

**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 arms control, nonproliferation, and disarmament agreements in 2020, as well as the 2020 compliance and adherence of other nations to arms control, nonproliferation, and disarmament agreements and commitments, including confidence- and security-building measures (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, 2020 through December 31, 2020, unless otherwise noted.

The Compliance Report includes reporting and analysis at the levels of classification for which reliable supporting information is available. The unclassified version of this report recount as much information as possible, but certain issues can be discussed only at higher levels of classification. Some compliance concerns are raised and some findings of violations are made, for instance, only in the SECRET or TOP SECRET/SCI-level versions of this Report and not in the unclassified version.

ADHERENCE AND COMPLIANCE

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

Effective arms control requires countries to comply fully with arms control obligations and commitments they have undertaken. 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 also have a range of options and means to try to convince violators it is in their interest to return to compliance and to prevent violators from benefitting from their violations.

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 partners, the United States complies with its obligations under all applicable arms control, nonproliferation, and disarmament agreements. It is longstanding U.S. policy to comply with international legal obligations. To the extent the United States has determined that compliance with an obligation is no longer in the U.S. national security interest, the United States has sought to negotiate modification of the agreement in question or to withdraw from the agreement altogether – as indeed occurred in 2019 with the Intermediate-Range Nuclear Forces or INF Treaty.

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

OVERVIEW

This Report addresses U.S. compliance with arms control, nonproliferation, and disarmament agreements (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), 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

U.S. INSTITUTIONAL AND PROCEDURAL ORGANIZATION FOR ENSURING COMPLIANCE

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

In 1972, DOD established the first such department-level process. Under this compliance process, established at the conclusion of the Strategic Arms Limitation Talks (SALT) that led to arms control-related agreements on strategic offensive arms, key offices in DOD are responsible for overseeing DOD compliance with all U.S. arms control, nonproliferation, and disarmament agreements and commitments, including CSBMs. DOD components ensure that their implementing program offices adhere to DOD compliance directives and seek guidance from the offices charged with oversight responsibility. Similar processes have been established by other departments and agencies to ensure that their programs and activities comply with the United States' international obligations and commitments. For example, DHS similarly established a compliance review process to assess DHS-sponsored research for compliance with all relevant arms control 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 2020, the United States continued to be in compliance with all of its obligations under arms control, nonproliferation, and disarmament agreements. When other countries have formally raised a compliance concern regarding U.S. implementation activities, the United States has carefully reviewed the matter to confirm its actions were in compliance with its obligations.

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

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

Nevertheless, Russia continues to raise questions about U.S. compliance with the BWC. In 2020, the Russian Federation again questioned the activities of the Lugar Center for Public Health Research in Tbilisi, Georgia, and alleged that the U.S. Army Medical Research Directorate-Georgia (USAMRD-G), located at the Lugar Center “carries out double purpose research activities in the field of highly dangerous infectious diseases.”

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

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

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

The original deadline of 2012 could not be met because changes based on public safety and environmental concerns 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 95.74 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 continues to work very closely with the OPCW during the COVID-19 pandemic to ensure that both destruction sites remain in operation and have continuous on-site

inspector presence able to conduct verification activities while addressing the need to take measures to ensure the health and safety of inspectors and personnel at the sites.

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

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

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

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

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

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

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

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

Treaty on Conventional Armed Forces in Europe (CFE)

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

The United States continues to implement countermeasures vis-à-vis the Russian Federation, specifically the cessation of implementation of certain CFE Treaty obligations (notifications, data exchange, and inspections) in response to Russia's continued violation of its obligations to the United States under the CFE Treaty. These measures were closely coordinated with NATO Allies, who also continued to implement similar steps in their respective national capacities. Russia has not challenged this action. The United States continues to perform its obligations under the CFE Treaty vis-à-vis all other States Party.

Treaty on Open Skies (OST)

All U.S. activities during the reporting period were consistent with the obligations set forth in the Treaty on Open Skies (OST), while the United States was a State Party.

