

**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 2018, including Confidence- and Security-Building Measures (CSBMs), as well as the compliance and adherence in 2018 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 this Report primarily reflect activities from January 1, 2018, through December 31, 2018, unless otherwise noted.¹

The Compliance Report includes reporting and analysis at the levels of classification for which reliable supporting information is available. This unclassified version of the report recounts 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 TOP SECRET/SCI-level version of this 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' 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.

¹ In this Report, previous editions of the Report are cited by their year of release unless otherwise noted. In general, each edition of the Report focuses on activities that took place during the preceding calendar year. For example, the previous edition of the Report was released in 2018 and primarily reflected activities from January 1, 2017 through December 31, 2017. However, there have been some exceptions to that general practice. For example, the edition released in 2011 primarily reflected activities from January 1, 2009 through December 31, 2010, and the edition released in 2010 primarily reflected activities from January 2004 through December 2008.

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 counterparties 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 this 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, this 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, this 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 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.

This 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 friends, 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 with the Anti-Ballistic Missile (ABM) 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. 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, 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 U.S. 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 2018, the United States continued to be in compliance with all of its obligations under arms control, nonproliferation, and disarmament agreements and commitments. 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)

Based on the U.S. compliance review process, all U.S. activities during the reporting period were found to be 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. During the reporting period, the Russian Federation again questioned the activities of the Lugar Center for Public Health Research in Tbilisi, Georgia, and alleging that the U.S. Army Medical Research Directorate-Georgia (USAMRD-G) work 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 continues to work toward completing the destruction of chemical weapons (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 90 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 continues to update the OPCW on U.S. destruction efforts, consistent with the November 2011 Decision by the OPCW Conference of States Parties. The United States has provided a full and complete declaration of its CW and associated CW facilities. 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.

In 2018, the United States continued to refute false Russian allegations of U.S. noncompliance with the INF Treaty associated with U.S. ballistic target missiles, armed UAVs, and the Aegis Ashore missile defense system. The U.S. side explained how its actions related to the use of ballistic target missiles fully comply with U.S. obligations under the INF Treaty and explained how and why the Aegis Ashore missile defense system is likewise fully in compliance with the INF Treaty. Additionally the Russian charge that armed UAVs violate the INF Treaty is unfounded as they perform as any other aircraft, where they launch, fly a mission and return to base upon completion. On December 4, 2018, Secretary Pompeo announced the U.S. intent to suspend its obligations under the Treaty within 60 days, should Russia fail to return to compliance.

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. 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. 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.

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 Conventional Armed Forces (CFE) Treaty.

The United States continues to maintain cessation of implementation of certain CFE Treaty obligations (notifications, data exchange, and inspections) vis-à-vis the Russian Federation as a countermeasure in response to Russia’s continued violation of its obligations to the United States under the CFE Treaty. This measure was closely coordinated with NATO Allies, which also implemented 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 Open Skies Treaty (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 Treaty on the Non-Proliferation of Nuclear Weapons (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 Treaty or NST)

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

The United States and Russia continued to discuss concerns related to Treaty implementation in the Bilateral Consultative Commission (BCC) and through diplomatic channels.

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 2018 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 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 is of unlimited duration. A Party may withdraw on six months' notice if it decides that extraordinary events related to the subject matter of this Treaty have jeopardized its supreme interests.

FINDING

The United States has determined that in 2018, 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. On December 4, 2018, Secretary of State Michael Pompeo announced that the Russian Federation'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 the Russian Federation's material breach unless the Russian Federation returned to full and verifiable compliance. The Russian GLCM in question is the SSC-8 SCREWDRIVER, which the United States assesses to be designated by the Russian Federation as the 9M729. For over five years, the United States has made very clear its concerns about the Russian Federation's violation and the risks it poses to European and Asian security. The Russian Federation must 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 the Russian Federation that the United States had suspended its obligations under the Treaty as a remedy for Russia's material breach, as announced on December 4. The United States also announced it would withdraw from the Treaty in six months in accordance with Article XV of the Treaty. The United States retains the right to revoke its notice of withdrawal from the Treaty before the end of the six-month period, and we would be prepared to consider doing so should Russia return to full and verifiable compliance. Should Russia fail to do so, the U.S. decision to withdraw will stand, and the U.S. withdrawal will take effect August 2, 2019.²

² Although this edition of the Compliance Report covers developments through the end of 2018, the Department of State included some references to significant developments in 2019 that occurred before the Report was submitted to Congress on April 15, 2019.

CONDUCT GIVING RISE TO COMPLIANCE CONCERNS

The INF Treaty bans 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 has determined that Russia is 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.

Russia’s Motive: The United States assesses that Russia’s decision to violate the INF Treaty was born out of years of frustration with being prohibited from possessing ground-launched intermediate-range missiles even as perceived threats within these ranges were increasing around its borders. Russia first raised this concern with the United States during a meeting between Russian Defense Minister Sergey Ivanov and U.S. Secretary of Defense Donald Rumsfeld in October 2004. At this meeting, Ivanov indicated that Russia wanted to exit the INF Treaty.

By 2006, senior Russian officials began to voice publicly their frustration with the Treaty and raise interest in fielding ground-based intermediate-range missiles. In March 2006, Major General Vladimir Vasilenko noted that “the deployment of a group of ground-based medium-range missiles may be considered as an additional means of ensuring national security.” The following month, Defense Minister Ivanov said: “[t]he treaty is a Cold War relic. It has nothing to do with the contemporary environment whatsoever.”

By 2007, Russia was open in its desire to end or change the INF Treaty. In February 2007, Defense Minister Ivanov raised the possibility of mutual withdrawal from the INF Treaty with U.S. Secretary of Defense Robert Gates. This was the first of multiple approaches by Russia during this timeframe that the United States declined. At the Munich Security Conference that same month, President Vladimir Putin voiced frustration with the Treaty’s limits and suggested that Russia was considering withdrawal, stating “[i]t is obvious that in these conditions we must think about ensuring our own security.” The Chief of the General Staff, Yuriy Baluyevskiy, added: “[t]he possibility of withdrawing from it does exist, if one of the sides provides persuasive evidence of the need for withdrawal.... Today this persuasive evidence exists.” More recently, at the Valdai Conference in October 2017, President Putin described the Treaty as “unilateral disarmament by the Soviet side” and rued the subsequent suicide of the Soviet Union’s chief missile engineer.

When the United States refused Russia's overtures to withdraw jointly from the INF Treaty, Russia shifted its focus to advocating for a "global" INF Treaty. The United States was open to this proposal, provided that other key states signed on. At the 62nd Session of the United Nations General Assembly, Russia and the United States issued a joint statement that marked the 20th anniversary of the signing of the INF Treaty and called on all countries to renounce ground-launched missiles banned by the INF Treaty. Russia followed by submitting a written proposal for globalizing the INF Treaty at the 2008 Conference on Disarmament. France also proposed a global INF Treaty. Neither proposal went anywhere. Having failed in its attempts to mutually end or globalize the INF Treaty, Russia refused to remain constrained and focused on plans to violate the Treaty covertly.

Russia's Violation: 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 is allowed by the Treaty under certain conditions, but *only* if the missile is not being developed for ground-based use. The purpose of this exception is 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 is designed to be a ground-launched missile, and is 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 represents a flagrant violation of the INF Treaty that Russia intended to keep secret. The U.S. finding is not based on a misunderstanding of this system or its capabilities. A cruise missile does not need to be tested from a mobile launcher to ranges over 500 kilometers to violate the INF Treaty. The Treaty also does not discriminate based on warhead type, although the SSC-8/9M729 is both conventional and nuclear capable.

The history of Russia's anti-INF overtures leading up to missile tests, its 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 Naval Cruise Missile

Beginning in 2013, Russian 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 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 Vladimir Putin, publicly endorsed proposals to base sea-based Kalibr missiles on land.

ANALYSIS OF COMPLIANCE CONCERNS

Relevant Treaty Provisions

The INF Treaty defines 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 defines 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 is defined as a ground-launched cruise missile that is a weapon delivery-vehicle.

Article I provides that the Parties shall not have intermediate-range and shorter-range missiles as defined by the Treaty.

Paragraph 1 of Article IV provides that the Parties shall 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 provides that no Party shall produce or flight-test any intermediate-range missiles or produce any stages or launchers of such missiles.

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

Paragraph 2 of Article VII provides that if a GLCM is an intermediate-range missile, all GLCMs of that type shall be considered to be intermediate-range missiles.

Paragraph 4 of Article VII provides that the range capability of a GLCM not listed in Article III of the Treaty shall be considered to be the maximum distance that can 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 provides that if a launcher has been tested for launching a GLCM, all launchers of that type shall be considered to have been tested for launching GLCMs.

Paragraph 8 of Article VII provides that if a launcher has contained or launched a particular type of GLCM, all launchers of that type shall be considered to be launchers of that type of GLCM.

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

Paragraph 2 of Article XV provides that each Party shall have the right to withdraw from the Treaty if it decides that extraordinary events related to the subject matter of this Treaty have jeopardized its supreme interests. It shall give notice of its decision to withdraw to the other Party six months prior to withdrawal from the Treaty. Such notice shall include a statement of the extraordinary events the notifying Party regards as having jeopardized its supreme interests.

