear explosive tests.

EFFORTS TO RESOLVE COMPLIANCE CONCERNS AND NEXT STEPS

Following intensive diplomatic engagement and a thaw in relations between North and South Korea, President Donald J. Trump and Chairman Kim Jong Un held a first, historic summit in Singapore on June 12, 2018, and signed a joint statement in which Chairman Kim committed to work toward complete denuclearization of the Korean Peninsula. Since the summit, the United States has continued to engage with North Korea to work toward implementation of the commitments made in Singapore. On September 19, 2018, South Korean President Moon Jae-in and Kim Jong Un signed the Pyongyang Joint Declaration, in which North Korea expressed its willingness to take additional steps, including the permanent dismantlement of its Yongbyon nuclear facility if the United States “takes corresponding measures in accordance with the spirit of the June 12 U.S.-DPRK Joint Statement.” North Korea also committed in the Joint Declaration to “permanently dismantle the Dongchang-ri missile engine test site and launch platform under the observation of experts from relevant countries.”

President Donald J. Trump and Chairman Kim Jong Un met a second time in Hanoi, Vietnam, February 27-28, 2019. While no deal was reached, detailed positions were exchanged. The United States communicated to its DPRK counterparts that the United States is prepared to pursue – simultaneously and in parallel – all of the commitments made in the Singapore Joint Statement, including transforming relations, building a lasting and stable peace, and achieving the complete denuclearization of the Korean Peninsula. The United States is also prepared to explore how to mobilize investment, improve infrastructure, enhance food security, and more, provided the DPRK fulfills its denuclearization commitments.

President Trump and Kim Jong Un briefly met a third time on June 30, 2019, at the Demilitarized Zone, where President Trump became the first sitting U.S. President to set foot on North Korean soil. The United States remains ready to engage North Korea in a constructive negotiation; however, until final, fully verified denuclearization is achieved, the international community remains united. UN and U.S. sanctions will remain in place and will be fully enforced.

During the reporting period, in several multilateral fora, including the UN General Assembly, the UN Security Council, the Asia-Europe Meeting, the East Asia Summit, the IAEA General Conference, and the NPT Preparatory Committee, countries from every region of the world recognized the unacceptable threat North Korea's nuclear weapons program poses to international peace and security. The United States continues to work with a broad range of partners and the international community on the need for continued pressure on North Korea – and the need for continued vigilance against its proliferation activities worldwide – in order to impede its ability to sustain and advance its unlawful nuclear and ballistic missile programs and to incentivize negotiating progress. The United States has also taken enforcement action, including U.S. Treasury sanctions designations, against those involved in UN and U.S. sanctions evasion.

The United States remains engaged with the IAEA and welcomes the IAEA's efforts to enhance readiness to resume monitoring and verification activities in North Korea at the appropriate time.

The United States continues to closely monitor North Korea's nuclear activities. The final, fully verified denuclearization of North Korea remains the overriding U.S. objective, and the United States remains committed to continued diplomatic negotiations with North Korea toward that goal.

ISLAMIC REPUBLIC OF IRAN (IRAN)

FINDING

Iran's efforts to retain files, documents, and personnel related to its pre-2004 nuclear weapons program – as revealed in the atomic archive acquired by Israel in 2018 – suggest that Iran may have maintained this information at least in part to preserve technical expertise relevant to a nuclear weapons capability, and potentially to aid in any future effort to pursue nuclear weapons again, if a decision were made to do so.

In November 2019, the Acting IAEA Director General (DG) reported the detection by IAEA inspectors of particles of chemically processed uranium at an undeclared location in Iran and noted that this indicates the possibility of undeclared nuclear material in Iran. The IAEA continues to engage Iran regarding an explanation for the presence of these uranium particles that is consistent with the IAEA's technical analysis. Iran's intentional failure to declare nuclear material subject to IAEA safeguards would constitute a clear violation of Iran's CSA required by the NPT and would constitute a violation of Article III of the NPT itself. Until Iran provides a full and complete explanation for the presence of this man-made uranium, the IAEA's safeguards concerns are a matter of current proliferation concern. (Following the reporting period,

additional concerns arose with regard to Iran's compliance with its safeguards obligations and commitments. In March 2020, the IAEA DG reported that Iran had failed to provide inspector access at two locations not declared by Iran, and did not substantively respond to the IAEA's requests for clarification regarding possible undeclared nuclear material or activities at those locations and a third, unspecified location.)

During the reporting period, Iran progressively expanded its uranium enrichment activities and stockpile of enriched uranium, key factors in determining the amount of time required to produce enough fissile material for a nuclear weapon or device, should Iran decide to pursue nuclear weapons.

If Iran were to manufacture or otherwise acquire a nuclear weapon, such actions would violate its obligations under Article II of the NPT.

CONDUCT GIVING RISE TO COMPLIANCE/ADHERENCE CONCERNS

History of Past NPT Violations

Iran became a State Party to the NPT in 1970, and its CSA entered into force in 1974. Iran signed but did not ratify an AP to its CSA in 2003 and voluntarily implemented AP measures from late 2003 to early 2006, when it stopped such implementation. Since January 2016, Iran has been provisionally applying its AP pending its entry into force, as it committed to do under the Joint Comprehensive Plan of Action (JCPOA). Iran's compliance with the NPT was first addressed in the 1992 Report. The United States found Iran in noncompliance with its CSA, as well as with Articles II and III of the NPT, in the 2005 Report.

Activities in connection with Iran's past violations of its obligations under Articles II and III of the NPT and its CSA began in the early 1980s. In 2002, an Iranian opposition group publicly revealed covert nuclear facilities under construction at Natanz and Arak that Iran had failed to declare to the IAEA. Reports from the resulting IAEA investigation led the IAEA Board of Governors (BOG) to declare Iran in noncompliance with its CSA in 2005 and to report the case to the United Nations Security Council (UNSC) in 2006. In 2009, Iran announced another previously undeclared uranium enrichment facility under construction near the city of Qom, Iran, after the United States, the UK, and France publicly disclosed the facility's existence. From 2006 to 2011, the Security Council adopted multiple resolutions on Iran, five of which imposed binding obligations under Chapter VII of the UN Charter (UN Security Council Resolutions 1696, 1737, 1747, 1803, and 1929).

From 2006-2013, as detailed in previous Compliance Reports as well as multiple IAEA reports, Iran continued to perform uranium enrichment-related and heavy-water-related activities in contravention of both UNSC and IAEA BOG resolutions, including: research and development work on advanced centrifuges; enrichment of uranium up to nearly 20 percent at both the Natanz Pilot Fuel Enrichment Plant and the Fordow Fuel Enrichment Plant; construction of parts of the IR-40 heavy water-moderated research reactor at Arak, which was suited to weapons grade plutonium production; and operation of its heavy water production plant at Arak. During this timeframe, Iran did not fully cooperate with the IAEA in regard to its declared facilities. In

particular, as noted in previous versions of this report, Iran did not provide design information or report design changes in advance of any action taken to modify existing facilities or construct new ones, as required by modified Code 3.1 of the Subsidiary Arrangements to Iran's CSA.

From 2008 through 2014, the IAEA reported ongoing concerns about the possible existence in Iran of undeclared nuclear-related activities involving military-related organizations. The Annex to the November 2011 report of the IAEA DG detailed the basis for concerns regarding what the IAEA then called the possible military dimensions (PMD) of Iran's nuclear program. The report stated that, according to credible reports from multiple sources, Iran had a structured military program through 2003, including activities related to the development of a nuclear payload for a missile, and that some nuclear weapon-related activities may have continued after 2003.

On December 2, 2015, the IAEA issued its Final Assessment on Past and Present Outstanding Issues regarding Iran's Nuclear Program. The report noted areas where the IAEA did not receive sufficient information in response to its inquiries, or where other information available to the IAEA did not support Iran's statements.

The disclosure in 2018 by Israel of documents from the Amad Plan – Iran's prior nuclear weapons program – raises additional questions about Iran's concealment of critical information about its past nuclear weapons activities from the IAEA.

In September 2018, Israeli Prime Minister Netanyahu publicly announced at the UN General Assembly that Iran had maintained a warehouse facility located in Tehran thought to contain additional equipment and materials associated with Iran's past nuclear weapons program. Netanyahu claimed that the warehouse once contained 15 kilograms of nuclear material that had since been removed.

The IAEA continues to investigate the source of the chemically processed uranium detected at a site not disclosed to the IAEA and whether it originated at an undeclared site. Iran also took steps to keep former weapons program scientists employed – *e.g.*, at Iran's Defense Research and Innovation Organization (SPND), an organization subordinate to the Iranian Ministry of Defense and Armed Forces Logistics that conducts military research and development – on weaponization-relevant dual-use technical activities (and under the continued leadership of the former head of that program, Moshen Fakrizadeh), which suggests that Iran preserved this information at least in part potentially to aid in any future nuclear weapons development work in the event that a decision were made to resume such work.

Activities of Concern During the Reporting Period

Steps to Expand Nuclear Program Beyond Accepted Restrictions:

Iranian President Rouhani announced on May 8, 2019, one year following President Trump's announcement of the cessation of the United States' participation in the JCPOA, that Iran would begin scaling back its performance of key nuclear commitments under the deal if Iranian demands were not met. Iran then began exceeding key enrichment-related restrictions in the

JCPOA on a step-by-step basis, with an announcement of a new step approximately every 60 days.

In mid-June, Iran publicly announced it would exceed the low enriched uranium stockpile volume limit on June 27 and also previewed intent to enrich above the 3.67 percent level. In early July, the IAEA Acting DG issued two reports confirming that Iran had exceeded JCPOA limits on both the volume of its enriched uranium stockpile and the level of uranium enrichment. The IAEA first reported that Iran had exceeded the 300 kg limit on the amount of low enriched uranium hexafluoride (UF₆) (or the equivalent in different chemical forms, corresponding to 202.8 kg of uranium (U)) it was allowed to stockpile, noting the stockpile had reached 205.0 kg U as of July 1. One week later, the IAEA reported that Iran had recently provided updated design information for the Fuel Enrichment Plant (FEP) at Natanz to reflect enrichment up to five percent, with the operator estimating the UF₆ product enrichment level was about 4.5 percent. The IAEA used its online enrichment monitors to verify that the enrichment level of the product at the FEP exceeded the 3.67 percent enrichment limit as of July 8, 60 days after Iran's announcement of its intent to begin scaling back implementation of the JCPOA limits.

As of November 8 Iran's enriched uranium stockpile had grown to 372.3 kg U, comprising 212.6 kg U enriched up to 3.67 percent that had been produced prior to July 8 and 159.7 kg U enriched up to 4.5 percent that had been produced after July 8.

In early September, Iran announced that its next step to scale back implementation of its JCPOA commitments would involve lifting all limits on its development of more advanced centrifuges for uranium enrichment. President Rouhani stated that "all of our commitments for research and development under the JCPOA will be completely removed," and announced new advance centrifuge research and development (R&D) activities, along with the production and testing of new models of centrifuges for potentially greater efficiency.

Following this announcement, the IAEA reported that Iran had begun installing advanced centrifuges at the Pilot Fuel Enrichment Plant at Natanz (PFEP), verifying that 22 IR-4, one IR-5, 30 IR-6, and three IR-6s advanced centrifuge machines had been installed. The IAEA also reported that Iran intended to re-install two 164-machine cascades of the IR-4 and IR-2m models that had previously been removed under the deal. Iran also informed the IAEA that it would modify the centrifuge cascade header connections in such a way that the product and the tails would be collected separately from the cascades in four R&D lines (nos. 2, 3, 4 and 5) at the PFEP. On September 8, 2019, the IAEA verified that Iran had modified the header connections for R&D lines 2 and 3 and that it was reinstalling the piping in R&D lines 4 and 5.

Later in September, the IAEA issued another report verifying that Iran was accumulating the enriched uranium produced by the newly installed advanced centrifuges at the PFEP, despite Iran's JCPOA commitment not to do so. The IAEA also noted that Iran had informed the Agency of its intent to install additional new cascades at the PFEP (comprising 20 IR-2m, 10 IR-5, 20 IR-6s, and 164 IR-6 machines) and reported that Iran had started manufacturing centrifuge rotor tubes using carbon fiber that was not subject to continuous IAEA containment and surveillance measures—another action that exceeded Iran's JCPOA centrifuge R&D-related commitments.