On May 22, 2020, the United States notified the States Parties to the OST that the United States had decided to withdraw from the treaty. In accordance with paragraph 2 of Article XV of the Treaty, a State Party's withdrawal takes effect six months after the date of notification. During the six-month period between the provision of notice and the U.S. withdrawal taking effect, the United States remained a Party to the OST, and complied with its provisions. On November 22, 2020, the United States' withdrawal took effect, and the United States is therefore no longer a State Party to the Treaty. Unless the United States decides to rejoin the treaty, future compliance reports will not include material on the OST.

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

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

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

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

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

PART II: OTHER STATES' COMPLIANCE WITH AND ADHERENCE TO ARMS CONTROL, NONPROLIFERATION, AND DISARMAMENT AGREEMENTS AND COMMITMENTS PERTAINING TO NUCLEAR ISSUES¹

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 submitted pursuant to Section (a)(10) of the Senate Resolution of Advice and Consent to Ratification of the Treaty Between the United States of America and the Russian Federation on Measures for the Further Reduction and Limitation of Strategic Offensive Arms (also known as the "Condition (a)(10) Report"), and appended to this Report.

¹ Plutonium Management and Disposition Agreement (PMDA) will no longer be covered in this section of the Compliance Report, unless a significant issue is newly identified.

PRESIDENTIAL NUCLEAR INITIATIVES CONCERNING TACTICAL NUCLEAR WEAPONS

This chapter reports on a unilateral arms control commitment by the Russian Federation (Russia).

In public speeches in 1991 and 1992, the presidents of the United States and the Soviet Union (and the Russian Federation or Russia after the dissolution of the Soviet Union) pledged, as a political commitment, to take separate but related steps regarding reductions in the number and deployment of their tactical nuclear weapons.² These unilateral pledges are referred to as the Presidential Nuclear Initiatives (PNIs).

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

- Elimination of its entire worldwide inventory of ground-launched short-range, that is, theater nuclear weapons;
- Return to the United States and destruction of all nuclear artillery shells and short-range ballistic missile (SRBM) warheads;
- Removal of all tactical nuclear weapons from surface ships, attack submarines, and land-based naval aircraft;³ and
- Destruction of many of these land- and sea-based warheads and securing remaining ones in central areas.

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

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

- Eliminate all nuclear mines, nuclear artillery munitions, and nuclear warheads for tactical missiles;

² The United States no longer uses the term “tactical nuclear weapon” preferring the term “non-strategic nuclear weapon” because we do not envision any use of nuclear weapons to be tactical in character or effect. We note that all nuclear weapons can have strategic implications. The use of any nuclear weapon would fundamentally alter the nature of a conflict.

³ President George H.W. Bush further explained that “The bottom line is that under normal circumstances our ships will not carry tactical nuclear weapons.”

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

After the dissolution of the Soviet Union, Russia's President Boris Yeltsin confirmed that Russia accepted responsibility for carrying out the PNI pledges. In a January 29, 1992, televised speech, President Yeltsin responded to President George H.W. Bush's second PNI pronouncement⁴ by further pledging to do the following with regard to tactical nuclear warheads:

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

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

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

The Department of State has previously raised questions publicly about Russia's fulfillment of its PNI pledges. In 2004 and 2006, Assistant Secretary of State Stephen Rademaker made clear U.S. concerns about Russia falling short in its implementation of its PNIs. On April 12, 2006, then-U.S. Assistant Secretary of State Stephen Rademaker said publicly: "The United States has fully implemented its undertakings under the Presidential Nuclear Initiatives. I am not aware of

⁴ President Bush made this second PNI during his 1992 State of the Union address. This PNI only addressed U.S. strategic forces.

anyone in the Russian government or elsewhere who questions whether the United States has done so. We believe that Russia has not completely fulfilled the Russian side of the Presidential Nuclear Initiatives.” The 2018 U.S. Nuclear Posture Review stated that Russia is either rejecting or avoiding its obligations or commitments under several instruments, including the PNIs. In the 2020 Compliance Report, the Department of State publicly detailed inconsistencies between Russia’s PNI commitments and its actions.