SSC-8/9M729 Ground-Launched Cruise Missile

As noted above, the INF Treaty prohibits 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 are four criteria that determine whether a State Party's cruise missile is subject to the Treaty: 1) the cruise missile is considered to be ground-launched; 2) the cruise missile meets the Treaty definition (Article II, paragraph 2) of a cruise missile; 3) the cruise missile is a weapon-delivery vehicle; and 4) the cruise missile has 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 has determined that the SSC-8/9M729 meets all four criteria. The United States has also determined that all launchers of the type that has contained, launched, or been tested for launching the SSC-8/9M729 are prohibited under the provisions of the INF Treaty.

The United States has determined that the SSC-8/9M729 is an intermediate-range GLCM subject to the INF Treaty and that the possession, production, and flight-testing of this GLCM by Russia is 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 are essential to the accomplishment of the Treaty's object and purpose, the United States found Russia's violation to constitute a material breach.

EFFORTS TO RESOLVE COMPLIANCE CONCERNS

Since declaring the Russian Federation 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 has pressed the Russian Federation to return to compliance with its obligations under the Treaty. U.S. officials have raised U.S. concerns with the Russian Federation on repeated occasions and at various levels and departments within the Russian government, engaged the highest levels of the Russian government, and provided detailed information to the Russian Federation outlining U.S. concerns. They stressed that the Russian Federation'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 the Russian Federation violated it.

Since May 2013, the United States has taken the following concrete steps to address the Russian violation:

- Over 30 engagements with Russian officials at senior levels;
- Six³ 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);
- Two Russian entities involved in the violation were added to 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 the Russian Federation the cost of endangering the INF Treaty;
- More than a dozen meetings within NATO regarding the INF issue. Since 2014, NATO has called on Russia to preserve the viability of the INF Treaty and since 2017 called on Russia to provide more transparency. Within the last six months, NATO has issued two statements in which Allies expressed their strong support for the U.S. determination of material breach and full support for the U.S. suspension and notice of intent to withdraw;
- Multiple engagements going back to 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;
- Multiple engagements with allies since President Trump's October 20, 2018, announcement, including with NATO at the highest levels, and

³ This includes when U.S. and Russian experts met for a sixth time on January 15, 2019. Under Secretary of State Thompson led the U.S. delegation.

- Five annual compliance reports to Congress reflecting the U.S. finding of Russia's noncompliance with the Treaty.

Across two administrations, the United States has made serious attempts to resolve Russian noncompliance with the INF Treaty. Under the Trump Administration, the United States redoubled efforts to bring the Russian Federation 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 the Russian Federation 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, 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 the Russian violation. Ukraine, Kazakhstan, and Belarus also participated in the SVC. Additionally, the United States and the Russian Federation 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) by reviewing military concepts and options for conventional, ground-launched, intermediate-range missile systems. These efforts place the United States in a stronger position to defend itself and its allies, should the Russian Federation's actions result in the collapse of the Treaty. These actions do not violate U.S. INF Treaty obligations, which allow for R&D activities that fall short of possession, production, and flight-testing of prohibited systems.
- Third, the United States took economic measures relating to the Russian Federation'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: creating 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 the Russian Federation 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 the Russian Federation's return to compliance. Possible steps (including verification measures) that would permit confidence the Russian Federation had returned to compliance would need to be agreed to with the Russian Federation through a consultative process.

On October 20, President Trump announced that the United States would "terminate" the INF Treaty. On December 4, Secretary of State 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 the Russian Federation and other Treaty Parties that the United States suspended its obligations under the Treaty as a remedy for Russia's material breach, as announced on December 4. The United States also announced it would withdraw from the Treaty in six months in accordance with Article XV. As Secretary Pompeo said February 1: "Russia has jeopardized the United States' security interests, and we can no longer be restricted by the Treaty while Russia shamelessly violates it." The United States retains the right to revoke its notice of withdrawal from the Treaty before the end of the six month period, and we would be prepared to consider doing so should Russia return to full and verifiable compliance. NATO Allies fully supported the U.S. action.

Engagement with Russia

The United States first raised its INF Treaty concerns with Russia in May 2013. At 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 Special Verification Commission, 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 has provided detailed information to the Russian Federation, more than enough information for the Russian Federation to engage substantively on the issue. This includes 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 has a range capability between 500 and 5,500 kilometers;
- The violating GLCM is distinct from the R-500/SSC-7 GLCM or the RS-26 ICBM; and,
- The United States assesses the Russian designator for the system in question is 9M729.

In an effort to resolve U.S. concerns at the technical level, the United States has convened two sessions of the INF Treaty's implementation body, the Special Verification Commission (SVC). Prior to 2016, the SVC had last met in October 2003 following the conclusion of the INF Treaty's inspection regime in 2001.

To assess Russian willingness to return to compliance with its obligations under the Treaty, the United States called another session of the SVC from December 12-14, 2017.

On June 20-21, 2018, the United States and the Russian Federation 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.

On January 15, 2019, Under Secretary of State Thompson led an interagency delegation to Geneva and met with Russian Deputy Foreign Minister Sergey Ryabkov 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. The United States and most NATO Allies did not attend the demonstration because Russia's demonstration could in no way account for the fact that Russia has flight-tested the SSC-8/9M729 to ranges prohibited by the Treaty.

Regardless of the meeting venue, Russia's response to U.S. engagement over the five years had been 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 the United States publicized the Russian designator for the missile—9M729—that the Russian side acknowledged the existence of the new cruise missile in question. Russia immediately pivoted to a new cover story 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 the Russian Federation that the United States was suspending its obligations under the Treaty as a remedy for Russia's material breach, as announced on December 4. The United States also announced it would withdraw from the Treaty in six months in accordance with Article XV. The United States retains the right to revoke its notice of withdrawal from the Treaty before the end of the six month period, and we would be prepared to consider doing so should Russia return to full and verifiable compliance via destruction of its SSC-8/9M729 missiles, their launcher, and associated equipment. Should Russia fail to do so, the U.S. withdrawal will take effect August 2, 2019. As documented in NATO's February 1 statement, NATO Allies fully support the U.S. action.

Engagement with Allies and Partners

The United States has regularly consulted allies and partners on its concerns regarding Russia's adherence to its obligations under the INF Treaty. Throughout 2018, 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 them 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. 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."

Following President Trump's October 20 announcement that the United States would terminate the Treaty, the United States continued consultations with allies. On October 25, 2018, a senior-level interagency team briefed an informal session of the NATO North Atlantic Council on the Russian INF Treaty violation.

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 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 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 the Russian Federation'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 and then the United States led allies and other partners in defeating a revived draft December 21 at the United Nations General Assembly by a vote of 43Y – 46N – 78A. 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."

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 the Russian Federation 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 version is also transmitted to Congress. We have made very clear our concerns about the Russian Federation's violation and the risks it poses to U.S., European, and Asian security.

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

For a discussion of Russia's implementation of its obligations under the New START Treaty, see the Report on Implementation of the New START Treaty, dated April 2019, 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 (10) Report").

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 third 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 2018. 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 2018, 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 Compliance Report for 2018, 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.

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 or 2018 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

As specified in the Compliance Report for 2018, 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.

NUCLEAR NONPROLIFERATION 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 their related obligation to conclude and implement a Comprehensive Safeguards Agreement (CSA) with the International Atomic Energy Agency (IAEA).⁴ 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 the Safeguards Agreement (AP).⁵ The chapter focuses on developments in Burma, Iran, North Korea, and Syria.

As of the end of 2018, there were 10 non-nuclear-weapon States (NNWS) Parties to the NPT that had not yet brought into force a CSA with the IAEA.⁶ 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 2018, 134 NPT States Parties 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. Additional Protocol) entered into force for the United States on January 6, 2009.

⁴ Article III of the NPT requires each NPT non-nuclear weapons State (NNWS) to accept safeguards "for the exclusive purpose of verification of the fulfillment of its obligations assumed under [the] Treaty with a view to preventing diversion of nuclear energy from peaceful uses to nuclear weapons or other nuclear explosive devices." Concluding and implementing a CSA with the IAEA fulfills this obligation. In the case of States with very limited quantities of nuclear material, the State also may enter into a Small Quantities Protocol (SQP) to the CSA that reduces the safeguards implementation burden for such States.

⁵ The Model Protocol Additional to the Agreement(s) between State(s) and the International Atomic Energy Agency for the Application of Safeguards (AP) was developed in 1997 to provide the IAEA with broader access to information and locations, and thereby to increase the IAEA's ability to provide assurance of the absence of undeclared nuclear material and activities in a State Party. With a supermajority of NPT States Parties now implementing APs, in practice the combination of a CSA together with an AP has become the international standard for IAEA verification.

⁶ The States without a CSA in force as of December 31, 2018, are as follows: Benin, Cape Verde, Equatorial Guinea, Eritrea, Guinea, Guinea Bissau, Micronesia, Sao Tome and Principe, Somalia, and Timor-Leste. In 2015, the Palestinians deposited an instrument of accession to the NPT. The United States does not believe the "State of Palestine" qualifies as a sovereign State and does not recognize it as such. Accession to the NPT is limited to sovereign States; therefore, the United States believes that the "State of Palestine" is not qualified to accede to the NPT and does not consider itself to be in a treaty relationship with the "State of Palestine" under the NPT.