In early November, Iran announced that its next step to scale back implementation of the JCPOA would involve injecting uranium gas into more than 1,000 centrifuges at its Fordow enrichment facility to produce enriched uranium. Under the JCPOA, Iran is allowed to maintain 1,044 IR-1 centrifuges at Fordow, but it is restricted from enriching uranium or bringing nuclear material to the site for 15 years. The Fordow facility, revealed as a covert enrichment facility while still under construction in 2009, is a fortified underground bunker near the Iranian city of Qom. Iranian news agencies have reported that the Fordow facility is ready for 20 percent uranium enrichment with an increased number of centrifuges, and that the AEOI is capable of increasing the level of uranium enrichment capacity to 20,000 separative work units (SWUs) within a month. Shortly thereafter, the IAEA reported a cylinder of natural UF₆ had been transferred to the Fordow facility and had been connected to an existing cascade of IR-1 centrifuges.

In November 2019, the IAEA reported on additional activities and developments. In October and November Iran had completed installation of a number of IR-2m, IR-4, IR-5, IR-6, and IR-8 centrifuges at the PFEP at Natanz, and intended to produce more enriched uranium using these machines once these cascades were completed. Additionally, Iran informed the IAEA that it was installing additional advanced centrifuges, including the IR-7, IR-8B, IR-9, IR-s, and IR-6s at the PFEP, and that it was planning to test a new generation of centrifuges at a new location. Both of these activities exceed JCPOA limits without prior approval – machines cannot be installed without advance permission, and testing is only allowed at specific sites. The addition of these centrifuges enhance Iran's ability to enrich uranium.

Iran's expansion of uranium enrichment activities, including changes to centrifuge cascade configuration at the Natanz fuel enrichment plant and installation of advanced, more efficient centrifuges, allow Iran to either enrich more uranium, or enrich it faster and to higher levels. These actions and activities move Iran closer to having the materials necessary to produce a nuclear weapon in the event that there is a future decision to pursue nuclear weapons production.

Iran's announcements and actions are likely timed to receive as much international attention as possible, but so far have likely been paced to avoid triggering European redlines.

Iranian officials have stated that their actions are reversible if the European JCPOA participants meet their economic demands or the United States ends its sanctions; however, the experience Iran gains from advanced centrifuge R&D work likely represents irreversible knowledge that could ultimately shorten Iran's breakout time to a nuclear weapon if it decided to pursue one.

November 2019 IAEA Sessions

In early 2019, traces of chemically processed uranium were found in environmental samples collected during the IAEA inspection at a location not declared to the Agency.

On November 7, 2019, the IAEA BOG met in special session at the request of the Acting DG to discuss two urgent issues regarding Iran's implementation of its NPT-mandated safeguards agreement. The first issue involved the IAEA's detection of particles of chemically processed uranium at an undeclared location in Iran. The second issue was Iran's late October temporary detention of an IAEA inspector. The Acting IAEA DG determined the issues were sufficiently

important to be brought to the IAEA BOG in special session and said that he would keep the Board informed on these matters.

The IAEA Acting DG's report on November 11 contains for the first time an explicit written reference to the detection by the IAEA of chemically processed uranium particles at an undeclared site in Iran.

The IAEA's final quarterly report of 2019 made public by the BOG, notes that "the Agency has detected natural uranium particles of anthropogenic origin at a location in Iran not declared to the IAEA. It is essential for Iran to continue interactions with the Agency to resolve the matter as soon as possible." (Nor was this the only problem that apparently arose with regard to Iran's compliance with its safeguards obligations and commitments during the reporting period. In March 2020, the IAEA DG made it public that problems of Iranian denial of inspector access had arisen at no fewer than two locations.)

The BOG summary of the November 21 IAEA BOG meeting noted that several members "urged the Secretariat to keep the Board informed of any developments regarding Iran's cooperation with the Agency," setting up the next IAEA DG to continue reporting on safeguards topics.

Additional information is provided in the higher classification Annex.

ANALYSIS OF COMPLIANCE/ADHERENCE QUESTIONS

During the reporting period, the United States continued to assess that Iran is not currently engaged in key activities associated with the design and development of a nuclear weapon.

As noted in the IAEA's December 2015 Final Assessment on Past and Present Outstanding Issues regarding Iran's Nuclear Program, however, Iran has yet to answer significant questions regarding its past nuclear weapons program. Given Iran's history of denial and deception, the possibility of undeclared nuclear material and activities in Iran as reported in November 2019 by the Acting IAEA DG raises serious concerns regarding Iran's compliance with its IAEA safeguards obligations and Article III of the NPT.

In addition, Iran's retention of files and information dating from its pre-2004 nuclear weapons program, its efforts to conceal this information from the international community, and its reassignment of key Amad Plan-era scientists and officials into a new organizational structure affiliated with Iranian military entities and under the Amad Plan's former leader suggest that Iran undertook these efforts at least in part to preserve technical expertise relevant to a nuclear weapons capability, and potentially to aid in any future efforts to pursue nuclear weapons, if a decision were made to do so. If Iran were to manufacture or otherwise acquire a nuclear weapon, it would be in violation of its obligations under Article II of the NPT.

The United States also has concerns that the steps Iran has been taking to expand its uranium enrichment program have been increasing its knowledge base. The experience Iran gains from its capacity to manufacture advanced centrifuges likely represents irreversible knowledge that could ultimately shorten Iran's breakout time to a nuclear weapon if it decided to pursue one.

In light of the new concerns regarding Iran's safeguards cooperation raised by the IAEA in the last five months of the reporting period, we have underscored that Iran must immediately provide the IAEA nothing short of full cooperation and comply with its nuclear safeguards obligations. Secretary of State Pompeo has made clear that as part of any new and comprehensive deal, Iran must stop denying its past nuclear weapons work and address why it retained records from its past nuclear weapons program. In September 2019, the Acting IAEA DG stressed that "time is of the essence" for Iran to provide full cooperation.

The IAEA's announcement of potential undeclared nuclear materials in Iran at the Special Board meeting in November raises the possibility that such material could still be present in Iran today, outside safeguards monitoring. The IAEA continues to engage Iran regarding a credible answer to the question of where the particles detected by the IAEA came from, and where the material and equipment they came from resides today. This raises significant questions of whether Iran is compliance with its safeguards obligations *today*.

The United States has made clear that Iran must comply fully with its nuclear safeguards obligations, without any further delay, denial, or deception by Iran that inhibits the IAEA's essential nuclear safeguards verification work.

Iran's intentional failure to declare nuclear material would constitute a clear violation of Iran's CSA required by the NPT, and a violation of Article III of the NPT itself. Iran's level of cooperation with IAEA monitoring and verification activities, including in connection with the IAEA's efforts to evaluate safeguards-relevant information in the Amad Plan documents acquired by Israel, will be important factors in assessing Iran's compliance with its NPT and safeguards obligations in future editions of this Report.

EFFORTS TO RESOLVE COMPLIANCE QUESTIONS AND NEXT STEPS

The United States remains committed to denying Iran all pathways to a nuclear weapon. The United States has underscored that Iran's actions to expand its uranium enrichment program are unacceptable and have highlighted the continued challenge Iran poses to international peace and security.

The United States will continue to encourage the international community to provide its full support to the IAEA, as it continues to fulfill its critical mandate to verify the non-diversion of nuclear energy to nuclear weapons or other nuclear explosive devices. The United States has made clear that Iran must cooperate fully and promptly with the IAEA on all such issues.

In November, the issue of detection of particles of chemically processed uranium at an undeclared location was made public in detail, and the continued importance of the issue thereafter was clearly expressed by the Board.

In addition, the United States will continue to review all relevant information regarding possible undeclared nuclear material and related activities in Iran, as well as any new information regarding potential nuclear weapon-related research, development, and testing activities in Iran,

including relevant procurement-related information, for signs that Iran has resumed, or intends to resume, any nuclear weapons development effort.

The United States is applying maximum pressure on the Iranian regime to address the totality of its malign behavior, including with regard to its nuclear program. U.S. sanctions since November 2018 have targeted critical sectors of Iran's economy, such as its energy, shipping, and shipbuilding sectors, as well as the provision of insurance to designated persons or for sanctionable activities, and transactions involving designated Iranian financial institutions.

Secretary Pompeo has made clear that the objective of sanctions and other pressures upon Iran is to incentivize the Iranian regime to accept a new, more comprehensive, and more enduring deal that would address the full range of Iran's malign activities.

On March 22, 2019, the U.S. Departments of State and Treasury designated 31 individuals and entities linked to SPND, including eight scientists and technical experts linked to the Amad Plan, pursuant to Executive Order (E.O.) 13382 of August 29, 2014, which provides authority to impose sanctions on proliferators of weapons of mass destruction (WMD) and their means of delivery, and on their supporters. The designations underscore that unanswered questions remain regarding Iran's undisclosed past nuclear-related activities under the Amad Plan, including activities related to the development of a nuclear payload for a missile.

The United States continues efforts to detect and thwart Iran's illicit procurement activities related to nuclear, missile, or conventional weapons programs.

The United Nations Secretariat also continues to report on nuclear-related transfers to Iran notified by UN Member States to be in violation of UN Security Council Resolution 2231 (specifically, paragraph 2 of Annex B) – most recently, a titanium rod, an inductively-coupled plasma mass spectrometer, carbon fiber, and aluminum alloys.

The IAEA continues to monitor and verify Iran's compliance with its obligations under its CSA and AP, as well as Iran's adherence to its JCPOA commitments. The United States will continue to closely monitor Iran's level of cooperation with the IAEA, including its cooperation with IAEA efforts to investigate the source of chemically processed uranium detected at an undeclared location in Iran.

SYRIAN ARAB REPUBLIC (SYRIA)

FINDING

The Syrian Arab Republic (Syria) remains in violation of its obligations under Article III of the NPT and its CSA with the IAEA. Syria failed to declare and provide design information to the IAEA for the construction of a nuclear reactor at Al Kibar (also known as Dair Alzour), which was destroyed in an Israeli airstrike in September of 2007. Syria's clandestine construction of the Al Kibar reactor and its continued denial of IAEA requests for access and information concerning the Al Kibar reactor and information concerning three reported functionally related locations are clear violations of its obligations under its CSA, including with respect to modified

Code 3.1 of the Subsidiary Arrangements to its CSA. To the extent that these activities were undertaken in connection with an effort to develop nuclear weapons, Syria may have also violated Article II of the NPT. Given the IAEA's finding of particles of chemically processed uranium compounds at the site, the United States remains concerned regarding whether any undeclared nuclear material might exist in Syria.

CONDUCT GIVING RISE TO COMPLIANCE CONCERNS

Syria became a State Party to the NPT in 1968, and its CSA entered into force in 1992. It had not signed the AP as of the end of 2019.

Al Kibar Site. Until September 2007, Syria was building an undeclared nuclear reactor at Al Kibar (in the province of Dair Alzour) in Syria's eastern desert. North Korea assisted Syria with its construction.

In May 2011, the IAEA Director General (DG) released a report assessing that the facility at Al Kibar was "very likely" a nuclear reactor that should have been declared to the Agency pursuant to Articles 41 and 42 of Syria's CSA and Code 3.1 of the Subsidiary Arrangements thereto. The IAEA based its assessment on a broad spectrum of factual information, including environmental samples taken during the Agency's visit to the site in June 2008 (which contained particles of anthropogenic natural uranium), as well as commercial satellite and radar imagery, procurement information, and information provided by IAEA Member States. The report also noted that the reactor had features comparable to the gas-cooled, graphite-moderated reactor at Yongbyon in the DPRK.

The 2007 Israeli air strike destroyed the reactor before it could become operational. Following the reactor's destruction, Syria went to great lengths to clean up the site and to destroy evidence of what had previously existed at the site. By December 2007, Syria had constructed a large building directly over the location where the reactor had once stood.

During the reporting period, the IAEA DG issued a written report on Syria and provided updates at IAEA Board of Governors (BOG) meetings confirming that Syria had not provided any new information that would have an impact on the Agency's assessment that the facility at Dair Alzour was a nuclear reactor that should have been declared to the Agency. The IAEA DG continued to call on Syria to provide all information and access necessary for the IAEA to address all outstanding issues related to the site, including information on additional sites having a possible functional relationship to the Al Kibar reactor.

While continuing to deny the IAEA access to other requested sites, Syria permitted the IAEA to carry out a physical inventory verification (PIV) at Syria's declared miniature neutron source reactor (MNSR) in Damascus, Syria's only operational research reactor, on March 27, 2019.

The IAEA also carried out a PIV at a location outside facilities on March 28, 2019.

Additional information is provided in the higher classification Annex.