FINDING

The United States assesses that Russia is not adhering to all of its PNI commitments. Although Russia has consolidated its NSNW into “centralized” storage at fewer nuclear weapons storage sites, Russia’s efforts to retain NSNW for its ground forces are inconsistent with its PNI pledge to eliminate nuclear warheads for land-based tactical missiles. In a May 22, 2020, interview, Russian Deputy Foreign Minister Ryabkov claimed “Russia’s presidential initiatives have been fulfilled completely.” Despite this assertion, a 2014 statement by a Russian Ministry of Foreign Affairs (MFA) official that PNIs “are still carried out by Russia,” and other carefully worded statements by Russia that the PNIs are still “relevant” to Russia, the United States assesses, based on Russian activities, that Russia is not fully adhering to its PNI pledge to eliminate all nuclear warheads for its ground-based tactical missiles.

CONDUCT GIVING RISE TO ADHERENCE CONCERNS

Russia has provided little information substantiating the full implementation of its PNI pledges. General-Lieutenant Buzhinskiy of the Ministry of Defense (MOD) International Affairs Directorate told the United States in 2005 that Russia was revisiting some of its pledges on NSNW and that he “could not say that Russia...would implement all of its PNI pledges.” This was a change in tone from statements before 2003, in which Russian officials still held out the possibility that all PNI initiatives – including elimination of nuclear warheads for Ground Forces – would be implemented. In 2007, Russian Colonel-General Vladimir Verkhovtsev, then the chief of the MOD’s 12th Main Directorate (GUMO) – the Defense Ministry organization responsible for maintaining and securing Russia’s nuclear weapons stockpile – claimed that Russia had met its PNI commitments where “Russia particularly committed itself to removing tactical nuclear weapons from the ground forces completely. Those weapons were also cut by 50 percent in the Air Force, by 60 percent in missile defense troops and by 30 percent on nuclear submarines of the Russian Navy.”

Russia currently has an active stockpile of NSNW. Russia’s NSNW arsenal includes warheads for SS-21/Tochka-U/9K79-1 close-range ballistic missile (CRBM) system and nuclear-capable version of the SS-26/Iskander short-range ballistic missile (SRBM) system and the SSC-7/9M728 short-range cruise missile.

Russian officials have made a series of public statements that say either explicitly or implicitly that Russia’s ground forces are equipped with nuclear warheads, and in particular that the SS-26 SRBM is nuclear-capable. Addressing the press after an April 29, 1999, Security Council meeting, then-Secretary of the Security Council Vladimir Putin reportedly said that President Yeltsin had signed a decree on a new concept for the development and use of NSNW; Russian

press reports following the meeting said that the Security Council approved a nuclear capability for the SS-26. In May 2000, Colonel-General Yuri Bukreyev, then Chief of Staff of the Ground Forces Directorate, describing the current and future state of affairs of the Ground Forces in *Armeyskiy Sbornik*, declared that the most important requirements for the Ground Forces included the ability to carry out combat missions with the use of both nuclear and conventional weapons, indicating Russia had retained nuclear warheads for its SS-21 CRBM system. Colonel-General Vladimir Nikolayevich Zaritskiy, Chief of the Armed Forces Rocket Troops and Artillery, told the Russian press in November 2003 that his troops continued to train in the use of NSNW in order to remain at “permanent readiness” to carry out nuclear strikes. In 2008, his successor noted to the press that the “missile forces and artillery solve the tasks of ... nuclear destruction of the enemy in operations and combat operations.” According to a report by the Russian news agency Interfax, General Nikolai Makarov, the chief of Russia’s General Staff, publicly stated in late 2008 that Russia regarded tactical nuclear weapons as “a restraining factor for the huge numbers of [conventional] weapons located in [NATO] European countries. And General Verkhovtsev (see above) stated publicly in late 2007 that Russia “has a difficult southern sector, it has nuclear powers on its borders, and therefore tactical nuclear weapons represent for the Russian Federation a deterrence factor against aggressive influences hostile to it.”