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 Additional Protocol in 2013 and its announcement that it would adhere to the modified Small Quantities Protocol (SQP) contributed significantly to U.S. confidence in the civilian leadership's peaceful intentions regarding its nascent nuclear program. Neither the AP nor the modified SQP have yet entered into force, however, and efforts to bring into force and implement them will require cooperation between the civilian and military elements of the Burmese government to succeed. 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 Comprehensive Safeguards Agreement (CSA) with the IAEA entered into force in 1995, and it signed an AP with the IAEA in 2013. Entry into force 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. 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.

ANALYSIS OF COMPLIANCE CONCERNS

Under NPT Article II, each non-nuclear-weapons State (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. It must also provide the IAEA with expanded inspection access, including to additional parts of Burma’s nuclear research program, and the ability 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, 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. Nevertheless, 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 entry into force and implementation of an AP and modified SQP will be key to assessing activities that have raised concerns in the past regarding its military’s nuclear intentions and activities.

EFFORTS TO RESOLVE COMPLIANCE CONCERNS

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 SQP, and to help prepare for their future implementation. Most recently, at a workshop held in August 2018, 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.

The United States continues 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) was in violation of its obligations under Articles II and III of the NPT and its Comprehensive Safeguards Agreement (CSA) with the IAEA at the time it announced its withdrawal from the NPT in 2003. North Korea's continuing nuclear activities make clear that it is not adhering 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, as well as its 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 at the point this occurred. In that event, however, the DPRK's 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 safeguards obligations, since the IAEA has not been able to conduct 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 also 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

The IAEA, in an August 2018 report, noted indications consistent with operations at the 5MW(e) plutonium production reactor at the Yongbyon Nuclear Research Center, as well as indications consistent with the use of the reported uranium enrichment facility at the Yongbyon Nuclear Rod Fuel Fabrication Plant. The same report also noted construction activities at the Yongbyon Nuclear Fuel Rod Fabrication Plant continued during the reporting period.

North Korea is also constructing an experimental light water reactor (LWR) at Yongbyon, which North Korea revealed publicly in 2010. If successfully completed and operated, the LWR 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.

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

Testing

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

The United States assessed that the September 3, 2017, test produced a nuclear yield over 100 kilotons, making it significantly larger than previous North Korean tests.

So far, the P’unggye Nuclear Test Site is the only assessed underground nuclear test site in North Korea. North Korea has conducted six nuclear tests at the P’unggye Nuclear Test Site: on October 9, 2006, May 25, 2009, February 12, 2013, January 6, 2016, September 9, 2016, and September 3, 2017.

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. Kim Jong Un’s commitment to allow a visit by U.S. experts to the P’unggye Nuclear Test Site has yet to occur.

North Korea announced it would collapse the test adits, closing the entrances, and held a ceremony for journalists on May 24, 2018. During the ceremony, North Korea demolished the buildings in the adit support area.

It is assessed that the results of the detonations at P’unggye Nuclear Test Site on May 24, 2018, are almost certainly reversible. It is possible that North Korea could develop another nuclear test site, if it chose to do so.

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. During the reporting period, North Korea signed a Joint Statement at the June 2018 Singapore summit in which, among other commitments, it affirmed its commitment to “work toward complete denuclearization of the Korean Peninsula.” North Korea did not conduct

additional nuclear tests and announced that the P'unggye Nuclear Test Site had been completely dismantled. These steps could be a positive indication that North Korea is willing to take further steps toward fulfilling its denuclearization commitments and obligations. 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.

Alternatively, North Korea could develop another nuclear test site. This, combined with North Korea's failure to permit qualified international inspectors to observe and verify the dismantlement, calls into question North Korea's long-term commitment to forego further nuclear explosive tests and the broader denuclearization process.

EFFORTS TO RESOLVE COMPLIANCE CONCERNS

Following intensive diplomatic engagement and a thaw in relations between North and South Korea during the reporting period, 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 North Korean leader 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."

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, and the IAEA General Conference, 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 has also taken enforcement action, including U.S. Treasury sanctions designations, against those involved in UN and U.S. sanctions evasion.

The United States continues to closely monitor North Korea's nuclear activities. The denuclearization of North Korea remains the overriding U.S. objective, and the United States remains committed to continued diplomatic negotiations with North Korea toward the goal of achieving the final, fully-verified denuclearization of North Korea. The United States also continues to work with a broad range of partners and the international community on the need for continued pressure on North Korea – including full implementation of UN Security Council Resolutions (UNSCRs) on North Korea, continued diplomatic isolation of 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 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.

IRAN

FINDING

NPT and Comprehensive Safeguards Agreement

In previous Compliance Reports, the United States found Iran had violated its obligations under Articles II and III of the Nuclear Nonproliferation Treaty (NPT) and its International Atomic Energy Agency (IAEA) Comprehensive Safeguards Agreement (CSA) in connection with undeclared nuclear activities associated with its pre-2004 nuclear weapons program. Although these violations remain unresolved as of the end of 2015, new developments during the reporting period raise serious questions with respect to whether Iran intends to resume nuclear weapon-related activities at some point in the future. In April 2018, Israeli Prime Minister Netanyahu publicly disclosed that Israel had seized a vast archive of documents from Iran's past nuclear weapons program. Efforts to evaluate the information in the archive are ongoing. However, the fact that Iran retained these materials in secret raises questions about whether Iran has taken active measures to deliberately deceive IAEA officials regarding activities related to possible military dimensions (PMD) of Iran's past nuclear activities. As noted in the IAEA's December 2015 Final Assessment on Past and Present Outstanding Issues regarding Iran's Nuclear Program, moreover, Iran has yet to fully/satisfactorily answer significant questions regarding its past nuclear weapons program. Given Iran's history of denial and deception, information acquired in 2018 could suggest efforts by Iran to conceal past activities that were nuclear-related, raising serious questions with respect to Iran's compliance with its safeguards obligations and Article III of the NPT. 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 nuclear archive, will be important factors in assessing Iran's compliance with its NPT and safeguards obligations in future editions of this Report.

Iran's efforts to retain records from its past nuclear weapons program, the preservation of which is now public knowledge thanks to Israel's seizure and disclosure of much of this information – as well as Iran's steps to keep former weapons program scientists employed on weaponization-relevant dual-use technical activities, and under the continued leadership of the former head of that program, Mohsen Fakhrizadeh – suggest that Iran preserved information from its historical efforts to aid in any future decision to pursue nuclear weapons, if a decision were made to do so.

New efforts by Iran to manufacture or otherwise acquire a nuclear weapon would be inconsistent with its obligations under Article II of the NPT. As key restrictions upon Iran's nuclear program in the Joint Comprehensive Plan of Action (JCPOA) begin to expire beginning in the year 2026, Iran would also be in a position to expand its fissile material production capabilities and its available stockpile of enriched uranium unless a successor deal were negotiated or some other restriction or constraint is imposed.

The U.S. Intelligence Community continues to review the information contained in the nuclear archive, which provide greater detail to our understanding of Iran's previous nuclear weapons-related efforts.

Joint Comprehensive Plan of Action

In previous Compliance Reports, the United States reported on implementation by Iran of the non-legally binding JCPOA. On May 8, 2018, President Trump announced that the United States would no longer participate in the JCPOA, and on November 5, 2018, all U.S. sanctions lifted or waived pursuant to the JCPOA were re-imposed. The Trump Administration has made clear that the United States will continue to impose maximum pressure on Iran until it returns to the negotiating table and concludes a comprehensive deal that resolves all U.S. concerns, including those related to Iran's past nuclear weapons program. Given that the United States is no longer participating in the JCPOA but did participate in the deal for part of the reporting period, this Compliance Report will examine, as a matter of discretion, Iran's activities that are relevant to its JCPOA commitments without making adherence assessments.

Nevertheless, a developing pattern of rhetoric from Iranian officials as well as Iranian activities related to research, development, production, and testing of advanced centrifuges suggests that Iran is seeking to advance its uranium enrichment program.

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 Additional Protocol (AP) to its Safeguards Agreement 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 JCPOA. Iran's compliance with the NPT was first addressed in the 1992 Report. The United States first 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, four of which imposed binding obligations under Chapter VII of the UN Charter (UNSCRs 1696, 1737, 1747, and 1803).

From 2006-2013, as detailed in previous Compliance Reports and as well as multiple IAEA reports, Iran continued to perform uranium enrichment-related and plutonium production-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 the IR-40 heavy water-moderated research reactor at Arak; 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 Director General detailed the basis for concerns regarding elements of Iran's nuclear program with PMD. 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 further information in response to its inquiries, or where other information available to the IAEA did not support Iran's statements regarding some of the activities in the PMD file. The discovery of Iran's secret nuclear archive in 2018 raises unresolved questions about Iran's concealment of critical information about its past nuclear weapons activities from the IAEA.

As noted in previous editions of this report dating back to 2015, the December 15, 2015, decision by the IAEA BOG to close its PMD agenda item does not preclude the IAEA from investigating any information that is new or inconsistent with its previous assessment of Iran's past nuclear weapons program, or where it has concerns regarding the potential existence of undeclared nuclear materials or activities.

Activity During the Current Reporting Period

The U.S. Intelligence Community assesses that Iran is not currently undertaking the key nuclear weapons development activities judged necessary to produce a nuclear device. However, Iran has retained files, documents, and personnel related to its past nuclear weapons program that it might leverage in support of a renewed nuclear weapons development effort following any decision to do so. In April 2018, in fact, Israeli Prime Minister Netanyahu publicly disclosed that Israel had seized from Iran a vast archive of documents from its past nuclear weapons program.