ANALYSIS OF COMPLIANCE CONCERNS

Article 41 of Syria's CSA with the IAEA specifies that "the provision of design information in respect of the new facilities ... shall be provided as early as possible before nuclear material is introduced into a new facility." Article 42 states, among other requirements, that "design information to be provided to the Agency shall include, in respect of each facility, when applicable: (a) the identification of the facility, stating its general character, purpose, nominal capacity and geographic location, and the name and address to be used for routine business purposes" The NPT states in Article III(1) that "[t]he safeguards required by this Article shall be applied on all source or special fissionable material in all peaceful nuclear activities within the territory of such State, under its jurisdiction, or carried out under its control anywhere."

On May 24, 2011, the IAEA DG released a report assessing that the building destroyed at Al Kibar was "very likely" a nuclear reactor that should have been declared by Syria pursuant to Articles 41 and 42 of its CSA and modified Code 3.1 of the Subsidiary Arrangements thereto. The United States agreed with this finding. In addition, as noted above, the United States considers Syria to be in violation of its obligations under the NPT.

The ongoing civil war and security situation in Syria do not affect this finding. The IAEA DG's specific, repeated requests to Syria for additional information and access have consistently been met with Syrian denials, rather than provision of the information requested and consultations on how it would provide the requested access when conditions allow.

EFFORTS TO RESOLVE COMPLIANCE CONCERNS AND NEXT STEPS

On June 9, 2011, the IAEA BOG adopted a resolution finding Syria in noncompliance with its CSA for the undeclared construction of a nuclear reactor at Dair Alzour, and called for Syria to urgently remedy its noncompliance and provide the IAEA with access to all information, sites, material, and persons necessary to resolve all questions regarding the exclusively peaceful nature of Syria's nuclear program. The Board also called upon Syria to sign and bring into force an AP to its CSA.

The IAEA BOG resolution also referred the matter to the United Nations Security Council (UNSC). Following the IAEA's referral, the UNSC met in 2011 to discuss the matter, but took no action. The UNSC has not addressed Syria's nuclear activities subsequently. For the reporting period the United States has continued to ensure that the issue remains on the IAEA BOG's agenda. For 2019, the IAEA continued to urge Syria to cooperate fully with the IAEA in connection with all unresolved issues. The United States did not hold any bilateral discussions with Syria on its nuclear program in 2019.

At IAEA BOG meetings during the reporting period, the United States and likeminded partners have regularly reiterated the need for Syria to urgently cooperate with the IAEA to remedy its longstanding NPT safeguards noncompliance, and called for continued reporting from the DG and maintaining the item on the agenda for each quarterly BOG meeting. The United States also raised the issue of Syria's NPT noncompliance in national statements at the 2018 and 2019 NPT

Preparatory Committee meeting. At the 2019 NPT PrepCom meetings, the United States and 51 co-sponsors issues a joint statement highlighting Syria's long-standing noncompliance with its CSA and NPT Article III obligations and calling on Syria to cooperate with the IAEA to resolve these issues.

For 2019, the IAEA DG confirmed that Syria has not provided any new substantive information or access to the IAEA regarding the al Kibar reactor or related sites, and continued to urge Syria to cooperate fully with the IAEA in connection with all unresolved issues.

The United States will continue to support the IAEA's investigation of Syria's undeclared nuclear activities, including the IAEA's requests for greater Syrian transparency, and to work to ensure that the BOG and DG remain seized of the issue until Syria has fully cooperated with the IAEA to address all outstanding issues.

THRESHOLD TEST BAN TREATY (TTBT)

The Treaty Between the United States of America and the Union of Soviet Socialist Republics on the Limitation of Underground Nuclear Weapon Tests, also known as the Threshold Test Ban Treaty (TTBT), was signed in 1974, with a Protocol signed in 1990. The Treaty entered into force in 1990. It establishes a nuclear “threshold” by prohibiting each Party from undertaking underground nuclear weapon tests having a yield exceeding 150 kilotons at any place under its jurisdiction or control, and it provides for notification and verification of testing activities.

FINDING

The United States assesses that Russia has conducted nuclear weapons-related experiments that have created nuclear yield. The United States does not know how many, if any, supercritical or self-sustaining nuclear experiments Russia conducted in 2019. Russia may be testing in a manner that releases nuclear energy from an explosive canister, which raises compliance concerns with Russia’s TTBT notification obligation. Russian intent to carry out at its test site an underground nuclear weapons related experiment that is supercritical (creates a self-sustaining chain reaction) and that is anticipated to result in a release of nuclear energy through a physical breach of the explosive canister, regardless of the magnitude of its planned nuclear yield, would require an affirmative TTBT notification to the United States. A Russian nuclear test notification would alert the United States of the forthcoming opportunity to conduct specified verification activities in accordance with the TTBT Protocol.

A failure on the part of Russia to provide an accurate annual notification of planned nuclear tests, as defined in the treaty and set out above, for the following calendar year, and to provide timely revised notifications as may be required, would prevent the United States from exercising its verification rights, as specified in paragraph 2(b) of Section III of the Protocol. Based on available information, Russian activities during the 1995-2019 timeframe raise concerns about Russia’s compliance with its TTBT notification obligation.

CONDUCT GIVING RISE TO COMPLIANCE CONCERNS

Russia declared a moratorium on nuclear weapon testing in 1991. In its annual test notifications submitted pursuant to paragraph 2 of Section IV of the Protocol, including the notification for calendar year 2019, Russia indicated that in the following calendar year it would not conduct any underground nuclear weapons tests within the meaning of the TTBT. However, information may indicate otherwise. The United States assesses that Russia has conducted nuclear weapons-related experiments that have created nuclear yield. The United States does not know how many, if any, supercritical or self-sustaining nuclear experiments Russia conducted in 2019. Russia may be testing in a manner that releases nuclear energy from an explosive canister.

Additional information is provided in the higher classification Annex.

ANALYSIS OF COMPLIANCE CONCERNS

Under Section IV, paragraph 2 of the June 1990 Protocol to the TTBT, the Russian Federation (Russia) is required, by not later than June 1 of each year, to inform the United States of the

number of underground nuclear weapons tests by specified category that Russia intends to conduct in the following calendar year. For purposes of the TTBT, an “underground nuclear weapon test” means either a single underground nuclear explosion conducted at a test site, or two or more underground nuclear explosions conducted at a test site within an area delineated by a circle having a diameter of two kilometers, conducted within a total period of time of 0.1 second, and whose combined yield is less than 150 kilotons. The TTBT Protocol defines the term “explosion” as “the release of nuclear energy from an explosive canister.” The term “explosive canister” is defined as “with respect to every explosion, the container or covering for one or more nuclear explosives.” The United States interprets “the release of nuclear energy from an explosive canister” to mean the release of nuclear energy resulting from a physical breach of the explosive canister.

Whether there is a compliance concern with respect to the activities at the declared Russian nuclear test site depends in the first instance upon the nature of the activity conducted. Subcritical nuclear experiments are not prohibited by the TTBT and are never required to be reported, based on the TTBT’s definition of a “test.” Supercritical nuclear weapons-related experiments *per se* also are not prohibited by the TTBT, but would trigger TTBT notification obligations if such a supercritical tests were anticipated to result in the release of nuclear energy through a physical breach of the explosive canister.

Russian intent to carry out at its test site an underground nuclear weapons related experiment that is supercritical (creates a self-sustaining chain reaction) and that is anticipated to result in a release of nuclear energy through a physical breach of the explosive canister, regardless of the magnitude of its planned nuclear yield, would be sufficient to require an affirmative TTBT notification. A Russian nuclear test notification would alert the United States of the forthcoming opportunity to conduct specified verification activities in accordance with the TTBT Protocol. A failure on the part of Russia to provide an accurate annual notification of planned nuclear tests, as defined above, for the following calendar year, and to provide timely revised notifications as may be required, would prevent the United States from exercising its verification rights, as specified in paragraph 2(b) of Section III of the Protocol.

EFFORTS TO RESOLVE COMPLIANCE CONCERNS AND NEXT STEPS

Efforts have been made recently to discuss nuclear testing definitions in a P-5 context; so far they have been unsuccessful. Nonetheless, the United States will continue to monitor Russian activities at Novaya Zemlya and hold Russia accountable to its TTBT obligations. The United States will pursue senior level bilateral dialogues with Russia on test site transparency and other confidence building measures. U.S. concerns could be mitigated by greater transparency.

NUCLEAR TESTING MORATORIA AS INTERPRETED IN ACCORDANCE WITH THE U.S. “ZERO-YIELD” STANDARD

By September 1996, each of the nuclear-weapons States (NWS) under the NPT – China, France, Russia, the United Kingdom, and the United States – had unilaterally declared voluntary nuclear testing moratoria, which are not legally binding. Although the United States is not a participant in other countries’ testing moratoria, these unilateral commitments are included in the Compliance Report as a matter of discretion.

A key challenge in interpreting adherence to these moratoria is determining what each moratorium actually means. Dating back to 1993, the United States has defined its *own* nuclear testing moratorium as a commitment not to conduct “nuclear explosive tests,” and from August 1995 onward the United States made clear that it adheres to a “zero-yield” standard. In U.S. usage, this means that the moratorium covers any nuclear explosive test that is supercritical – that is, which produces a self-sustaining chain reaction. The United Kingdom and France apply the same standard in their respective testing moratoria.

The United States promoted its vision of a “zero-yield” approach in negotiations on the Comprehensive Nuclear Test-Ban Treaty (CTBT), beginning with President Clinton’s public announcement to that effect in August 1995. While other negotiating States, including every nuclear-weapons State (NWS), publicly announced their concurrence that the treaty would be “zero-yield,” no definition of the term “zero-yield” was written into the treaty or mutually defined in writing elsewhere. The final treaty text banned all “nuclear explosions,” but it did not provide a definition of that term.

Therefore, at the conclusion of the CTBT negotiations, all parties understood that the scope of the CTBT was “zero-yield.” Official statements from senior officials of all the NWS, including Russia and China, expressed these states’ interpretation that CTBT’s scope was “zero-yield.” What precisely this meant, however, was less clear, since no written agreement on the *definition* of “zero-yield” was reached.

This Report does not assess any country’s compliance with the CTBT, as it has never entered into force and the United States has no obligations under it. After the CTBT opened for signature, both China and Russia signed the treaty in 1996, and Russia later ratified the treaty in 2000. The United States signed the treaty in 1996 but did not ratify it. (Indeed, after the CTBT was presented to the U.S. Senate for advice and consent as part of the ratification process, the Senate voted in 1999 to reject it.) The United States made clear in the 2018 Nuclear Posture Review and elsewhere that it does not intend to become a party to the CTBT.

Nevertheless, the degree to which the other NWS follow this U.S. interpretation – *i.e.*, “zero-yield” as defined to mean avoiding the production of a self-sustaining chain reaction – is important to assessing the other NWS’ adherence to their own nuclear testing moratoria. Any divergences between NWS interpretations or behavior in this regard could also have significant implications for U.S. national security as well as for international peace and security – especially over time – if one or more NWS were willing to conduct nuclear testing activities that other NWS felt themselves to be precluded from undertaking. Particularly if such differences were

concealed, divergent NWS interpretation or implementation of their respective moratoria could therefore serve as a means by which some NWS gain progressive strategic advantage over NWS having more restrictive interpretations or implementation.

The question of NWS' adherence to their moratoria is also important to assessing how those countries would be likely to behave under the CTBT, were that treaty ever to enter into force. If a country feels free to engage in very-low-yield testing under its moratorium, for instance, there is a risk that it might behave similarly under the treaty. (A country might do such tests under a moratorium because it genuinely interpreted that moratorium in a different way than the United States interprets its own, or it might undertake such activity simply out of dishonesty – and in the hope that other powers' moratoria will prevent them from following suit.) Given the CTBT's lack of any written, mutually agreed definition of a “nuclear weapon test explosion” or of the “zero-yield” standard, and the possibility of conducting low-yield testing below the detection threshold of the International Monitoring System operated by the Preparatory Commission for the CTBT Organization, behavior under today's moratoria might be reproduced under the treaty, were it in force. In this case, too, symmetries in NWS behavior could have significant security implications, especially over time.

COUNTRY ASSESSMENTS

PEOPLE'S REPUBLIC OF CHINA (CHINA)

FINDING

China maintained a high level of activity at its Lop Nur nuclear weapons test site throughout 2019. China's possible preparation to operate its Lop Nur test site year-round, its use of explosive containment chambers, extensive excavation activities at Lop Nur, and lack of transparency on its nuclear testing activities – which has included frequently blocking the flow of data from its International Monitoring System (IMS) stations to the International Data Center operated by the Preparatory Commission for the Comprehensive Nuclear Test-Ban Treaty Organization – raise concerns regarding its adherence to the “zero yield” standard adhered to by the United States, the United Kingdom, and France in their respective nuclear weapons testing moratoria.