According to a 2011 review of the accomplishments of a senior Russian nuclear weapons scientist at the Russian nuclear weapons laboratory in Sarov, Russia created a nuclear warhead for the Iskander missile. In November 2018, the Russian military’s TV channel, TVZvesda, reported both the Iskander SRBM (the SS-26) and the SSC-7 cruise missile can carry up to a 50 kiloton nuclear warhead. In November 2019, the Russian MoD noted that the Iskander complex can carry a nuclear warhead in a website announcement that a missile brigade unit in western Russia was receiving Iskander equipment to replace its SS-21s. The Russian MoD noted that the Iskander can be equipped with a nuclear warhead in its announcement on its website.

Iskander missile equipment began to enter the Ground Force inventory in 2010-2011, replacing the SS-21 CRBM system in the missile brigades. Each Iskander Transporter-Erector-Launcher (TEL) can carry two missiles, as compared to the SS-21 TEL, which carries one. In November 2019, the Chief of the Ground Forces, Colonel General Oleg Salyukov, said rearmament with the Iskander complex was completed. Based on publicly released data, the United States estimates that by the beginning of 2020 Russia had deployed enough Iskander launchers to launch 288 nuclear-capable SS-26 or SSC-7 missiles (that is, 144 launchers with two missiles apiece at 12 brigades).

Additional information is provided in the higher classification Annex.

ANALYSIS OF ADHERENCE CONCERNS

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

In response to the 2020 Compliance Report, Russia's Foreign Ministry published on July 8, 2020, seven paragraphs of commentary, none of which addressed whether Russia adheres to the PNIs. However, in a May 22, 2020, interview, Russian Deputy Foreign Minister Ryabkov claimed "Russia's presidential initiatives have been fulfilled completely. The number of nonstrategic nuclear warheads has been reduced by three-fourths and all weapons of this nature have been moved to Russian national territory."

Based on the information reported above, Russia's efforts to retain and to produce new nuclear warheads for its Ground Forces are inconsistent with its PNI pledge to cease production of nuclear warheads for land-based tactical missiles, and nuclear mines, and to eliminate its stockpile of these weapons.

EFFORTS TO RESOLVE ADHERENCE CONCERNS AND NEXT STEPS

The United States will continue to raise in bilateral settings and publicly its concerns with Russia's failure to eliminate all nuclear warheads for its ground-based tactical missiles.

NUCLEAR NON-PROLIFERATION TREATY (NPT)

This chapter of the Report covers developments relevant to other nations' compliance with the 1968 Treaty on the Non-Proliferation of Nuclear Weapons (Nuclear Non-Proliferation Treaty or NPT), including their compliance with related obligations under Comprehensive Safeguards Agreements (CSAs) with the International Atomic Energy Agency (IAEA).⁵ 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 (AP) to their CSA.⁶ The chapter focuses on developments in Burma, Iran, North Korea, and Syria.

As of the end of 2020, there were nine non-nuclear-weapon States (NNWS) Party to the NPT that had not yet brought into force a CSA with the IAEA.⁷ 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. The AP 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 2020, 136 States Party had an AP that had entered into force, and Iran was provisionally applying its AP pending its entry into force. The Protocol Additional to the Agreement between the United States of America and the IAEA for the Application of Safeguards in the United States of America (U.S. AP) entered into force for the United States on January 6, 2009.

⁵ Article III of the NPT requires each NPT non-nuclear weapon 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 a State with very limited quantities of nuclear material, the State also may enter into a Small Quantities Protocol to the CSA that reduces the safeguards implementation burden for such States.

⁶ 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 States Party. With a supermajority of NPT States Party now implementing APs, in practice the combination of a CSA together with an AP has become the international standard for IAEA verification.