In addition, Prime Minister Netanyahu announced in September 2018 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 15kg of nuclear material that had since been removed.

Efforts to independently review and analyze information in the archive are ongoing. We support the IAEA's continued, careful assessment of the nuclear archive materials, as well as the importance of timely IAEA action in response to any questions or inconsistencies relevant to the IAEA's ongoing monitoring and verification mandate in Iran, or that may have implications for the IAEA's previous assessment of the PMD file.

Iran issued statements and engaged in activities during the reporting period that evidence a desire to advance its uranium enrichment program. Iran's efforts to retain records from its past nuclear weapons program, as well as Iran's steps to keep former weapons program scientists employed (*e.g.*, at the SPND organization) on weaponization-relevant dual-use technical activities – and under the continued leadership of the former head of that program, Moshen Fakrizadeh – also suggest that Iran preserved this information to aid in any future nuclear weapons development work in the event that a decision were made to resume such work.

In April 2018, the head of the Atomic Energy Organization of Iran (AEOI), Ali-Akbar Salehi asserted that Iran needs only 4 days to ramp up to 20 percent uranium enrichment at the Fordow Fuel Enrichment Plant. In June 2018, he outlined Iran's preparations to attain an enrichment capacity of 190,000 separative work units (SWUs), as ordered by Supreme Leader Ali Khamenei. In July 2018, Salehi announced that Iran had opened a new factory that can produce up to 60 rotors a day for the advanced IR-6 centrifuge machines. In December 2018, senior Iranian leaders warned that Iran is prepared to restart full-scale enrichment “to meet the country's needs at any level and volume.” Expansion of Iran's fissile material production capabilities and its available stockpile of enriched uranium would be permissible in the future under the JCPOA, as key restrictions upon Iran's nuclear program under that deal begin to expire beginning in the year 2025, unless a successor deal were negotiated or some other restriction or constraint is imposed.

In addition, Iran continues to demonstrate interest in acquiring dual-use items and materials that could be relevant to the manufacture of advanced centrifuges.

If Iran leaves the JCPOA – or after such point as key restrictions in the JCPOA begin to expire, unless some successor deal is negotiated or additional restriction or constraint imposed upon Iran – it could over a significant period of time achieve the necessary level of confidence in the manufacture, testing, and operation of advanced centrifuges to enable a production-scale operation that eventually could significantly reduce the time for Iran to produce enough weapons-grade uranium for a nuclear device.

ANALYSIS OF COMPLIANCE/ADHERENCE QUESTIONS

The U.S. Intelligence Community assessed with high confidence in November 2007 (as reported in the December 2007 National Intelligence Estimate) that Iran halted its nuclear weapons program in 2003. For the purposes of the NIE, Iran's nuclear weapons program was defined as comprising Iran's nuclear weapon design and weaponization work and the Iranian military's

covert uranium conversion-related and uranium enrichment-related work, but excluding civilian-led uranium conversion and enrichment work that had been initially conducted in secret and then was subsequently declared to the IAEA only after leaks of information had revealed such efforts publicly. During the reporting period, the IC continued to assess that Iran is not currently engaged in key activities associated with the design and development of a nuclear weapon.

Notwithstanding these assessments, Iran's retention of files, equipment, 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 Program-era scientists and officials into a new organizational structure affiliated with Iranian military entities, suggest that Iran deliberately preserved information from its historical efforts to aid in any future decision to pursue nuclear weapons. New efforts by Iran to manufacture or otherwise acquire a nuclear weapon would be inconsistent with Iran's obligations under Article II of the NPT.

Information acquired in 2018 could suggest efforts by Iran to conceal past activities that were nuclear-related, raising serious questions with respect to Iran's compliance with its safeguards obligations and Article III of the NPT. As the IAEA continues its investigation of the nuclear archive materials, any information confirming the existence of undeclared nuclear materials and/or activities for which Iran is not able to provide a defensible explanation would raise additional concerns with respect to its compliance with both its safeguards obligations and Article III of the NPT. In addition, any attempts by Iran to deny IAEA requests for information and access or otherwise interfere with the IAEA's monitoring and verification activities would be a cause for significant concern.

EFFORTS TO RESOLVE COMPLIANCE QUESTIONS

The United States remains committed to denying Iran all pathways to a nuclear weapon.

On May 8, 2018, the President announced that the United States would no longer participate in the JCPOA, and would begin the process of re-imposing U.S. sanctions on Iran. As of November 5, 2018, all U.S. nuclear-related sanctions that were lifted or waived in connection with the JCPOA are back in full effect. The United States is also applying financial pressure on the Iranian regime to address the totality of its malign behavior. On October 11, 2018, the U.S. Department of Treasury's Financial Crimes Enforcement Network issued an advisory to help financial institutions better protect against potentially illicit transactions related to Iran. U.S. sanctions re-imposed on November 5 target critical sectors of Iran's economy, such as its energy shipping and shipbuilding sectors, as well as the provision of insurance and transactions involving the Central Bank of Iran and designated Iranian financial institutions.

On May 21 2018, Secretary Pompeo made clear that it is the objective of the United States to use sanctions and other pressures upon Iran to incentivize it to accept a new, more comprehensive, and more enduring deal that would address the full range of Iran's malign activities. He made clear that the U.S. objective is for Iran to cease all fissile material production, abandon its heavy water reactor project, and fully disclose its past nuclear weapons activities. The United States is working toward such a deal and has imposed unprecedented pressure upon Iran to this end, and has emphasized that pending such a negotiated solution, Iran must not expand its nuclear activities and capacities in any way.

On March 22, 2019, the U.S. Department of the Treasury's Office of Foreign Assets Control (OFAC), together with the U.S. Department of State, designated 31 individuals and entities linked to Iran's Defense Research and Innovation Organization (SPND), an organization subordinate to the Iranian Ministry of Defense and Armed Forces Logistics and led by Moshen Fakhrizadeh, the head of Iran's pre-2004 nuclear weapons program. SPND has employed as many as 1,500 individuals – including researchers associated with the Amad Plan, who continue to carry out dual-use research and development activities, of which aspects are potentially useful for nuclear weapons and nuclear weapons delivery systems. The designations underscore the fact 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 designated SPND 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.

Although the United States has ended its participation in the JCPOA, the IAEA continues to monitor and verify Iran's compliance with its obligations under its CSA, and the Additional Protocol as well as Iran's adherence to its JCPOA commitments as authorized by the December 2015 resolution of the IAEA Board of Governors. We will continue to closely monitor Iran's level of cooperation with the IAEA, including its cooperation with IAEA efforts to investigate information in the nuclear archive consistent with its mandate.

In addition, the United States will continue to independently review information contained in the nuclear archive in conjunction with 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, elements of a coordinated nuclear weapons development effort.

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 the 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 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 violated Article II of the NPT. Given the IAEA's finding of anthropogenic uranium particles at the site, we have compliance concerns with regard to 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 2018.

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.

Despite repeated requests, Syria did not allow the IAEA access to Al Kibar until June 2008. 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 Arrangement thereto. 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.

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 "the 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 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

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 Additional Protocol to its CSA.

The IAEA BOG resolution also referred the matter to the United Nations Security Council (UNSC). The Security Council met once in 2011, following the IAEA's referral, but took no action. The Security Council did not address Syria's nuclear activities in 2012, 2013, 2014, 2015, 2016, 2017, or 2018. For the reporting period, in the face of clear Russian and Chinese opposition, the United States did not pursue UNSC action. However, the United States did ensure that the issue remains on the IAEA BOG's agenda. For 2018, the IAEA noted there were no new developments, and 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 2018.

At IAEA Board of Governor's 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 Board of Governors' meeting. The United States also raised the issue of Syria's NPT noncompliance in national statements at the 2018 NPT Preparatory Committee meeting.

For 2018, 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.

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. 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. The Peaceful Nuclear Explosions Treaty 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.

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. Russian intent to carry out even a single nuclear test that meets this definition – regardless of the magnitude of its planned nuclear yield – would be sufficient to require an affirmative notification, which would alert the United States of the forthcoming opportunity to conduct specified verification activities.

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.

FINDING

Based on available information, Russian activities during the 1995-2018 timeframe raise questions 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, Section IV of the Protocol, Russia indicated that in the following calendar year it would not conduct nuclear weapons tests of any yield. This includes the notification for calendar year 2018. However, during the 1995-2018 timeframe, Russia probably conducted nuclear weapons-related tests at the Novaya Zemlya Nuclear Test Site. Depending on the nature of these tests, they could raise concerns regarding Russia’s compliance with its TTBT notification obligations. Additional information is provided in the higher classification version of this report.

ANALYSIS OF COMPLIANCE CONCERNS

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 experiments are not prohibited by the TTBT and are never required to be reported, pursuant to TTBT notification criteria. Supercritical tests per se also are not prohibited by the TTBT, but would trigger TTBT notification obligations if such a super-critical test were anticipated to result in the planned release of nuclear explosive energy through a physical breach in an explosive canister.

EFFORTS TO RESOLVE COMPLIANCE CONCERNS

Efforts have been made to raise this issue 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 nuclear weapons states accountable with their TTBT obligations. The United States will pursue senior level bilateral dialogues with Russia on test site transparency and other confidence building measures.