CONDUCT GIVING RISE TO ADHERENCE CONCERNS

China's possible preparation to operate its Lop Nur test site year-round, its use of explosive containment chambers, extensive excavation activities at Lop Nur, and lack of transparency on its nuclear testing activities – which has included frequently blocking the flow of data from its International Monitoring System (IMS) stations to the International Data Center operated by the Preparatory Commission for the Comprehensive Nuclear Test-Ban Treaty Organization – raise concerns regarding its adherence to the “zero yield” standard adhered to by the United States, the United Kingdom, and France in their respective nuclear weapons testing moratoria.

Additional information is provided in the higher classification Annex.

ANALYSIS OF ADHERENCE CONCERNS

China's lack of transparency regarding the nature of its testing activities raise concerns regarding China's adherence to its testing moratorium, which China declared in 1996, judged against the U.S. "zero-yield" standard.

China has frequently blocked the flow of data from its IMS stations to the CTBT Preparatory Commission's Provisional Technical Secretariat/International Data Center (CTBT PrepCom/PTS/IDC), even after PTS/IDC certification of Chinese IMS stations in 2018. Data from those stations were not provided to the IDC during 2019 until August, when data transmissions resumed after having ceased for more than a year. While there are other, more plausible explanations for China's withholding information from IMS stations, the United States cannot rule out the possibility that China could have conducted activities at its test site that are inconsistent with its moratorium commitment, as interpreted in accordance with the U.S. "zero-yield" standard.

EFFORTS TO RESOLVE ADHERENCE CONCERNS AND NEXT STEPS

The United States has attempted to engage China in discussions about test site transparency, as a confidence building measure, and sought to begin the process by inviting the P-5 States (China, France, the United Kingdom, and Russia) to the Nevada National Security Site. U.S. concerns about China's testing posture were also raised with Chinese diplomats in the P-5 context during the reporting period. China has been strongly resistant to any such engagements on nuclear testing concerns.

In addition, the United States will continue to monitor activities in China.

RUSSIAN FEDERATION (RUSSIA)

FINDING

The United States finds that Russia has conducted nuclear weapons experiments that have created nuclear yield and are not consistent with the U.S. "zero-yield" standard. The United States does not know how many, if any, supercritical or self-sustaining nuclear experiments Russia conducted in 2019. Despite Russia renewing its nuclear testing moratorium in 1996, some of its activities since 1996 have demonstrated a failure to adhere to the U.S. zero-yield standard, which would prohibit supercritical tests.

CONDUCT GIVING RISE TO ADHERENCE CONCERNS

Despite Russia renewing its nuclear testing moratorium in 1996, some of its activities since 1996 have demonstrated a failure to adhere to the U.S. zero-yield standard, which would prohibit supercritical tests.

Additional information is provided in higher classification Annex.

ANALYSIS OF ADHERENCE CONCERNS

The United States assesses that Russia's testing activities have not consistently adhered to Russia's testing moratorium, declared in 1996, when judged against the "zero-yield" standard.

(The United States assesses Russia's development of new warhead designs and overall stockpile management efforts have been enhanced by its approach to nuclear weapons related experiments. The U.S. understanding of nuclear weapon development leads the United States to assess that Russia's supercritical testing activities would help it improve its nuclear weapons designs and capabilities. The United States, by contrast, has forfeited such benefits by upholding a "zero-yield" standard.)

EFFORTS TO RESOLVE ADHERENCE CONCERNS AND NEXT STEPS

The United States has in previous years attempted to engage Russia in discussions about test site transparency, as a confidence building measure, and sought to begin the process by inviting the P-5 States (China, France, the UK, and Russia) to the Nevada National Security Site.

Due to ongoing activities in Russia, the United States will continue to monitor Russia for evidence of nuclear testing activities. U.S. concerns could be mitigated by greater transparency.

PART III: OTHER STATES' ADHERENCE TO MISSILE COMMITMENTS AND ASSURANCES

MISSILE TECHNOLOGY CONTROL REGIME

The MTCR is a voluntary arrangement among Partner governments sharing a common interest in controlling missile proliferation. The MTCR is not a treaty and it does not impose legally binding obligations on participating countries. The MTCR Partners control exports of a common list of items (the MTCR Equipment, Software, and Technology Annex, also referred to as the MTCR Annex) according to a common export control policy (the MTCR Guidelines.). The Guidelines and Annex are implemented according to each country's national legislation and regulations. The MTCR has no Regime-wide compliance or verification provisions.

Membership in the MTCR has grown steadily since the Regime's creation in 1987, and as of December 31, 2019, 35 countries are now members. In addition, several countries, including Estonia, Kazakhstan, and Latvia are recognized as unilateral adherents to the Regime.

The United States has sought and received bilateral political commitments (discussed later) from China (which is not an MTCR Partner Country) regarding its missile-related proliferation activities.

COUNTRY ASSESSMENTS

PEOPLE'S REPUBLIC OF CHINA (CHINA)

FINDING

The People's Republic of China (China) has failed to adhere to its November 2000 commitment to the United States not to assist "in any way, any country in the development of ballistic missiles that can be used to deliver nuclear weapons (*i.e.*, missiles capable of delivering a payload of at least 500 kilograms to a distance of at least 300 kilometers)."

This failure to adhere to its November 2000 commitment is reflected in Chinese entities' continued supply of items to missile programs of proliferation concern.

CONDUCT GIVING RISE TO ADHERENCE/COMPLIANCE CONCERNS

Chinese entities continued to supply MTCR-controlled goods to missile programs of proliferation concern in 2019.

Additional information is provided in the higher classification Annex.

ANALYSIS OF ADHERENCE/COMPLIANCE CONCERNS

In November 2000, the People's Republic of China (China) made a public commitment not to assist "in any way, any country in the development of ballistic missiles that can be used to deliver nuclear weapons (*i.e.*, missiles capable of delivering a payload of at least 500 kilograms to a distance of at least 300 kilometers)."

Chinese entities continued to supply MTCR-controlled goods to missile programs of proliferation concern in 2019.

EFFORTS TO RESOLVE ADHERENCE/COMPLIANCE CONCERNS AND NEXT STEPS

Throughout 2019, the United States raised a number of cases with China concerning transfers of missile-related goods and technology by Chinese entities to programs of concern. Although the United States has asked that China investigate and put a stop to such activities, most of these cases remain unresolved. In May 2019, the United States imposed sanctions against nine Chinese entities pursuant to the Iran, North Korea, and Syria Nonproliferation Act Sanctions for transferring missile technology to Iran.

The United States will continue to seek to persuade Chinese authorities to establish full adherence to its November 2000 commitment. In order to prevent proliferation of missile technology by Chinese entities to Iran and other programs of concern, the United States will continue to encourage China to implement its missile nonproliferation commitments, fully implement all relevant UNSCRs (1718, 2270, and 2231), strengthen its missile-related export control laws and regulations, devote more priority and resources to nonproliferation, and diligently enforce its export control laws and regulations to prevent transfers by Chinese entities to missile programs of concern.

PART IV: OTHER STATES' COMPLIANCE WITH AND ADHERENCE TO ARMS CONTROL, NONPROLIFERATION, AND DISARMAMENT AGREEMENTS AND COMMITMENTS PERTAINING TO CHEMICAL ISSUES

CHEMICAL WEAPONS CONVENTION (CWC)

For a detailed discussion of other nations' adherence to their obligations under the Chemical Weapons Convention, see the Report on Compliance with the Chemical Weapons Convention, submitted pursuant to Condition 10(C) of the Senate Resolution of Advice and Consent to Ratification of the Chemical Weapons Convention (also known as the "Condition 10(C) Report"), and appended to this Report. Current findings for Burma, Iran, Russia, and Syria are summarized below:

MYNMAR (BURMA)

Based on available information, the United States cannot certify that Burma has met its obligations under the Chemical Weapons Convention (CWC). The United States certifies that Burma is in non-compliance with the CWC due to its failure to declare its past chemical weapons (CW) program and destroy its CW production facility (CWPF). The United States has concerns that a CW stockpile may remain at Burma's historical CW facility.

ISLAMIC REPUBLIC OF IRAN (IRAN)

The United States certifies Iran is in non-compliance with the CWC due to (1) its failure to declare its transfer of CW to Libya during the 1978-1987 Libya-Chad war, (2) its failure to declare its complete holdings of Riot Control Agents (RCAs), and (3) its failure to submit a complete Chemical Weapons Production Facility (CWPF) declaration. Further, the United States has concerns that Iran is pursuing pharmaceutical-based agents (PBAs) for offensive purposes.

RUSSIAN FEDERATION (RUSSIA)

The United States certifies that Russia is in non-compliance with the CWC for its use of a military grade nerve agent in March 4, 2018, in an assassination attempt on UK soil. This attack indicates Russian retains an undeclared chemical weapons program. The United States cannot certify that Russia has met its obligations for complete declarations of its: (1) CWPFs; (2) CW development facilities; and (3) CW stockpiles. The United States has concerns regarding Russian assistance to the Syrian Arab Republic regarding the regime's use of chlorine against Douma in April 2018. Furthermore, the United States has concerns that Russia's pharmaceutical-based agents (PBAs) program is for offensive purposes.

SYRIAN ARAB REPUBLIC (SYRIA)

The United States certifies that the Syrian Arab Republic is in non-compliance with its obligations under the CWC. The United States assesses that Syria has continued to use chemical weapons against the Syrian people every year since acceding to the Convention, and therefore is in violation of its obligations under Article I of the CWC. The United States also assesses that

Syria was responsible for the use of chemicals as weapons in Kabana, Latakia in May 2019. In addition, the United States assesses that Syria did not declare all the elements of its CW program, as required by Article III of the CWC, and that Syria retains chemical weapons as defined by the CWC. The process for verifying the accuracy and completeness of the Syrian declaration and the resolution of these matters are ongoing.

PART V: OTHER STATES' COMPLIANCE WITH AND ADHERENCE TO ARMS CONTROL, NONPROLIFERATION, AND DISARMAMENT AGREEMENTS AND COMMITMENTS PERTAINING TO BIOLOGICAL ISSUES

BIOLOGICAL WEAPONS CONVENTION (BWC)

The Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction (BWC or Convention) opened for signature in 1972 and entered into force in 1975. As of the end of 2019, there were 183 States Party to the BWC and four signatory States for which the treaty is not yet in force. There are 10 additional States that have neither signed nor ratified and are not party to the Convention. In 1987, BWC States Party established an annual data exchange, referred to as the Confidence-Building Measures (CBMs). The CBMs were modified and expanded in 1991 and streamlined in 2011. Submission of CBMs is a politically binding commitment, but not all States Party routinely submit reports.

COUNTRY ASSESSMENTS

PEOPLE'S REPUBLIC OF CHINA (CHINA)

FINDING

During the reporting period, the People's Republic of China (China) engaged in biological activities with potential dual-use applications, some of which raise concerns regarding its compliance with Article I of the BWC. In addition, the United States does not have sufficient information to determine whether China eliminated its assessed biological warfare (BW) program, as required under Article II of the Convention.

Historically, the issue of compliance by China with the BWC has been of concern for many years, though the assessments have changed over time. In the 2005 Report, for instance, the United States assessed that "China maintains some elements of an offensive BW capability in violation of its BWC obligations." In 2010, it was "noted that China possessed an offensive BW program prior to its accession to the BWC in 1984, and . . . was obligated to eliminate this program upon acceding to the Convention." The United States continues to note that the BWC CBM declarations China has submitted have neither documented that offensive program, nor documented that China has eliminated the program or any remaining biological weapons in accordance with Article II of the BWC.

CONDUCT GIVING RISE TO COMPLIANCE CONCERNS

China became a State Party to the BWC in 1984. Questions and concerns on its compliance with the Convention have been raised since the 1993 Report.

The United States assesses China possessed an offensive biological warfare program from the early 1950s to at least the late 1980s. Although China has submitted BWC Confidence-Building Measures (CBMs) each year since 1989, China's CBM reporting has never disclosed it ever

pursued an offensive BW program, and China has never acknowledged publicly or in diplomatic channels its past offensive program.

China continues to develop its biotechnology infrastructure and pursue scientific cooperation with countries of concern. Available information on studies from researchers at Chinese military medical institutions often identifies biological activities of a possibly anomalous nature since presentations discuss identifying, characterizing and testing numerous toxins with potential dual-use applications.