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 a voluntary nuclear testing moratorium, which is not legally binding. Although the United States is not a participant in these commitments, they are included in the Compliance Report as a matter of discretion.

Dating back to 1993, the United States has defined its own nuclear testing moratorium as a commitment not to conduct “nuclear explosive tests”, and after August 1995 made clear that this means any test that produces a self-sustaining, supercritical chain reaction of any kind. This is what the United States refers to as the “zero-yield” standard. Beginning with President Clinton’s announcement in August 1995, the United States led efforts to ensure the Comprehensive Test Ban Treaty (CTBT) was a “zero-yield” treaty, but these efforts did not produce a documented agreement among the nuclear weapons states on a definition of “nuclear explosion” that reflects the U.S. zero-yield standard. Since the CTBT opened for signature, both China and Russia signed the treaty in 1996, and Russia later ratified the treaty in 2000.

By the conclusion of the negotiations, all parties understood the U.S. position that the intended scope of the CTBT was “zero-yield.” Official statements from senior officials of all the P-5 nuclear weapons states, including Russia and China, and many non-nuclear weapons states, confirm this understanding.

COUNTRY ASSESSMENTS

PEOPLE’S REPUBLIC OF CHINA (CHINA) FINDING

The information raised by DIA Director LTG Robert Ashley in his remarks at the Hudson Institute on May 29, 2019, including China’s possible preparation to operate its test site year round and its use of explosive containment chambers, coupled with China’s lack of transparency on their nuclear testing activities, raise questions regarding its adherence to the “zero-yield” nuclear weapons testing moratorium adhered to by the United States, United Kingdom, and France.

CONDUCT GIVING RISE TO COMPLIANCE CONCERNS

China probably carried out multiple nuclear weapon-related tests or experiments in 2018. Additional information is provided in the higher classification version of this report.

ANALYSIS OF COMPLIANCE CONCERNS

The nature of these tests raises concerns regarding China’s adherence to its moratorium, which China declared in 1996, judged against the U.S. “zero-yield” standard.

EFFORTS TO RESOLVE ADHERENCE CONCERNS AND NEXT STEPS

The United States has in previous years attempted to engage China in discussions about test site transparency, as a confidence building measure, and sought to begin the process by inviting the P5 States (China, France, the UK, and Russia) to the Nevada National Security Site.

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

RUSSIAN FEDERATION (RUSSIA)

FINDING

The United States assesses that Russia has not adhered to its nuclear testing moratorium in a manner consistent with the U.S. “zero-yield” standard. The United States, including the Intelligence Community, has assessed that Russia has conducted nuclear weapons tests that have created nuclear yield.

CONDUCT GIVING RISE TO COMPLIANCE CONCERNS AND ANALYSIS OF COMPLIANCE CONCERNS

Despite Russia renewing its nuclear testing moratorium in 1996, some activities in Russia have demonstrated a failure to adhere to the U.S. zero-yield standard, which would prohibit supercritical tests. Additional information is provided in the higher classification version of this report.

EFFORTS TO RESOLVE ADHERENCE CONCERNS AND NEXT STEPS

The United States has in previous years attempted to engage Russia in a discussion on test site transparency measures, as a confidence building measure, and sought to begin the process by inviting the P5 States (China, France, the UK, and Russia) to the Nevada National Security Site.

In addition, due to ongoing activities in Russia, the United States will continue to monitor Russia for evidence of nuclear testing activities.

IMPLICATIONS FOR U.S. SECURITY AND OTHER INTERESTS

Russia’s development of new warhead designs and overall stockpile management efforts have been enhanced by its approach to nuclear testing. Our understanding of nuclear weapon development leads the United States to assess that Russia’s testing activities would help it to improve its nuclear weapons capabilities. The United States, by contrast, has forgone such benefits by upholding a “zero-yield” standard.

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, 2018, 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.

Additionally, North Korea continues to develop its ballistic missile programs. Because of North Korea's proliferation, and as part of our efforts to take steps to impede its programs, we have continued to impose sanctions measures against entities and individuals involved in North Korea's programs of concern. The United States regularly works with MTCR Partner Countries to combat North Korean missile proliferation.

COUNTRY ASSESSMENTS

PEOPLE'S REPUBLIC OF CHINA (CHINA)

FINDING

China has failed to adhere to its November 2000 MTCR-related 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)" by transferring MTCR-controlled and non-listed items.

This failure to adhere to its November 2000 commitment is clearly reflected in its lack of action to address known and continued proliferation activities in support of Iran's missile program by serial proliferator Karl Lee (a.k.a. Li Fangwei) despite repeated and consistent U.S. demarches for many years, U.S. steps to sanction entities associated with Lee, and a public U.S. offer of \$5 million for information on Lee under the Rewards for Justice Program.

In addition to the ongoing activities of Lee, Chinese entities continue to supply MTCR-controlled items to missile programs of proliferation concern, including those in Iran, North Korea, Syria, and Pakistan in 2018, further raising questions about China's adherence to its November 2000 commitment to the United States.

CONDUCT GIVING RISE TO ADHERENCE CONCERNS

Chinese entities continued to supply MTCR-controlled goods to missile programs of proliferation concern, including those in Iran, North Korea, Syria, and Pakistan in 2018.

ANALYSIS OF ADHERENCE 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, including those in Iran, DPRK, Syria, and Pakistan in 2018.

China's Assistance to Iran

Nowhere is the current challenge posed by missile proliferation and the expansion of missile capabilities more clear than in the case of Iran. Iran possesses the largest missile program in the Middle East and continues to work to increase the size, sophistication, range, accuracy, and lethality of its missile arsenal. It is developing an array of solid and liquid propellant short-range and medium-range ballistic missile systems, and continues to push to expand its capabilities.

We also remain concerned about the continuing ties between Chinese suppliers, and missile development efforts in places such as Iran – especially the activities of the infamous Chinese missile technology broker and fugitive from justice Karl Lee (a.k.a. Li Fangwei). Lee continues to shelter in China while serving as the most important overseas supplier of items and material for Iran's missile program. Lee is a key broker for Iran's ballistic missile program and provides significant assistance in supporting Iran's ongoing efforts to develop more sophisticated missiles. The equipment and components that Lee has provide to Iran have contributed to Iran's continued development of more sophisticated missiles with improved accuracy, range, and lethality.

Despite a warrant out for his arrest, and more than a decade of imposing sanctions on Lee under the Iran, Syria, and North Korea Nonproliferation Act (INKSNA), including most recently in April 2018, the Chinese government, to date, has not taken effective action to end his proliferation activity.

EFFORTS TO RESOLVE ADHERENCE CONCERNS

With respect to Karl Lee, for over a decade, the United States has used diplomatic outreach, sanctions authorities, and public diplomacy to try to curtail Lee's significant support to Iran's

ballistic missile programs. Over the years, the United States has also used a series of actions, including sanctions, entity listings, criminal rewards, and press releases aimed at drawing attention to, and cracking down on, Lee's activities. For example, in April 2018, the United States imposed sanctions against Lee for his assistance to Iran's missile program pursuant to the Iran, North Korea and Syria Nonproliferation Act (INKSNA). Nevertheless, Lee has continued to employ a variety of tactics to continue to supply missile-related technologies to Iran.

Despite U.S. efforts in this regard, Lee's support to Iran's ballistic missile program continues. The Chinese government has significant power over Chinese citizens and a pervasive ability to collect information about and act against them if it chooses to do so. For this reason, Lee's assistance to Iran in 2018 demonstrates the failure of China to adhere to its November 2000 bilateral 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)."

Separately, throughout 2018, the United States raised a number of cases with China concerning transfers of missile technology by Chinese entities to programs of concern in Iran, Syria, North Korea, and Pakistan. Although the United States has asked that China investigate and put a stop to such activities, most of these cases remain unresolved. In April 2018, the United States imposed sanctions against seven Chinese entities pursuant to the INKSNA 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. We also will press China to stop Karl Lee's assistance to Iran. In order to prevent proliferation of missile technology by Chinese entities to Iran, Syria, North Korea, or Pakistan, the United States will continue to encourage China to implement its missile nonproliferation commitments, fully implement 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 discussion of other nations' adherence to their obligations under the Chemical Weapons Convention, see the Report on Chemical Weapons Compliance, separately delivered, submitted pursuant to Condition 10(C) of the Senate Resolution of Advice and Consent to the Chemical Weapons Convention (also known as the "Condition 10(C) Report").

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)

COUNTRY ASSESSMENTS

PEOPLE'S REPUBLIC OF CHINA (CHINA)

FINDING

Information indicates that the People's Republic of China (China) engaged during the reporting period in biological activities with potential dual-use applications, which raises concerns regarding its compliance with 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.

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 that it ever pursued an offensive BW 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 identify biological activities of a possibly anomalous nature since presentations discuss identifying, characterizing and testing numerous toxins with potential dual-use applications.

ANALYSIS OF COMPLIANCE CONCERNS

Article I of the BWC obligates 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

In 2017 and 2018, the United States engaged China on issues related to the BWC. The United States will continue to monitor China's biological activities in relation to its BWC obligations.

ISLAMIC REPUBLIC OF IRAN (IRAN)

FINDING

The Islamic Republic of Iran's (Iran's) activities raise concerns regarding its compliance with Article I of the BWC. The United States assesses 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 divert, upon leadership demand, legitimate research underway for biodefense and public health purposes to 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.

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 activities with dual-use applications of BW significance, 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. However, there is little direct insight into how Iran would potentially employ BW agents and what circumstances might compel Iranian leaders to do so.

ANALYSIS OF COMPLIANCE CONCERNS

Article I of the BWC obligates States Parties to "never in any circumstances to develop, produce, stockpile, or otherwise acquire or retain: (1) 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; (2) weapons, equipment, or means of delivery designed to use such agents or toxins for hostile purposes or in armed conflict.”

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 sophisticated toxin research and production and reporting suggesting a capability to produce lethal agents on demand raise serious concerns regarding Iran’s compliance with its obligations under Article I of the BWC.

EFFORTS TO RESOLVE COMPLIANCE CONCERNS

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. Although the United States has fragmented insight into North Korea’s offensive BW program, continued intelligence reporting illustrates that North Korea has a BW program that it intends to use to counter U.S. and South Korean military superiority.

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, produced, and may have weaponized for use, BW agents. 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 version of this report.

ANALYSIS OF COMPLIANCE CONCERNS

Article I of the BWC requires States Party “never in any circumstances to develop, produce, stockpile or otherwise acquire or retain: (1) 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; (2) weapons, equipment, or means of delivery designed to use such agents or toxins for hostile purposes or in armed conflict.” In accordance with Article II, North Korea is required to destroy, or to divert to peaceful purposes BW items specified in Article I of a past offensive program. Based on reported information, North Korea has pursued BW capabilities since the 1960s, having a dedicated, national level effort that has developed, produced, and may have weaponized for use, BW agents. Because of such activities, the United States concludes that North Korea’s activities violate its obligations under Article I and II of the BWC.

EFFORTS TO RESOLVE COMPLIANCE CONCERNS

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.

THE RUSSIAN FEDERATION (RUSSIA)

FINDING

Available information does not allow the United States to conclude that 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.

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. 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.

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. In its CBM submission of April 11, 1992, Russia acknowledged that the former Soviet Union had "[p]ast offensive programs of biological research and development" from 1946 to March 1992, failing to account for production, testing, and weaponization activities.

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 details relevant in the CBM forms.

In addition, Russian government entities remained engaged during the reporting period in dual-use activities that may be incompatible with the BWC.

ANALYSIS OF COMPLIANCE CONCERNS

Article I of the BWC requires a States Parties to "never in any circumstances to develop, produce, stockpile or otherwise acquire or retain": (1) 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; (2) weapons, equipment, or means of delivery designed to use such agents or toxins for hostile purposes or in armed conflict." Article II requires States Party to "destroy, or to divert to peaceful purposes" the BW items specified in Article I of the BWC. 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. 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

The United States routinely informs Russia of U.S. compliance findings and discusses, more broadly, BWC implementation issues. Both Russia and the United States have expressed willingness to engage with each other on such matters, however, there were no specific expert level consultations in 2018. 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)

BELARUS/RUSSIAN FEDERATION GROUP OF STATES PARTY (RUSSIA)

FINDING

In 2018, the United States continued to assess that Russia was in violation of the Open Skies Treaty (OST), specifically:

- 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 (OSA).
- 2) Article VI of the Treaty for refusing access to observation flights in a 10 kilometer corridor along its border with the Georgian regions of South Ossetia and Abkhazia.

The United States informed all States Parties of this determination on June 20, 2017, at the plenary meeting of the OSCC.

CONDUCT GIVING RISE TO COMPLIANCE CONCERNS

Belarus and the Russian Federation participate in the Treaty as the Belarus/Russian Federation Group of States Parties. The United States first began addressing compliance concerns regarding Russia in the 2004 Compliance Report.

In 2014, Russia introduced a 500-kilometer sublimit on the distance that any observation mission could fly over the Kaliningrad Oblast, including any mission originating from Kubinka Open Skies Airfield, which 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. No State Party requested to fly greater than 500 kilometers over Kaliningrad during the reporting period because there were no observation

missions in 2018.⁷ However, based on Russia's statements during OSCC meetings, the United States assesses that the 500 kilometer sublimit remains in effect.

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 Parties. 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). At the end of the reporting period, no State Party was in a position to confirm the implementation of Russia's April 2018 announced policy change because there were no observation missions conducted during 2018.

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 Parties 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 Parties the right to observe those parts of Russia's territory. Russia's policy with

⁷ The OSCC did not approve by consensus a distribution of flight quotas for 2018. Absent such an approved distribution, States Parties were not obliged to receive observation flights in 2018. However, the United States, along with the United Kingdom, Canada, France, Germany, and Romania conducted an extraordinary observation mission over Ukraine in December 2018. Such extraordinary observation flights are voluntary and do not count against States Parties' annually distributed flight quotas (Annex L, Section III, paragraphs 3-4); thus they were not legally affected by States Parties' failure to reach consensus on a flight quota distribution for 2018.

regard to such flights is therefore inconsistent with Russia's obligations under Article VI of the Treaty. The United States intends to revisit this determination if this restriction is demonstrated to have been rescinded consistent with Russia's April 23, 2018 statement at the OSCC. In accordance with the Treaty, Russia should allow flights by States Parties within 10 kilometers of its entire border with Georgia without conditions, beyond those conditions established by the provisions of the Treaty and the OSCC Decisions.

EFFORTS TO RESOLVE COMPLIANCE CONCERNS

During the reporting period the United States and other States Parties raised their compliance concerns repeatedly at meetings of the OSCC and in bilateral consultations 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 Treaty 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 were not tested during the reporting period because there were no observation missions conducted during 2018. The impasse was due to the OSCC being unable to find consensus on the distribution of active quotas for observation missions in 2018. Observation missions have resumed in 2019, and the U.S. measures announced in September 2017 remain in effect.

In 2019, the United States 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

The Vienna Document is a set of politically binding confidence and security building measures (CSBMs) designed to increase openness and transparency concerning military holdings and activities conducted within the Vienna Document zone of application (ZOA). This zone includes the territory, surrounding sea areas, and air space of all European (Russia from the western border to the Ural Mountains) and Central Asian participating States (Mongolia). Most provisions apply only to military forces and activities inside the ZOA.

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 politically binding upon the participating States.

This chapter covers VD11 adherence by participating States during 2018. The five OSCE participating States that were reported on in this chapter of last year's edition of the Report (the Russian Federation, Azerbaijan, the Kyrgyz Republic, Turkmenistan, and Uzbekistan) are included again this year, as well as one additional participating State, Tajikistan.

In 2018, 101 inspections and 48 evaluation visits of units and formations were conducted by the participating States under the provisions of VD11, Chapter IX. In addition, 21 inspections and 31 evaluation visits were conducted using VD11 procedures under bilateral agreements, regional measures, or other arrangements that provided additional inspection opportunities to the participants in those arrangements.

The most recent annual VD11 exchange of CSBMs data was held on December 14, 2018, for participating States with military forces in the VD11 zone of application, to provide CSBMs data valid as of January 1, 2019.⁸

COUNTRY ASSESSMENTS

THE RUSSIAN FEDERATION (RUSSIA)

The Russian Federation (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"

⁸ Under the terms of VD11, participating States provide data each December regarding their forces in the zone of application as of January 1 of the following year.

Decisions; however, Russia has not engaged in recent efforts to update VD11. Russia's adherence to the Vienna Document was first addressed in the 1999 Compliance Report.

FINDING

The United States assesses that 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 CSBMs regime. Russia's selective implementation also raises concerns as to Russia's adherence to VD11.

In 2018, Russia's continued occupation and attempted annexation of Crimea, Ukraine, as well as its arming, training, and fighting alongside anti-government forces in eastern Ukraine, was contrary to paragraphs 2 and 3 of VD11, in which the participating States stress the continued validity of commitments to refrain from the threat or use of force contained in the Helsinki Final Act and the Document of the Stockholm Conference, the Charter of Paris, and the Charter for European Security.

Russia again, in 2018, failed to provide information on its military forces located in the Russian-occupied Georgian territories of Abkhazia and South Ossetia as well as on two Russian units—an air regiment at Kursk airfield that was declared in December 2017 but omitted from Vienna Document data provided in December 2018 and a coastal defense brigade in Crimea, Ukraine. With regard to reporting major weapons and equipment in its VD11 data, Russia continued to improperly exclude the BRM-1K armored combat vehicle. Additionally, Russia failed to report on two types of combat aircraft and one type of helicopter that have been in service in the VD11 zone of application since at least 2017.

CONDUCT GIVING RISE TO ADHERENCE CONCERNS

Russia's continued occupation and attempted annexation of Crimea in 2014, as well as its 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.

In its VD11 data as of January 1, 2018, Russia again failed to provide information on its military forces located in the Russian-occupied Georgian territories 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 normal peacetime locations in the Abkhazia and South Ossetia regions. Russia also failed to provide information on a Russian unit located in Crimea, Ukraine that was established in 2014, although it declared the continued presence of other Russian units there and included the 68th Naval Engineering Regiment for the first time in its Annual Exchange of Military Information in effect as of January 1, 2018. In its VD11 data provided in December 2018, Russia omitted a fighter aviation regiment at Kursk that it had declared the previous year even though the unit had received two more squadrons of combat aircraft between January 2017 and the end of December 2018.