Additional information is provided in the higher classification Annex.

ANALYSIS OF COMPLIANCE CONCERNS

Available information shows China engaged in activities that raise concerns with regard to its obligations under Article I of the BWC, which requires States Party “never in any circumstances to develop, produce, stockpile, or otherwise acquire or retain ...[m]icrobial or other biological agents, or toxins whatever their origin or method of production, of types and in quantities that have no justification for prophylactic, protective, or other peaceful purposes.” The United States has compliance concerns with respect to Chinese military medical institutions’ toxin research and development because of the potential dual-use applications and their potential as a biological threat. In addition, the United States assesses that China possessed an offensive BW program from the early 1950s to at least the late 1980s. There is no available information to demonstrate that China took steps to fulfill its treaty obligations under Article II of the BWC, which requires China to destroy or to divert to peaceful purposes all items specified in Article I of its past offensive BW program.

EFFORTS TO RESOLVE COMPLIANCE CONCERNS AND NEXT STEPS

In 2019, the United States engaged China on issues related to the BWC. The United States will continue to monitor and report about China’s biological activities in relation to its BWC obligations.

ISLAMIC REPUBLIC OF IRAN (IRAN)

FINDING

During the reporting period, Iran’s activities raised concerns regarding its compliance with Article I of the BWC. The United States continues to assess that Iran has not abandoned its intention to conduct research and development of biological agents and toxins for offensive purposes. This is based on a cumulative assessment of current and past Iranian activity and its continued lack of transparency. Also, Iran maintains flexibility to use, upon leadership demand, legitimate research underway for biodefense and public health purposes for a capability to produce lethal BW agents; whether maintaining this flexibility is pursuant to decisions by leadership is unknown. The United States remains unable to differentiate some of Iran’s public health research and biodefense activities from those that are prohibited under the BWC, complicating assessments of Iranian compliance.

Historically, the issue of compliance by Iran with the BWC has been of great concern for many years, though the assessments have changed over time. In the 2005 Report, for instance, United States assessed that “based on all available information, Iran has an offensive biological weapons program in violation of the BWC.” In 2010, it noted that “Iran may not have ended activities prohibited by subparagraphs (1) and (2) of Article I of the BWC.”

CONDUCT GIVING RISE TO COMPLIANCE CONCERNS

Iran became a State Party to the BWC in 1973. Its compliance with the Convention has been addressed since the 1993 Report.

Prior to submission of an incomplete CBM in 2016, Iran had not submitted an annual CBM report since 2011. Previous Iranian CBM submissions asserted that Iran did not have a biodefense program, but “has carried out some defensive studies on identification, decontamination, protection, and treatment against some agents and toxins.”

Iran has engaged in dual-use activities with potential for BW applications such as building a plant for pharmaceutical botulinum toxin production. Iranian biotechnology entities, particularly military-affiliated institutions, continued to pursue dual-use technologies. Open source reports note Iranian military-associated universities and affiliated research centers have conducted BW-relevant projects on bioregulators and have built a plant for the commercial production of botulinum toxin.

Additional information is provided in the higher classification Annex.

ANALYSIS OF COMPLIANCE CONCERNS

Available information shows Iran engaged in activities that raise concern with regard to its Article I obligations under the BWC, which requires States Party to “never in any circumstances to develop, produce, stockpile, or otherwise acquire or retain ...[m]icrobial or other biological agents, or toxins whatever their origin or method of production, of types and in quantities that have no justification for prophylactic, protective or other peaceful purposes.” Although it remains difficult for the United States to differentiate between some of Iran’s public health research and biodefense activities from those that would be prohibited under the BWC, the nature of Iran’s sophisticated toxin research and production and its capability to produce lethal agents on demand raise concerns regarding Iran’s compliance with its obligations under Article I of the BWC.

EFFORTS TO RESOLVE COMPLIANCE CONCERNS AND NEXT STEPS

There were no discussions during the reporting period between the United States and Iran regarding Iran’s compliance with the BWC. The United States will continue to monitor Iran’s activities as they relate to Iran’s obligations under the BWC. As appropriate, the United States will seek to engage Iran to clarify activity that may be inconsistent with the BWC.

THE DEMOCRATIC PEOPLE’S REPUBLIC OF KOREA (NORTH KOREA)

FINDING

The United States assesses that the Democratic People’s Republic of Korea (North Korea) has an offensive BW program and is in violation of its obligations under Articles I and II of the BWC. North Korea is assessed to have had BW capabilities since at least the 1960s. Although the United States has fragmented insight into North Korea’s offensive BW program, continued reporting illustrates that North Korea has BW capabilities intended for use to counter U.S. and South Korean military superiority. The United States concludes that North Korea’s activities violate its obligations under Article I and II of the BWC.

CONDUCT GIVING RISE TO COMPLIANCE CONCERNS

North Korea has pursued biological warfare capabilities since the 1960s and continued its program despite having become a State Party to the BWC in 1987. Its compliance with the Convention has been addressed in prior Reports.

North Korea submitted a null BWC CBM report in 1990, where it noted there was nothing relevant to report. It has failed to submit a report since 1990.

Available information indicates that North Korean entities have continued to engage in a range of biological research and development activities that demonstrate capabilities applicable to developing biological weapons. North Korea has publicly denied having a BW program as recently as 2017, according to North Korean state media.

However, the United States assesses that North Korea has a dedicated, national level effort to develop a BW capability and has developed, and produced BW agents, and may have weaponized them for use. North Korea probably has the capability to produce sufficient quantities of biological agents for military purposes upon leadership demand.

Additional information is provided in the higher classification Annex.

ANALYSIS OF COMPLIANCE CONCERNS

Based on reported information, North Korea has pursued BW capabilities since the 1960s, having a dedicated, national level effort that has developed and, produced BW agents, and may have weaponized them for use. Because of such activities, the United States concludes that North Korea’s activities described above violate its obligations under Article I of the BWC, which requires States Party “never in any circumstances to develop, produce, stockpile or otherwise acquire or ...retain... [m]icrobial or other biological agents, or toxins whatever their origin or method of production, of types and in quantities that have no justification for prophylactic, protective or other peaceful purposes” and Article II, which requires States Party to “destroy, or to divert to peaceful purposes” the BW items specified in Article I of a past offensive program.

EFFORTS TO RESOLVE COMPLIANCE CONCERNS AND NEXT STEPS

The United States will continue to monitor North Korea's activities in relation to its obligations under the BWC. As appropriate, the United States will continue to assess the feasibility of engaging North Korea on activities that violate its obligations under the BWC.

RUSSIAN FEDERATION (RUSSIA)

FINDING

For this reporting period, available information does not allow the United States to conclude that the Russian Federation (Russia) has fulfilled its Article II obligation to destroy or to divert to peaceful purposes BW items specified under Article I of its past BW program.

Historically, the issue of compliance by Russia with the BWC has been of concern for many years. Though the assessments have changed over time, as noted in the 2005 report, the United States assessed that Russia maintained an offensive BW program in violation of Article I of the Convention. The United States continues to have concerns about Russian activities.

CONDUCT GIVING RISE TO COMPLIANCE CONCERNS

The Soviet Union became a State Party to the BWC in 1975. Russia's BWC compliance was first addressed in the 1993 Report, though the Soviet Union's BWC noncompliance was first addressed in the January 1984 Report to Congress on Soviet Non-compliance with Arms Control Agreements.

Russia's Acknowledgement of Inherited Soviet Activities. Russia inherited the Soviet Union's biological weapons program. The U.S. Central Intelligence Agency reported in 1949 that the Soviet BW program began "sometime in the middle of the 1930s" or perhaps as early as 1928 and continued during World War II. Soviet biological weapons development progressed unabated before and after the Soviet Union signed the Biological and Toxin Weapons Convention in 1972. The post-1972 program was composed of four major components: the Ministries of Defense, Agriculture and Health, and the then newly-created civilian Biopreparat organization, supported by other institutional actors. Between them they comprised 40-50 research, development and production facilities, plus a testing facility on Vozrozhdeniye Island in the Aral Sea. Evidence of Soviet biological weapons activities became available to the outside world in 1979 when an accident at Sverdlovsk released anthrax spores, killing 64, an incident confirmed by Russian President Yeltsin in 1992.

In January 1992, President Yeltsin announced that Russia renounced the former Soviet Union's reservations to the 1925 Geneva Protocol that had allowed for retaliatory use of biological weapons. (The Duma voted to remove these reservations in 2001.) In April 1992, President Yeltsin signed a decree committing Russia as the BWC successor to the Soviet Union and prohibiting illegal biological warfare activity in Russia. During discussions in Moscow in September 1992, Russian officials confirmed the existence of a biological weapons program inherited from the Soviet Union and committed to its destruction.

On September 14, 1992, the United States, United Kingdom, and Russia met in Moscow where Deputy Foreign Minister Gregory V. Berdennikov made the following admission: “[T]he Soviet Union was violating this convention [BWC] and was running a program in the sphere of offensive biological research and development, which has been declared unlawful by the convention. . . . These activities were in progress from 1946 until March of 1992.” The three countries agreed on a Trilateral Process to create confidence that Russia had terminated all illegal biological weapons activity. While there was progress towards achieving the openness intended in the Joint Statement (which calls for a series of confidence-building visits and information exchanges), the Trilateral Process broke down in the mid-1990s without resolving U.S. concerns regarding Russia’s compliance with the BWC.

In September 2000, Russian President Vladimir Putin reiterated Russia’s adherence to the Convention. Nonetheless, in 2002 and 2003, the United States was unable to certify, under the Cooperative Threat Reduction Act and Title V of the Freedom Support Act (FSA), Russia’s commitment to comply with the Biological Weapons Convention, explaining U.S. concern, as follows:

“...Russia continues an offensive BW program, although it is much smaller than the massive Soviet BW program. Research activities with potential offensive applications are ongoing at certain facilities known to have been involved in offensive BW work during the Soviet era. Some civilian facilities previously associated with the Soviet offensive BW program have been subject to varying degrees of modification and equipment removal, and U.S. assistance has facilitated access to some of these civilian facilities, although many retain a capability to engage in offensive activity. Many key officials from the former Soviet offensive BW program continue to occupy influential positions. Funding for possible offensive BW activities at certain military sites has continued. Because the Ministry of Defense facilities remain closed to the West, the nature of Russian activities there remains uncertain.”

Although Russia inherited a past offensive program of biological research and development from the Soviet Union, Russia’s annual BWC CBM submissions since 1992 have not satisfactorily documented the complete extent of its programs and whether the items of these programs specified under Article I were completely destroyed or were diverted to peaceful purposes, in accordance with Article II of the BWC. Issues raised in prior reports regarding knowledge and capabilities acquired from its inherited program, which might facilitate Russia’s ability to potentially produce and deploy BW agents to support a range of military and security objectives, have yet to be resolved.

Moreover, CBMs submitted by the Russian Federation have consistently reported “nothing new to declare” with respect to its biodefense research and development programs. However, since 2011, the Russian Federation has revised plans and funding to its national chemical and biological facilities that fall under the Russian Ministry of Defense without providing relevant details in their annual CBM reports.

Further, Russian government entities remained engaged during the reporting period in dual-use activities, potentially for purposes incompatible with the BWC.

Additional information is provided in the higher classification Annex.

ANALYSIS OF COMPLIANCE CONCERNS

Article I of the BWC requires States Party “never in any circumstances to develop, produce, stockpile or otherwise acquire or ...[r]etain microbial or other biological agents, or toxins whatever their origin or method of production, of types and in quantities that have no justification for prophylactic, protective or other peaceful purposes” and Article II requires States Party to “destroy, or to divert to peaceful purposes” the BW items specified in Article I of a past offensive program. While States Party to the BWC have a political commitment to report a past offensive program, since April 11, 1992, subsequent Russian CBM submissions have remained incomplete and misleading. It remains unclear if Russia fulfilled its obligations under Article II to “destroy or divert to peaceful purposes” the BW specified in Article I of the Convention that it inherited from the Soviet Union.

EFFORTS TO RESOLVE COMPLIANCE CONCERNS AND NEXT STEP

Both Russia and the United States have expressed willingness to engage with each other on matters of compliance, though there were no specific expert level consultations in 2019. The United States will monitor Russia’s dual-use activities and seek to engage Russia further on matters regarding Russia’s BWC obligations.

PART VI: OTHER STATES' COMPLIANCE WITH AND ADHERENCE TO ARMS CONTROL, NONPROLIFERATION, AND DISARMAMENT AGREEMENTS AND COMMITMENTS PERTAINING TO CONVENTIONAL ISSUES

TREATY ON OPEN SKIES (OST)

RUSSIAN FEDERATION (RUSSIA)

FINDING

In 2019, the United States continued to assess that Russia was in violation of the Treaty on Open Skies (OST) in two respects, and also assessed one new violation. Specifically, in 2019, Russia was in violation of the treaty in the following respects:

- 1) Section III of Annex A to the treaty and Open Skies Consultative Commission (OSCC) Decision 3/04 for imposing and enforcing a sublimit of 500 kilometers over the Kaliningrad Oblast for all flights originating out of Kubinka Open Skies Airfield.
- 2) Article VI of the treaty for refusing access to observation flights within a 10 kilometer corridor along Russia's border with the Georgian regions of South Ossetia and Abkhazia; and
- 3) Article VI of the treaty for improperly denying a planned U.S.-Canadian flight segment over Russia's TSENTR 2019 military exercise on September 20, 2019.

CONDUCT GIVING RISE TO COMPLIANCE CONCERNS

The United States first began addressing compliance concerns regarding Russia and OST in the 2004 Compliance Report.

In 2014, Russia introduced a 500-kilometer sublimit on the distance that any observation mission originating from Kubinka Open Skies Airfield could fly over the Kaliningrad Oblast; Kubinka otherwise has a maximum flight distance of 5,500 kilometers and provides sufficient range to observe the entire Kaliningrad Oblast. In 2017, Russia rejected three proposed flight plans from the United States that had flight distances of greater than 500 kilometers over the Kaliningrad Oblast. After Russia rejected these flight plans, the observing Parties modified the flight plans, under protest, to include a distance of less than 500 kilometers over Kaliningrad in order to be permitted by Russia to conduct the observation mission. In the corresponding mission reports, the United States cited Russia's imposition of the sublimit as the reason for the modifications, which the United States made clear to Russia were proposed without prejudice to the United States' treaty rights. There were no observation missions in 2018. In 2019, the Kaliningrad flight distance sublimit was tested three times – once on a U.S. shared mission and twice on Allied missions. In all instances, Russia upheld the restriction and the violation remained in effect. The first test occurred between March 25-29, 2019, on a shared mission between Slovakia and Poland. Germany and Latvia tested the restriction on a shared mission from March

13-17, and United States and Italy tested the restriction on a shared mission from July 29 – August 2.

Since May 2010, Russia has prohibited observation missions over its territory to fly within 10 kilometers of its borders with the Georgian regions of South Ossetia and Abkhazia, claiming the applicability of the prohibition in Article VI, Section II, paragraph 2, on flights within 10 kilometers of non-States Party. In the 2018 edition of this report, the United States cited this restriction as a violation of Russia's obligations under the treaty since South Ossetia and Abkhazia are within the internationally-recognized borders of Georgia, a State Party to the OST. On April 23, 2018, Russia stated that without prejudice to its interpretation of Article VI, Section II, paragraph 2 it would resume "receiving observation flights in 10 kilometers contiguous to two sections of Russia's state border in the Caucasus, which was discontinued in May 2010." Russia further claimed that "[p]ermission to conduct observation flights in these zones will be permanent provided that Georgia implements in good faith its obligations to accept Russian observation missions." (Note: Georgia ceased implementation of the treaty vis-à-vis Russia in 2012 in response to Russia's restrictions along its border. End Note.) However, during a mission from April 8-12, 2019, a joint U.S., Swedish, and German OST mission over Russia sought to fly within 10km of the Russian-Georgian border, but the proposed mission plan was rejected. Russia required modifications that removed the flight path that approached within 10 km of the border, to which the observing Parties agreed under protest. This mission therefore confirmed that Russia's violation remains in effect.

During the reporting period, the United States and Canada (the "observing Parties") carried out a shared Open Skies observation mission over eastern Russia that coincided with the Russian annual capstone military exercise TSENTR 2019 (in Russia's Central Military District). The observing Parties arrived in Russia on September 16, 2019 and submitted a treaty-compliant mission plan that included multiple observation segments over the Orenburg region, where Russia would be carrying out its TSENTR 2019 military exercise. At the point of entry, Russia provided a weather briefing and notices to airmen (NOTAMs), as it was required to do under Treaty Article VI, Section I, paragraph 13. The NOTAMs that Russia provided did not include any relevant airspace restrictions that would affect the planned flight segments. The mission plan was duly agreed and signed by the parties on September 17, with only two minor changes to waypoints.

On September 19, after completion of the first flight segment in the mission plan and prior to the scheduled take-off of the second flight segment, Russian representatives informed the observing Parties that Russian air traffic control (ATC) authorities refused to permit execution of the second segment. Several hours after this announcement, Russia then provided for the first time a NOTAM apparently published on September 16, imposing a flight restriction over a 150-km ring around Orenburg airfield. The flight path of the second segment would pass within this airspace. This NOTAM had not been mentioned or provided during mission planning.

Russia has attempted to justify its rejection of the second flight segment by claiming that its ATC authorities could not ensure safety of flight, given the hazardous airspace surrounding Orenburg airfield due to the TSENTR exercise.

Without prejudice to their rights under the treaty, the observing Parties made two attempts to adjust the mission plan to address Russia's stated concerns. First, the observing Parties proposed a modified second segment that would minimize the observation time over the area where the military exercise was being conducted. Russia rejected this proposal. Second, the observing Parties proposed a modified segment that would not only minimize observation time over the exercise area but would also be consistent with the hazardous airspace restrictions in the September 16 NOTAM. The NOTAM permitted flights above an altitude of 27,000 feet, and the observing Parties' proposal was to fly at 37,000 feet. Russia rejected this proposal as well, continuing to claim that its ATC could not ensure safety of flight – despite the fact that, per the NOTAM, a commercial aircraft would have been permitted to fly the proposed path.

With no resolution that would allow the mission to proceed in a mutually satisfactory manner, the observing Parties discontinued the mission and transited to the point of exit. The result of the Russian failure to accommodate the flight segment was that the observing Parties were unable to observe territory within the 150 km ring around Orenburg airfield during the TSENTR military exercise.

ANALYSIS OF COMPLIANCE CONCERNS

As established in Annex A, Section III, flights originating from the Kubinka Open Skies Airfield are subject to a maximum flight distance of 5,500 kilometers. No treaty provision permits a State Party to establish a sublimit within the maximum flight distance of an established Open Skies Airfield, as Russia has done for missions originating from the Kubinka Open Skies Airfield over the territory of Kaliningrad. Rather, OSCC Decision 3/04, subparagraph 1(b), precludes a State Party from decreasing the maximum flight distance from an Open Skies Airfield. Russia's 500 kilometer sublimit on flights over the Kaliningrad Oblast is therefore inconsistent with Annex A, Section III and OSCC Decision 3/04.

Article VI, Section II, paragraph 2, prohibits observation flights within 10 kilometers of a border with a non-State Party. Russia claims that the South Ossetia and Abkhazia regions of Georgia are independent States and not Party to the Treaty, and thus takes the position that Article VI, Section II, Paragraph 2 prohibits flights within 10 kilometers of its border with those regions. However, South Ossetia and Abkhazia are within the internationally recognized borders of Georgia and are considered by all other States Party to be part of Georgia, which is a State Party to the Treaty. Accordingly, there is no basis within the Treaty to prohibit observation flights from within 10 kilometers of any portion of the Russian-Georgian border, thereby denying States Party the right to observe those parts of Russia's territory.

Russia's policy with regard to such flights is therefore inconsistent with Russia's obligations under Article VI of the Treaty. As confirmed by an April 2019 observation mission, the policy remains in place despite Russia's commitment in April 2018 to lift the restriction.

With respect to Russia's denial of the planned U.S.-Canadian flight segment over the TSENTR 2019 exercise, Russia's conduct violated Article VI.

Article VI, Section II, paragraph 2, of the Treaty states that Open Skies mission plan “may provide for an observation flight that allows for the observation of any point on the entire territory of the observed Party, including areas designated by the observed Party as hazardous airspace.” According to Article VI, Section II, paragraph 4(C), the mission plan shall “take into account information on hazardous airspace as provided in accordance with Annex I.” Reading these provisions together, a mission may be planned such that it will observe any point on the observed Party’s territory, and while hazardous airspace must be “taken into account” in planning, there is no *prohibition* on flying in hazardous airspace.

Article VI, Section II, paragraph 6, makes clear that, while the observed Party may propose changes to the mission plan within the four-hour period following the mission plan’s submission, those changes “shall not preclude observation of any point on the entire territory of the observed Party, including areas designated by the observed Party as hazardous airspace.”

In the case of the TSENTR overflight, Russia offered to extend the time period of the mission beyond the Treaty-limited 96-hour window, such that the flight segment could be carried out after the TSENTR exercise had ended in the area (*i.e.*, once the airspace was no longer “hazardous”). But while an observed Party has the option *during mission planning* to address flight paths through hazardous airspace by proposing “an alternative flight altitude, route, or time,” nothing in the Treaty suggests that such changes are to be put forward after mission planning has concluded and the mission plan agreed, *or* that the observed Party may *require* such a modification. Additionally, there is no indication in the Treaty that the observed Party may effectively alter the selected mission dates unilaterally, over the observing Party’s objection, by proposing to permit a flight segment only outside the normal 96-hour window.

Russia’s insistence that it would only allow a flight over the Orenburg area after the airspace was no longer designated as “hazardous,” outside the observing Parties’ chosen mission window, together with the post-mission-planning timing of Russia’s demand, violated its obligations under Article VI, Section II, paragraph 6, of the Treaty.

Article VI, Section I, paragraph 15, states that Open Skies observation flights “shall take priority over any regular air traffic,” and that the “observed Party shall ensure that its air traffic control authorities facilitate the conduct of observation flights in accordance with this Treaty.” In the case of the TSENTR overflight, instead of ensuring that the Russian ATC authorities facilitated the conduct of the flight, Russian representatives enforced the ATC’s rejection of it. Furthermore, Russia refused to accept a compromise proposal that would have been consistent with the September 16 NOTAM restrictions, meaning that the Open Skies mission appears to have been treated *less* favorably than “regular air traffic.” Russia therefore violated Article VI, Section I, paragraph 15.

Finally, while Article VIII, Section I, paragraph 1, gives an observed Party the right to prohibit an observation flight that is not in compliance with the terms of the Treaty. Russia’s purported justification for its refusal to permit the second flight segment had no apparent basis in any provision of Article VIII. Russia itself has not invoked any specific Article VIII provision in defense of its conduct.

EFFORTS TO RESOLVE COMPLIANCE CONCERNS AND NEXT STEPS

During the reporting period the United States and other States Party raised their compliance concerns repeatedly in various interactions with Russia. The United States continued to oppose any restriction inhibiting an observing Party's right to observe any point on the observed Party's territory in accordance with the Treaty.

Since 2015, the United States has worked with key Allies and partners to organize several meetings to build support for a coordinated approach to address Russia's noncompliance with the OST. On January 16-17, 2018, the United States and several Allies and partners met to identify options to encourage Russia to return to full compliance with its OST obligations. Participants stated their shared belief that Russia continued to be in breach of several provisions of the OST, including the 500 kilometer limitation it imposes for observation flights over Kaliningrad originating from Kubinka Open Skies Airfield.

As reported in the 2018 edition of this report, the United States announced several Treaty-compliant and reversible measures it was taking to encourage Russia to return to full compliance with the Treaty in September 2017. Specifically, the United States has: (1) revised the flight distance associated with the access to the leeward Hawaiian Islands to a maximum of 900 kilometers as part of the special procedures provided for in Annex E subparagraph 5(b)(2); (2) ceased the practice of waiving certain published Federal Aviation Administration (FAA) rules, procedures, and guidelines of flight safety for Open Skies flights; and (3) stopped allowing courtesy overnight accommodations at certain mainland Open Skies Refueling Airfields that are not needed to enable full territorial access.

In October 2017, Russia stated it would take "reciprocal" actions in response to the aforementioned U.S. measures. Specifically, Russia stated it would: (1) cease implementing a series of bilateral, operational agreements/arrangements instituted in 2006, 2007, 2008, and 2011 to facilitate Open Skies implementation; (2) discontinue providing overnight accommodations to flight crews at three refueling airfields during conduct of observation flights involving the United States; and (3) comply strictly with requirements of officially published Russian air traffic management documents.

The implementation of the U.S. measures and Russia's "reciprocal" actions remained in effect in 2019.