In its VD11 data effective as of January 1, 2018, Russia continued its practice of improperly excluding the BRM-1K armored combat vehicle. 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 its continued deployment in the VD11 zone of application. Additionally, Russia failed to include three types of equipment – the Su-35S fighter, the Su-30SM multi-role fighter, and the Ka-52 attack helicopter – in its data as of January 1, 2018, despite their assignment since at least 2017 to active units in the zone of application and subject to VD11 reporting.

Russia's implementation of VD11, including with respect to Ukraine, continued to be of concern in 2018. Russia continues to conduct large-scale exercises with little to no notice and in a non-transparent manner. On November 10, 2017, Russia notified OSCE participating States of one activity, a Command Staff Exercise involving units and sub-units of the Western Military District scheduled for August 23-28, 2018. A subsequent notification indicated the exercise would involve up to 3,500 troops, which is below VD11 thresholds for notification and observation (9,000 troops and 13,000 troops, respectively). Russia did not notify any other exercises throughout 2018 and would only be obliged to do so if they exceeded VD11 thresholds for notification or observation. In previous years, press reports typically indicated exercises near, and in some cases potentially above, VD11 thresholds. Russian media reported on September 17, 2018, the beginning of a series of battalion-level tactical exercises at 15 firing ranges in the Southern Military District (including Crimea, Ukraine) and also at Russian military bases in Abkhazia, Armenia, and South Ossetia. The reports cited a Russian Southern Military District press service announcement that a total of 30 opposing-force battalion tactical exercises would be conducted involving over 45,000 military personnel from mid-September through the end of October. The announcement did not indicate whether the exercises were conducted as a single activity or were under a single operational command.

It is not clear to the United States which forces in the exercises Russia conducted or participated in were subject to counting under VD11. As a result, it continues to be difficult to determine whether the personnel numbers reported in the press indicate a failure by Russia to provide a required notification or observation opportunity. Russia did not provide—and is under no obligation to provide—any explanation regarding personnel numbers cited in the press.

ANALYSIS OF ADHERENCE CONCERNS

VD11, Chapter I, paragraph 9, states that the OSCE 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, including combat aircraft, attack helicopters, and armored infantry fighting vehicle look-alikes. Also, Chapter I, paragraph 11.2, states that a participating State 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 paragraph 13 calls for exchanging information on plans for the deployment of 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 their territory is 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 thus within the VD11 zone of application.

Russia also failed to provide information on a Russian Armed Forces unit in Crimea, Ukraine since 2014, and did not include this unit in its annual data as of January 1, 2018, although it provided information on other units in Crimea, Ukraine to include the 68th Naval Engineering Regiment. This unit – the 126th Coastal Defense Brigade – was established in 2014 and featured prominently in military exercises in Crimea since 2016, according to statements by senior Russian military officials and Russian press reports. In its VD11 data provided in December 2018, Russia omitted the 14th Fighter Aviation Regiment at Kursk (Khalino) from its data even though the unit had been declared in 2017 and had received two additional squadrons of combat aircraft between 1 January 2017 and the end of December 2018.

Russia failed again to report the BRM-1K armored combat vehicle. Russia also failed to include the Su-35S fighter aircraft, the Su-30SM multi-role fighter and the Ka-52 attack helicopter in its data since at least 2017. In addition, Russia has not provided data about any of these systems as VD11 requires for deployment of new types or versions of major weapon and equipment systems. Press reports in 2018 continued to highlight the active role of the Su-35S fighter, the Su-30SM multi-role fighter and Ka-52 attack helicopters in tactical flight training exercises in the Republic of Kareliya, the Southern Military District and Pskov Oblast, respectively.

VD11, Chapter V, paragraph 38 states that participating States will provide notification in writing to all other participating States 42 days or more in advance of the start of notifiable military activities. Chapter V, paragraph 41 states no-notice exercises that exceed notification thresholds need not be notified in advance, but are to be notified at the time the troops involved commence such activities and are otherwise subject to Chapter V reporting criteria. In addition, Chapter VI, paragraph 58, stipulates that no-notice notifiable activities with a duration of more than 72 hours are subject to observation when such activities continue beyond 72 hours while the VD11 observation thresholds are met or exceeded. Per the Vienna Document Plus Decision No. 9/12, at least one major military exercise or activity is to be notified if no military activity meets Chapter V notification thresholds.

Russia notified in its VD11 Annual Calendar an August 23-28 Command Staff Exercise in its Western Military District. A subsequent notification about the exercise indicated it would involve up to 3,500 troops, up to 220 pieces of hardware (40 tanks, 100 ACVs, 20 ATGMs, and 60 artillery pieces), and up to 20 non-helicopter aircraft sorties, numbers well below VD11 thresholds. Meanwhile, Russia continued to conduct and publicize – but not notify – large-scale military exercises and no-notice activities, including in the VD11 zone of application. Russian media reported on September 17, 2018, the beginning of a series of battalion-level tactical exercises at 15 firing ranges in the Southern Military District (including Crimea, Ukraine) and also at Russian military bases in Abkhazia, Armenia, and South Ossetia. The reports cited a Russian Southern Military District press service announcement that a total of 30 opposing-force battalion tactical exercises would be conducted involving over 45,000 military personnel from mid-September through the end of October. The announcement did not indicate whether the exercises were conducted as a single activity or were under a single operational command.

The reported numbers of 45,000 personnel are above VD11 observation and notification thresholds but it was not clear whether the exercises were conducted as a single activity or were under a single operational command or whether the personnel numbers were peak or cumulative, which could affect whether VD11 thresholds were exceeded.⁹ Russia did not respond to calls to provide further details on its exercise activities in relation to Vienna Document. Russia did provide briefings on VOSTOK 2018, for which Russia claimed to have deployed over 300,000 troops, 1,000 aircraft, 36,000 armored vehicles, and 80 ships. Russia was not obliged to brief or notify this exercise at the OSCE as VOSTOK 2018 took place outside the Vienna Document zone of application.

EFFORTS TO RESOLVE ADHERENCE CONCERNS

During 2018, 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.

During 2017 and 2018, the United States raised concerns about large-scale "snap" inspections and no-notice exercises that could be in excess of VD11 Chapter V notification thresholds and requested additional information to confirm whether they correspond to activities notifiable under VD11. The United States, together with Allies, and other OSCE partners proposed updates to VD11 to provide additional transparency on these types of military activities. Russia has continued to refuse to engage in any serious discussion of these proposals, which it claims unfairly target Russia.

The United States continues to be concerned about Russia's refusal to provide information about its military activities near its borders, including its border with Ukraine. 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, notably regarding the lack of notification or observation of large-scale exercises as well as the absence of information about units in Russia, in Crimea, Ukraine, and new equipment systems, with the aim of increasing the transparency of Russia's military forces and activities. The United States continues to advocate for the modernization of VD11 to ensure that it remains an effective tool for providing transparency on, and addressing security concerns related to, conventional military forces in Europe.

The United States will continue to remind Russia of the possibility for voluntary access under VD11, Chapter III, Paragraph 18 in order to provide additional transparency as a way to respond to and allay security and VD11 adherence concerns.

⁹ Examples of activities that are not required to be notified under VD11 but could be included in publicly announced numbers include command post exercises that do not involve activities in the field, military activities that are not conducted as a single activity under a single command structure, military activities outside the zone of application, or the activities of internal security forces, seagoing naval forces (except for amphibious operations), air defense forces; strategic, transport, and most tactical aviation; and strategic rocket forces.

REPUBLIC OF AZERBAIJAN (AZERBAIJAN)

The Republic of 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

Despite the obligation to do so, Azerbaijan failed to notify at least one major military exercise or activity for calendar year 2018.

CONDUCT GIVING RISE TO ADHERENCE CONCERNS

Azerbaijan failed to provide notification of at least one major military exercise or activity during calendar year 2018.

ANALYSIS OF ADHERENCE CONCERNS

VD11, Chapter V, paragraph 38 states that participating States will provide notification in writing to all other participating States 42 days or more in advance of the start of notifiable military activities. Chapter V, paragraph 41 states no-notice exercises that exceed notification thresholds need not be notified in advance, but are to be notified at the time the troops involved commence such activities and are otherwise subject to Chapter V reporting criteria. Per the Vienna Document Plus Decision No. 9/12, at least one major military exercise or activity is to be notified if no military activity meets Chapter V notification thresholds.

Azerbaijan conducts and publicizes exercises, while continuing to fail to provide notification of at least one major military exercise or activity each year. On September 17, 2018, the Defense Ministry of Azerbaijan reported the conduct of “large-scale exercises” from September 17-22, involving 20,000 service members, more than 200 tanks and armored combat vehicles, up to 10 fighter and bomber aircraft and up to 20 other army aviation units. On June 28, 2018, the Defense Ministry of Azerbaijan released a public statement announcing that it would conduct “large-scale military exercises” from July 2-6, 2018 involving “up to” 20,000 military personnel, 30 aircraft, and 120 tanks and armored vehicles. On March 12, 2018, the Defense Ministry of Azerbaijan released a public statement announcing that it would conduct “large-scale military exercises with participation of various military branches” from March 12-17 involving “up to” 25,000 military personnel, up to 50 combat aircraft, and 250 tanks and armored vehicles. In all three instances, it was not clear how many personnel were determined to be subject to VD11 thresholds for notification and observation (over 9,000 and 13,000 personnel, respectively).