For so long as the United States remains a Party to the Open Skies Treaty, it will continue to work closely with Allies and partners at the OSCC, its subordinate working groups, and other bilateral and multilateral venues to address Russia's violations and improve the overall operation of the Treaty. The United States also remains ready to work in good faith with Russia in seeking solutions to these issues.

VIENNA DOCUMENT ON CONFIDENCE- AND SECURITY-BUILDING MEASURES

On November 30, 2011, the participating States of the Organization for Security and Cooperation in Europe (OSCE) adopted Vienna Document 2011 (VD11), which added to and built upon the commitments in previous versions of the Vienna Document (1990, 1992, 1994, and 1999); subsequent Vienna Document Plus decisions build on VD11. The confidence- and security-building measures (CSBMs) contained in VD11 and Vienna Document Plus decisions are not legally-binding upon the participating States, but are firm political commitments.

This chapter covers VD11 adherence by participating States during 2019. Five OSCE participating States (Russia, Azerbaijan, Kyrgyz Republic, Turkmenistan, and Uzbekistan) of the six participating States with adherence concerns discussed in last year's Report are included again this year, with the sixth, Tajikistan, having taken action to address its issue of adherence concern.

As this report covers the period from January 1, 2019, to December 31, 2019, the annual VD11 exchange of data pertinent to this reporting period was held on December 15, 2018, for participating States with military forces in the VD11 zone of application to provide data valid as of January 1, 2019.¹ In some instances important developments reflected in data as of January 1, 2020, are noted; changes to adherence concerns based on these data will be included in the next year's Report.

COUNTRY ASSESSMENTS

RUSSIAN FEDERATION (RUSSIA)

Russia has joined the consensus adoption of each version of the Vienna Document (1990, 1992, 1994, 1999, and 2011) and of subsequent Vienna Document Plus Decisions. Russia's adherence to the Vienna Document was first addressed in the 1999 Compliance Report.

FINDING

The United States assesses that the Russian Federation's (Russia's) selective implementation of certain provisions of VD11 and the resultant loss of transparency about Russian military activities has limited the effectiveness of the CSBM regime and raises concerns as to Russia's readiness to provide transparency regarding its military forces.

Russia's continued occupation and attempted annexation of Crimea, which remains part of the sovereign territory of Ukraine, as well as its arming, training, and fighting alongside anti-government forces in eastern Ukraine, is contrary to paragraphs 2 and 3 of VD11, in which the participating States stress the continued validity of commitments on refraining from the threat or use of force contained in the Helsinki Final Act and the Document of the Stockholm Conference, as seen in light of the Charter of Paris and the Charter for European Security.

¹ Under the terms of VD11, participating States provide data each December regarding their forces in the zone of application effective as of January 1 of the following year.

In its VD11 data as of January 1, 2019, Russia again failed to provide information on its military forces located in the Russian-occupied Georgian territories of Abkhazia and South Ossetia. It also failed to provide information on two Russian units in Kursk, Russia, and in Crimea, Ukraine in its data as of January 1, 2019.²

With regard to reporting major weapons and equipment in its VD11 data, Russia failed to report on two types of combat aircraft and one type of helicopter that were deployed to units in the VD11 zone of application. Russia also continued to exclude improperly the BRM-1K armored combat vehicle from its reporting.

Finally, Russia's failure to provide timely information regarding the deadly nuclear accident with the SKYFALL nuclear-powered cruise missile that occurred near Nenoksa, Russia, in August 2019 raised questions regarding its commitment to the VD11 paragraphs concerning cooperation on hazardous incidents of a military nature.

CONDUCT GIVING RISE TO ADHERENCE CONCERNS

Russia's continued occupation and attempted annexation of Crimea in 2019, as well as its continued arming, training, and fighting alongside anti-government forces in eastern Ukraine, runs counter to the Helsinki Final Act and other relevant documents.

In its VD11 data as of January 1, 2019, Russia again failed to provide information on its military forces located in the Russian-occupied Georgian regions of Abkhazia and South Ossetia, neither reporting such forces at normal peacetime locations in Russia as it had done from 2008 through 2011, nor identifying the forces' normal peacetime locations in the Abkhazia and South Ossetia regions of Georgia. In its VD11 data as of January 1, 2019, Russia also failed to declare an air regiment at Kursk airfield that was declared in December 2017 but omitted from Vienna Document data provided in December 2018, and failed to declare a coastal defense brigade in Crimea, Ukraine that had been present since 2014.³

Russia failed to include three types of aircraft – the Su-35S fighter, the Su-30SM multirole fighter, and the Ka-52 attack helicopter – in its VD11 data as of January 1, 2019, despite the fact that these aircraft are subject to VD11 reporting and have been assigned since at least 2017 to active units in the VD11 zone of application. Additionally, Russia continued its practice of improperly excluding the BRM-1K armored combat vehicle from reporting. Russia reported the BRM-1K as an armored combat vehicle look-alike in its data as of January 2005 and January 2006, but has not reported it since that time, despite the continued deployment of the vehicle in the VD11 zone of application.

Finally, in the aftermath of the deadly nuclear accident with the SKYFALL nuclear-powered cruise missile that took place near Nenoksa, Russia, in August 2019, Russia did not report or provide information on this hazardous incident of a military nature to other participating States, as called for in VD11, Chapter III, paragraphs 17 and 17.2.

² Russia has since declared both of these previously omitted units in its December 15, 2019, Annual Exchange of Military Information, effective as of January 1, 2020. This information will be reflected in next year's report.

³ See note 2 above.

ANALYSIS OF ADHERENCE CONCERNS

Per VD11, paragraphs 2 and 3, participating States recall the continued validity of commitments on refraining from the threat or use of force contained in the Helsinki Final Act and the Document of the Stockholm Conference, as seen in light of the Charter of Paris and the Charter for European Security.

Russia's continued occupation and attempted annexation of Crimea, Ukraine in 2019, as well as its continued arming, training, and fighting alongside anti-government forces in eastern Ukraine, runs counter to the Helsinki Final Act and the declaration on Refraining from the Threat or Use of Force contained in paragraphs 9 to 27 of the Document of the Stockholm Conference, reaffirmed in paragraphs 2 and 3 of the VD11, respectively.

Per VD11, Chapter I, paragraphs 9 and 10.2, participating States will annually exchange information on their military forces in the zone of application concerning the military organization, manpower, and major weapon and equipment systems.

Russia has failed again to provide information on its military forces in the Russian-occupied Georgian regions of Abkhazia and South Ossetia, claiming that these regions are not part of the VD11 zone of application. However, Abkhazia and South Ossetia are within the internationally recognized borders of Georgia and are considered by all other participating States to be part of Georgia and within the VD11 zone of application. In its 2019 data, Russia also failed to declare two Russian units in Kursk, Russia, and in Crimea.⁴

Per VD11, Chapter I, paragraphs 9, 11.2, and 13, participating States will provide data on new types or versions of major weapon and equipment systems, at the latest when it deploys the systems concerned for the first time in the zone of application for CSBMs, and exchange information on plans for the deployment of major weapon and equipment systems.

Russia failed again to declare the Sukhoi Su-35 fighter, the Su-30SM multirole fighter, and the Ka-52 attack helicopter in its data as of January 1, 2019, and once again did not include the BRM-1K armored combat vehicle in this data. In addition, Russia has not provided the data VD11 requires for plans to deploy and actual deployment of new types or versions of major weapon and equipment systems, including the Su-35S fighter, the Su-30SM fighter, and the Ka-52 attack helicopter.

The SKYFALL incident took place inside the VD11 zone of application near the Russian town of Severodvinsk, which is approximately 1,000 kilometers east of Russia's border with OSCE participating State Finland and 1,200 kilometers northeast of OSCE participating State Estonia.

According to VD11, Chapter III, paragraph 17, participating States "will cooperate by reporting and clarifying hazardous incidents of a military nature within the zone of application" in order to "prevent possible misunderstandings and mitigate the effects on another participating State." Paragraph 17.2 then states that, if such an incident occurs, "the participating State whose military forces are involved in the incident should provide the information available to other participating States in an expeditious manner." Affected participating States may then request clarification, as appropriate, and such requests "will receive a prompt response." While there is no specific

⁴ See note 2 above.

timeline for reporting and clarifying such incidents, Russian officials were not forthcoming in providing information to participating States about the severity and impact of the accident. Russia did not provide information regarding the incident to other participating States, especially those in close proximity and potentially affected by the incident, in an expeditious manner, as it should have done. It is, however, worth noting that the SKYFALL incident involved military systems not covered by Vienna Document reporting commitments (per VD11 Annex III), a fact that could in turn give rise to differences of interpretation regarding the scope of the hazardous-incident provision.

EFFORTS TO RESOLVE ADHERENCE CONCERNS AND NEXT STEPS

During 2019, the United States and other participating States continued to raise in the OSCE the grave issues of Russia's attempted annexation of Crimea and Russian support for the anti-government forces in eastern Ukraine, which run counter to OSCE security commitments recalled in VD11.

The failure to report on military units in Abkhazia and South Ossetia, two types of combat aircraft, and one type of attack helicopter was verified as a recurring issue as a result of the December 2017 and December 2018 Annual Exchanges of Military Information. The failure to report on military units in Kursk, Russia, and Crimea, Ukraine, was verified as a recurring issues as a result of the December 2018 Exchange of Military Information effective as of January 1, 2019. These issues were included in last year's Report and raised with Russia via a demarche in Moscow, but no explanation was offered and the issues remained unresolved in the data as of January 1, 2019.⁵

The BRM-1K issue had in previous reports been discussed as a CFE Treaty issue, because the CFE Treaty uses detailed definitions and the Protocol on Existing Types to categorize equipment. While Russia continued its practice of improperly excluding the BRM-1K armored combat vehicle in its VD11 data in 2019, subsequent to Russia's "suspension" of CFE Treaty implementation since December 2007, this issue had not otherwise been addressed.

The United States also addressed the SKYFALL incident publicly during the General Debate at the U.N. First Committee in October 2019.

The United States will continue to work with Russia through diplomatic channels, including in cooperation with the 55 other OSCE participating States, to address concerns related to Russia's implementation of VD11, including its military activities in Crimea and eastern Ukraine and the absence of information about new equipment systems, with the aim of increasing the transparency of Russia's military forces and activities.

The United States is a leading advocate of modernization of VD11 to make it a more effective tool for providing transparency on, and addressing security concerns related to, conventional military forces in Europe. To date, Russia has refused to engage on VD11 modernization.

⁵ See note 2 above.

REPUBLIC OF AZERBAIJAN (AZERBAIJAN)

Azerbaijan has joined the consensus adoption of each version of the Vienna Document (1990, 1992, 1994, 1999, and 2011) and of subsequent “Vienna Document Plus” Decisions. Azerbaijan’s adherence to the Vienna Document was first addressed in the Compliance Report in 1998.

FINDING

The Republic of Azerbaijan (Azerbaijan) failed to notify at least one major military exercise or activity for calendar year 2019.

CONDUCT GIVING RISE TO ADHERENCE CONCERNS

Azerbaijan failed to provide notification of at least one major military exercise or activity during calendar year 2019.

ANALYSIS OF ADHERENCE CONCERNS

Per Vienna Document Plus Decision No. 9/12, participating States will notify annually at least one major military exercise or activity if no military activity otherwise meets Chapter V notification thresholds.

Azerbaijan conducts and publicizes exercises, but continues to fail to provide notification of at least one major military exercise or activity each year. According to the website of the Azerbaijan Ministry of Defense (MoD) and the Azerbaijani press, Azerbaijan held a large-scale exercise from March 11-15, 2019, that involved: up to 10,000 personnel; up to 500 tanks, armored vehicles, and other vehicles; up to 300 rocket and artillery systems; and 20 military aircraft. The website of the Azerbaijan MoD and the Azerbaijani press reported that Azerbaijan held another large-scale exercise from September 16-20, 2019, involving up to 10,000 personnel; more than 100 tanks and armored vehicles; 120 rocket and artillery systems; and 20 military aircraft and drones. The MoD website and local press also reported that Azerbaijan conducted the exercise “Indestructible Brotherhood-2019,” and that it involved: up to 5,000 military personnel; 200 tanks and other armored vehicles; up to 180 mortars and rocket and artillery systems; and 21 military aircraft and helicopters – with Turkey from June 7-11, 2019, in the Naxcivan exclave of Azerbaijan.

Azerbaijan should have reported at least one exercise to fulfill the VD11 requirement to notify at least one major military exercise or activity annually if no military activity meets Chapter V notification thresholds.

EFFORTS TO RESOLVE ADHERENCE CONCERNS AND NEXT STEPS

In August 2019, the United States shared with Azerbaijan its concerns about lack of transparency for large-scale exercises. Regarding these exercises, Azerbaijan noted in statements at the OSCE’s Forum for Security Cooperation (FSC) that announcements on its MoD website included personnel and equipment that were outside the scope of the Vienna Document and that it did not have anything further to add on the issue.

The United States will continue to highlight with Azerbaijan, bilaterally and at OSCE meetings, the importance of complete and timely notification of military activities, particularly annual notification of at least one exercise or activity in the absence of any that exceed Chapter V thresholds. Military activities that are unreported or incompletely reported undermine the Vienna Document's objective of building confidence through increased transparency. We will continue to encourage Azerbaijan to be more transparent about its exercises, including by providing additional details about their size and purpose.

KYRGYZ REPUBLIC

The Kyrgyz Republic has joined the consensus adoption of each version of the Vienna Document (1990, 1992, 1994, 1999, and 2011) and of subsequent "Vienna Document Plus" Decisions. The Kyrgyz Republic's adherence to the Vienna Document was first addressed in the Compliance Report in 2001.

FINDING

The Kyrgyz Republic failed to provide VD11 data on its armed forces (as of January 1, 2019) by December 15, 2018.

The Kyrgyz Republic also failed to notify at least one major military exercise or activity for calendar year 2019.

Additionally, Bishkek declined a June 2019 request by Italy, an October 2019 request from Germany, and a November 2019 request from France for VD11 inspections, and declined a July 2019 request by the United Kingdom for a VD11 evaluation.

CONDUCT GIVING RISE TO ADHERENCE CONCERNS

The Kyrgyz Republic failed to provide VD11 data on its armed forces (as of January 1, 2019) by December 15, 2018. The Kyrgyz Republic has not provided such data since it provided data effective as of January 1, 2014.

The Kyrgyz Republic failed to provide advance notification of at least one major military exercise or activity during calendar year 2019, although Kyrgyz news media reported that Kyrgyzstan participated in an annual military counterterrorist exercise "Kanzhar" at a training area in Balykchy in March 2019.

The Kyrgyz Republic declined a June 2019 request from Italy, an October 2019 request from Germany, and a November 2019 request from France for VD11 inspections, and also declined a July 2019 request from the United Kingdom for a VD11 evaluation, citing "incomplete internal governmental procedures connected with the reconciliation of national legislation with provisions of the VDoc." The Kyrgyz notification added that "the conduct of the requested inspection does not seem possible. Information on the results of the ongoing activities will be notified later." The Kyrgyz Republic had previously declined a request by the United States to conduct a Vienna Document inspection on its territory from June 13-16, 2017, citing staffing problems.

ANALYSIS OF ADHERENCE CONCERNS

Per VD11, Chapter I, paragraphs 9 and 10, participating States will exchange annually information on their military forces in the zone of application not later than December 15 of each year.

The Kyrgyz Republic failed to provide VD11 data on its armed forces (as of January 1, 2019) by December 15, 2018. The Kyrgyz Republic has not provided such data since it provided data valid as of January 1, 2014.

Per Vienna Document Plus Decision No. 9/12, participating States will notify annually at least one major military exercise or activity if no military activity otherwise meets Chapter V notification thresholds.

The Kyrgyz Republic failed to provide advance notification of at least one major military exercise or activity during calendar year 2019, although Kyrgyz news media reported that Kyrgyzstan participated in an annual military counterterrorist exercise “Kanzhar” at a training area in Balykchy in March 2019.

Per VD11, Chapter IX, participating States will reply in the affirmative to an inspection request in accordance with the applicable timelines and limitations, and the inspection will be carried out absent reasons of *force majeure*. Per VD11, Chapter IX, participating States will provide the opportunity for an evaluation visit in accordance with the applicable timelines and limitations, absent explanation of unit unavailability or *force majeure*.

The Kyrgyz Republic declined a June 2019 request from Italy, an October 2019 request from Germany, and a November 2019 request from France for VD11 inspections, and also declined a July 2019 request from the United Kingdom for a VD11 evaluation, citing “incomplete internal governmental procedures connected with the reconciliation of national legislation with provisions of the VDoc.” The Kyrgyz notification added that “the conduct of the requested inspection does not seem possible. Information on the results of the ongoing activities will be notified later.” These reasons for denial do not adhere to VD11, Chapter IX provisions.

EFFORTS TO RESOLVE ADHERENCE CONCERNS AND NEXT STEPS

The United States will continue to work with the Kyrgyz Republic to implement its Vienna Document commitments, especially with regard to the annual exchange of military information and receiving inspections and evaluation visits. The United States will seek opportunities at future meetings of the FSC attended by a representative of the Kyrgyz Republic, including the Annual Implementation Assessment Meeting and OSCE VD11 data exchange, to encourage the Kyrgyz Republic and all other participating States with armed forces in the Vienna Document zone of application to provide CSBM data on a timely basis, consistent with VD11, Chapter I commitments. The United States will encourage other states to engage the Kyrgyz Republic as well.

REPUBLIC OF TURKMENISTAN (TURKMENISTAN)

Turkmenistan has joined the consensus adoption of each version of the Vienna Document (1990, 1992, 1994, 1999, and 2011) and of subsequent “Vienna Document Plus” Decisions.

FINDING

The Republic of Turkmenistan (Turkmenistan) failed to provide VD11 data on its armed forces (as of January 1, 2019) by December 15, 2018.

Turkmenistan also failed to notify at least one major military exercise or activity for calendar year 2019. Despite these shortcomings, Turkmenistan regularly received VD11 inspections and evaluations, which were conducted satisfactorily.

CONDUCT GIVING RISE TO ADHERENCE CONCERNS

Turkmenistan has not provided its annual VD11 data valid as of January 1, 2019. Turkmenistan has not provided such VD11 data since January 2015, when it provided its data effective as of January 1, 2015.

Turkmenistan failed to provide advance notification of at least one major military exercise or activity during calendar year 2019, although regional news media reported that a Special Forces exercise called “Brave Turkmen” was held on September 5, 2019.

ANALYSIS OF ADHERENCE CONCERNS

Per VD11, Chapter I, paragraphs 9 and 10, participating States shall exchange annually information on their military forces in the zone of application not later than December 15 of each year.

Turkmenistan has not provided its annual VD11 data effective as of January 1, 2019. Turkmenistan has not provided such VD11 data since January 2015, when it provided its data effective as of January 1, 2015.

Per Vienna Document Plus Decision No. 9/12, participating States shall notify annually at least one major military exercise or activity if no military activity otherwise meets Chapter V notification thresholds.

Turkmenistan failed to provide advance notification of at least one major military exercise or activity during calendar year 2019, although regional news media reported that a Special Forces exercise called “Brave Turkmen” was held on September 5, 2019.

EFFORTS TO RESOLVE ADHERENCE CONCERNS AND NEXT STEPS

The United States discussed bilaterally with Turkmenistan its VD11 commitments and failure to provide an annual CSBMs data declaration. The United States has encouraged Turkmenistan to provide its overdue VD11 data on its armed forces valid as of January 1, 2019, and to return to its previous practice of providing an annual VD11 data declaration.

The United States will work with Turkmenistan to encourage it to improve its implementation, and will seek opportunities at future meetings of the FSC attended by a Turkmenistan representative, including the Annual Implementation Assessment Meeting and annual data exchange, to encourage Turkmenistan and all other participating States to provide data on a

timely basis, consistent with VD11, Chapter I commitments. The United States will encourage other states to engage Turkmenistan as well.

REPUBLIC OF TAJIKISTAN (TAJIKISTAN)

The Republic of Tajikistan (Tajikistan) did not present any VD11 adherence concerns in 2019. Although it failed to notify at least one major military exercise or activity in 2018, Tajikistan notified a military land exercise in an F25 notification on August 29, 2019, and notified an exercise to take place in 2020 in its annual calendar notification on November 19, 2019. These actions by Tajikistan are in adherence with their commitments under VD11 and resolve the previous issue of adherence concern reported in last year's Report.

REPUBLIC OF UZBEKISTAN (UZBEKISTAN)

Uzbekistan has joined the consensus adoption of each version of the Vienna Document (1990, 1992, 1994, 1999, and 2011) and of subsequent "Vienna Document Plus" Decisions. Uzbekistan's adherence to the Vienna Document was first addressed in the Compliance Report in 2000.

FINDING

The Republic of Uzbekistan (Uzbekistan) failed to provide VD11 data on its armed forces (as of January 1, 2019) by December 15, 2018.

Uzbekistan also failed to notify at least one major military exercise or activity for calendar year 2019.

CONDUCT GIVING RISE TO ADHERENCE CONCERNS

Uzbekistan has not provided its annual VD11 data effective as of January 1, 2019. Uzbekistan has not provided such data since a tardy submission on February 12, 2003, when it provided data effective as of January 1, 2003.

Uzbekistan failed to provide advance notification of at least one major military exercise or activity during calendar year 2019, although its news media reported that an Uzbekistani joint exercise with Tajikistan involving artillery, armored vehicles, and helicopters took place at the Gurumsaray training area in eastern Uzbekistan in September 2019.

ANALYSIS OF ADHERENCE CONCERNS

Per VD11, Chapter I, paragraphs 9 and 10, participating States shall exchange annually information on their military forces in the zone of application not later than December 15 of each year.

Uzbekistan has not provided its annual VD11 data effective as of January 1, 2019. Uzbekistan has not provided such data since a tardy submission on February 12, 2003, when it provided data effective as of January 1, 2003.

Per Vienna Document Plus Decision No. 9/12, participating States shall notify annually at least one major military exercise or activity if no military activity otherwise meets Chapter V notification thresholds.

Uzbekistan failed to provide advance notification of at least one major military exercise or activity during calendar year 2019, although its news media reported that an Uzbekistani joint exercise with Tajikistan involving artillery, armored vehicles, and helicopters took place at the Gurumsaray training area in eastern Uzbekistan in September 2019.

EFFORTS TO RESOLVE ADHERENCE CONCERNS AND NEXT STEPS

The United States discussed bilaterally with Uzbekistan its VD11 commitments and failure to provide an annual VD11 data declaration. The United States has encouraged Uzbekistan to provide its overdue data on its armed forces effective as of January 1, 2019, and to return to its previous practice of providing an annual VD11 data declaration.

The United States will work with Uzbekistan to encourage it to improve its implementation, and seek opportunities at future meetings of the FSC attended by an Uzbekistani representative, including the Annual Implementation Assessment Meeting and annual data exchange, to encourage Uzbekistan and all other participating States with reportable armed forces to provide data on a timely basis, consistent with VD11, Chapter I commitments. The United States will encourage other states to engage Uzbekistan on this topic as well.

TREATY ON CONVENTIONAL ARMED FORCES IN EUROPE (CFE)

For a discussion of other nations' compliance with their obligations under the Conventional Armed Forces in Europe (CFE) Treaty, see the Report on Compliance with the Treaty on Conventional Armed Forces in Europe, dated April 2020, submitted pursuant to Condition 5(C) of the Senate Resolution of Advice and Consent to Ratification of the CFE Flank Document (also known as the "Condition 5(C) Report"), and appended to this Report. Below are summary findings for Armenia, Azerbaijan, and Russia.

REPUBLIC OF ARMENIA (ARMENIA)

Although Armenia continues to express its full support for the Treaty, its equipment total for armored infantry fighting vehicles (AIFVs) continued to exceed the relevant Treaty-Limited Equipment (TLE) sub-limit in 2019, and other Treaty implementation practices raised concerns as to its fulfillment of certain other Treaty obligations.

REPUBLIC OF AZERBAIJAN (AZERBAIJAN)

Although Azerbaijan continues to express its full support for the Treaty, its equipment totals continued to exceed TLE limits in 2019, and other activities related to Treaty implementation raised concerns as to its fulfillment of certain other Treaty obligations.

RUSSIAN FEDERATION (RUSSIA)

In 2007, Russia "suspended" its implementation of the Treaty, which the United States does not view as legally available under the Treaty or customary international law.⁶ Since its "suspension," Russia has continued to violate its Treaty obligations and has made clear that it will not resume implementation of the Treaty. In addition, Russia's stationing of forces on the territories of Georgia, Moldova, and Ukraine without the host country's consent continued through 2019.

⁶ In this Report Russia's action is referred to as a suspension of implementation of the Treaty, as a decision to suspend observation of Russia's Treaty obligations, or as a "suspension" in quotation marks, since the Russian action is not viewed as a legally available option under the Treaty or under customary international law.

**U.S. Department of State
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