The United States cannot determine conclusively if any of these exercises exceeded the VD11 notification threshold of 9,000 troops at any point. Even if Azerbaijan concluded that none of these exercises were subject to notification under VD11, Azerbaijan could have reported any of them to fulfill the VD11 requirement to notify at least one major military exercise or activity annually even if no military activity met Chapter V notification thresholds.

EFFORTS TO RESOLVE ADHERENCE CONCERNS AND NEXT STEPS

The United States shared with Azerbaijan 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 it did not have anything further to add to the information that was provided on the Defense Ministry's web site.

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 to include 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 CSBMs data on its armed forces (effective as of January 1, 2018) by December 31, 2017. Also, the Kyrgyz Republic failed to notify at least one major military exercise or activity for calendar year 2018 and declined two requests for Vienna Document Inspections on its territory from September 4-7, 2018 and from 23-26 October, 2018.

CONDUCT GIVING RISE TO ADHERENCE CONCERNS

The Kyrgyz Republic failed to provide CSBMs data on its armed forces (effective as of January 1, 2018) by December 31, 2017. The Kyrgyz Republic has not provided data since December, 2013, when it provided data valid 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 2018.

The Kyrgyz Republic declined a request by the United States to conduct a Vienna Document Inspection on its territory from June 13-16, 2017, citing staffing problems. While the United States did not attempt an inspection in 2018, the Kyrgyz Republic declined a request by Federal Republic of Germany to conduct a Vienna Document Inspection on its territory from September 4-7, 2018, notifying to all OSCE participating States that "due to the incompleteness of ongoing internal government procedures associated with bringing national legislation into conformity with the Vienna Document 2011, conducting the requested inspection is not possible.

Information on the results of the measures being conducted will be provided.” The Kyrgyz Republic also declined a request by the Kingdom of Belgium to conduct a Vienna Document inspection on its territory from 23-26 October, 2018, providing all OSCE participating States the same explanation for declining the inspection as for the previous inspection request.

ANALYSIS OF ADHERENCE CONCERNS

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

VD11, Chapter V, paragraph 38 states that participating States will provide notification in writing to all other participating States 42 days or more in advance of the start of notifiable military activities. Per the Vienna Document Plus Decision No. 9/12, at least one major military exercise or activity is to be notified annually if no military activity meets Chapter V notification thresholds.

VD11, Chapter IX allows participating States to request and conduct inspections on the territory of any other participating State in accordance with the timelines and limitations of that chapter. It cites only *force majeure* as potential grounds for a receiving State to decline an inspection and lays out steps to take through diplomatic or other channels for such a contingency.

EFFORTS TO RESOLVE ADHERENCE CONCERNS

The United States discussed bilaterally with the Kyrgyz Republic its VD11 commitments and failure to provide annual CSBMs data declaration. The United States has encouraged the Kyrgyz Republic to provide its overdue CSBMs data on its armed forces valid as of January 1, 2018 and to return to its previous practice of providing an annual CSBMs data declaration. The United States shared its concerns about the Kyrgyz Republic’s lack of transparency for large-scale exercises.

The United States at OSCE raised its concern with the Kyrgyz Republic for declining requests to conduct a Vienna Document Inspection on its territory without a valid basis under VD11 Chapter IX. The United States made clear its concern with this lack of adherence to VD11 and encouraged full adherence to VD11 commitments by the Kyrgyz Republic.

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)

The Republic of 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

Turkmenistan failed to provide CSBMs data on its armed forces (effective as of January 1, 2018) by December 31, 2017. Turkmenistan also failed to notify at least one major military exercise or activity for calendar year 2018.

CONDUCT GIVING RISE TO ADHERENCE CONCERNS

Turkmenistan did not provide by December 15, 2017 its annual VD11 data effective as of January 1, 2018. Turkmenistan has not provided data since January 2015, when it provided its data valid as of January 1, 2015.

Turkmenistan failed to provide advance notification of at least one major military exercise or activity during calendar year 2018.

ANALYSIS OF ADHERENCE CONCERNS

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

VD11, Chapter V, paragraph 38 states that participating States will provide notification in writing to all other participating States 42 days or more in advance of the start of notifiable military activities. Per the Vienna Document Plus Decision No. 9/12, at least one major military exercise or activity is to be notified annually if no military activity meets Chapter V notification thresholds.

EFFORTS TO RESOLVE ADHERENCE CONCERNS

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 CSBMs data on its armed forces valid as of January 1, 2018 and to return to its previous practice of providing an annual CSBMs data declaration.

The United States will continue to work with Turkmenistan to implement its Vienna Document commitments, especially with regard to the annual exchange of military information and the 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. 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 CSBM data on a timely basis, consistent with VD11, Chapter I commitments.

REPUBLIC OF TAJIKISTAN (TAJIKISTAN)

The Republic of Tajikistan (Tajikistan) 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. This is the first time Tajikistan’s adherence to the Vienna Document is being addressed in the Compliance Report.

FINDING

Tajikistan failed to notify at least one major military exercise or activity for calendar year 2018.

CONDUCT GIVING RISE TO ADHERENCE CONCERNS

Tajikistan failed to provide notification of at least one major military exercise or activity during calendar year 2018.

ANALYSIS OF ADHERENCE CONCERNS

VD11, Chapter V, paragraph 38 states that participating States will provide notification in writing to all other participating States 42 days or more in advance of the start of notifiable military activities. Per the Vienna Document Plus Decision No. 9/12, at least one major military exercise or activity is to be notified annually if no military activity meets Chapter V notification thresholds.

In March 2018, Tajikistani media reported that joint regional defense and mobilization drills involving 40,000 Tajikistani military personnel, Russian soldiers, and local personnel from across the region were held from March 6-14 at training grounds in the southern Tajikistani region of Khatlon. The exercises had not been notified in Tajikistan’s annual calendar nor in any separate Tajikistani notification, but Tajikistan allowed the United States to conduct an inspection in the area from March 12-15. Tajikistan also accepted two other Vienna Document inspections in 2018.

In July 2018, the Tajikistani media reported on a joint Russian-Tajik military exercise in the Gorno-Badakhshan Autonomous Region lasting from July 17-21. The exercise reportedly involved some 10,000 Tajikistan and Russian military and security personnel, local reservists, and armored vehicles. It was not clear how many personnel were determined to be subject to VD11 and therefore subject to VD11 thresholds for notification and observation (over 9,000 and 13,000 personnel, respectively).

The United States cannot determine conclusively if either exercise exceeded the VD11 notification threshold of 9,000 troops at any point during the exercise, or whether the exercises were conducted as a single activity or were under a single operational command. Even if Tajikistan concluded that this exercise was not subject to notification under VD11, Tajikistan could have reported it to fulfill the VD11 requirement to notify at least one major military exercise or activity annually even if no military activity meets Chapter V notification thresholds.

EFFORTS TO RESOLVE ADHERENCE CONCERNS

The United States discussed bilaterally with Tajikistan its VD11 commitments and shared concerns about lack of transparency for large-scale exercises.

The United States will continue to highlight with Tajikistan, 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 Tajikistan to be more transparent about its exercises to include providing additional details about their size and purpose.

REPUBLIC OF UZBEKISTAN (UZBEKISTAN)

The Republic of 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

Uzbekistan failed to provide CSBMs data on its armed forces (as of January 1, 2018) by December 31, 2018. Uzbekistan also failed to notify at least one major military exercise or activity for calendar year 2018.

CONDUCT GIVING RISE TO ADHERENCE CONCERNS

Uzbekistan did not provide by December 15, 2017 its annual VD11 data valid as of January 1, 2018 nor at any time during 2017 or 2018. Uzbekistan has not provided data since February 12, 2003, when it provided data valid as of January 1, 2003.

Uzbekistan failed to provide advance notification of at least one major military exercise or activity during calendar year 2018. According to press reports, Tajikistan and Uzbekistan conducted a joint exercise from September 18-22 with the participation of 600 troops between the two countries. Although this is well below any notification threshold under Vienna Document 2011, Uzbekistan could have reported it to fulfill the VD11 requirement to notify at

least one major military exercise or activity annually even if no military activity meets Chapter V notification thresholds.

ANALYSIS OF ADHERENCE CONCERNS

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

VD11, Chapter V, paragraph 38 states that participating States will provide notification in writing to all other participating States 42 days or more in advance of the start of notifiable military activities. Per the Vienna Document Plus Decision No. 9/12, at least one major military exercise or activity is to be notified annually if no military activity meets Chapter V notification thresholds.

EFFORTS TO RESOLVE ADHERENCE CONCERNS

The United States discussed bilaterally with Uzbekistan its VD11 commitments and failure to provide an annual CSBMs data declaration. The United States has encouraged Uzbekistan to provide its overdue CSBMs data on its armed forces valid as of January 1, 2018, and to return to its previous practice of providing an annual CSBMs 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 a Uzbekistan representative, including the Annual Implementation Assessment Meeting and annual data exchange, to encourage Uzbekistan and all other participating States to provide CSBM data on a timely basis, consistent with VD11, Chapter I commitments.

The United States will also stress 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 Uzbekistan to be more transparent about its exercises to include providing additional details about their size and purpose.

TREATY ON CONVENTIONAL ARMED FORCES IN EUROPE (CFE)

For a discussion of other nations' adherence to 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 2019, 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").

**U.S. Department of State
August 2019**