⁷ The NPT States Party without a CSA in force as of December 31, 2020, are as follows: 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 AP in 2013 and its announcement that it would adhere to the modified SQP contributed significantly to U.S. confidence in the civilian leadership's peaceful intentions regarding its nascent nuclear program. However, more than five years have passed and neither the AP nor the modified SQP have entered into force. It was the view of the United States at the end of 2020 that efforts to bring them into force and implement them would require cooperation between the civilian and military elements of the Burmese government. Notwithstanding the political situation in Burma, the United States urges the Burmese government to complete the work necessary to bring the AP and modified SQP into force. Burma's implementation of the AP and a modified SQP will improve confidence regarding an assessment of Burma's NPT compliance. At the same time, the United States urges the full restoration of the democratically-elected civilian government, which has been a key partner in progress to date.

CONDUCT GIVING RISE TO COMPLIANCE CONCERNS

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

Burma publicly announced its intention to acquire a nuclear research reactor for peaceful purposes as early as 2002, and in 2007 it signed an agreement with Russia for assistance building a nuclear research center, including a light-water research reactor. In 2010, an analysis commissioned by a dissident group alleged that Burma was seeking nuclear technology, concluding that "[t]his technology is only for nuclear weapons and not for civilian use or nuclear power." The Burmese government at the time dismissed the claims as "groundless allegations." Burma reported in 2010 that it had suspended its reactor plan with Russia "due to inadequacy of resources and the government's concern for misunderstanding it may cause." Russia and Burma did sign a Memorandum of Understanding (MOU) for cooperation in peaceful use of nuclear energy on June 18, 2015, and the two countries reportedly established a working body for nuclear technology cooperation under the MOU in October 2016. The Burmese government had

described the MOU as addressing cooperation on research and development of nuclear energy for peaceful purposes, as well as nuclear safety, assessments of the environmental impact of nuclear energy, and nuclear medical technology. No significant nuclear projects between the two countries have yet moved forward as a result of this MOU.

Additional information is provided in the higher classification Annex.

ANALYSIS OF COMPLIANCE CONCERNS

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

When Burma’s AP enters into force, it will be obligated to, among other things, provide the IAEA with a declaration that includes information on any nuclear facilities and additional nuclear-related activities. Burma will also be required to provide the IAEA with expanded inspection access, including to additional parts of its nuclear research program. The AP will also enable the IAEA to collect samples and information to verify compliance. When Burma modifies its SQP to conform to the 2005 update, this will, among other things, require it to declare all nuclear material. Additionally, Burma will be required to provide early design information for any planned nuclear facilities and corresponding inspection access, obligations which are currently held in abeyance under the existing SQP.

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 was not under the civilian government’s control, the United States had no evidence of ongoing activities under Burma’s civilian government that raised compliance concerns. Burma’s declarations of nuclear-related activities and locations under an AP, its initial declaration of nuclear material under a modified SQP, and its responsiveness to IAEA questions following EIF and implementation of an AP and modified SQP will be key to assessing activities that have raised concerns in the past regarding its military’s nuclear intentions and activities.

Additional information is provided in the higher classification Annex.

EFFORTS TO RESOLVE COMPLIANCE CONCERNS AND NEXT STEPS

The United States has held a series of workshops for Burmese stakeholders, which included a complementary access exercise to increase awareness of the AP and the modified SQP, and to help prepare for their future implementation. A workshop was held in August 2018, at which experts from the IAEA and the U.S. Department of Energy consulted with representatives from Burma’s Attorney General’s office and legislative committees in parliament. In 2020, the United States continued to emphasize the importance of ensuring the cooperation of all relevant agencies to provide complete reporting to the IAEA, address all IAEA outstanding questions and

concerns regarding Burma's nuclear activities, and to bring the AP into force and update the SQP. The United States worked with partners, particularly with Japan and Australia, to encourage Burma's civilian government to bring the AP into force and to update the SQP. Such efforts going forward must be assessed in the context of engagement with the military regime.

DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA (NORTH KOREA)

FINDING

The Democratic People's Republic of Korea (North Korea or DPRK) was in violation of its obligations under Articles II and III of the NPT and its CSA with the IAEA at the time it announced its withdrawal from the NPT in 2003, and it remains accountable for these violations. North Korea's continuing nuclear activities make clear that it also has not adhered to its commitments in the 2018 Singapore Summit Joint Statement to work towards the complete denuclearization of the Korean Peninsula and in the 2005 Joint Statement of the Six-Party Talks to abandon all nuclear weapons and existing nuclear programs, and to return at an early date to the NPT and IAEA safeguards. As discussed in prior Reports, North Korea failed to adhere to its commitments under the 1994 Agreed Framework. North Korea is in violation of its IAEA safeguards obligations.

CONDUCT GIVING RISE TO COMPLIANCE CONCERNS

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

Previous editions of this Report have described in detail 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 further 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.

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

Production Facilities

In a September 2020 report, the IAEA assessed, based on indicators and its analysis, that it is almost certain the 5MW(e) reactor has remained shut down since early December 2018.

The IAEA also reported that, as of September 2020, activity observed at Yongbyon Radiochemical Laboratory, indicates that a physical presence has been maintained there.

In August 2020, the IAEA noted there were activities consistent with production of enriched uranium at the reported centrifuge facility located with the Yongbyon Nuclear Fuel Rod Fabrication Facility. In 2017, the IAEA Director General Amano said that North Korea's uranium enrichment facility had doubled in size, noting that the situation had "gone into a new phase." In August 2019, the IAEA noted that it had observed no further construction or renovation work since 2017.

North Korea is also constructing an experimental light water reactor (ELWR) at Yongbyon, which North Korea revealed publicly in 2010. As previously reported, during late September and early October of 2018, the IAEA reported it observed activities consistent with the transfer of major reactor components into the reactor containment building. No additional transfers of such components have been observed since then. Based on observations of activity near the ELWR, including deliveries of materials and the presence of construction vehicles, it is likely that internal construction work has continued during the current reporting period. The IAEA has not observed any indications of reactor operation, although there was an indication of a test of the infrastructure for cooling water during April 2020, similar to that which was observed in March 2019.

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

In August of 2020, the IAEA reported that there were indications of ongoing mining, milling and concentration activities at locations previously declared as the Pyongsan uranium mine and Pyongsan uranium concentration plant.

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

Testing

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

Kim Jong Un announced on April 20, 2018, that North Korea would discontinue all nuclear and ICBM tests and dismantle the P'unggye Nuclear Test Site. North Korea announced on May 25, 2018, that the P'unggye Nuclear Test Site had been "completely dismantled." In a separate statement, the Nuclear Weapons Institute of the DPRK noted that "dismantling the nuclear test ground was done in such a way as to make all the tunnels of the test ground collapse by

explosion and completely close the tunnel entrances.” Foreign journalists were invited to witness the “dismantlement” during a ceremony on May 24; however, international inspectors were not invited to verify the process, so the United States is unable to confirm the extent to which the site has been dismantled. Although Kim Jong Un committed to allow a visit by U.S. experts to the P’unggye Nuclear Test Site, this visit has yet to occur.

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

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

Additional information is provided in the higher classification Annex.

ANALYSIS OF COMPLIANCE CONCERNS

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

North Korea was in violation of its obligations under Articles II and III of the NPT and its CSA before it announced its withdrawal from the NPT in 2003. Throughout 2020, the United States continued to have significant concerns regarding North Korea’s nuclear weapons program and its continued production of fissile material.

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

EFFORTS TO RESOLVE COMPLIANCE CONCERNS AND NEXT STEPS

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

dismantle the Dongchang-ri missile engine test site and launch platform under the observation of experts from relevant countries.”

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

President Trump and Kim Jong Un briefly met a third time on June 30, 2019, at the Demilitarized Zone, but no detailed discussions on nuclear issues occurred.

On October 5, 2019, the United States and the DPRK held working-level talks between Special Representative Biegun and his DPRK counterpart Kim Myong Gil in Stockholm, Sweden. While no arrangements were reached, the two sides exchanged views on the denuclearization of the Korean Peninsula.

On January 1, 2020, Kim Jong Un, stated when referring to the DPRK “halting its nuclear test and ICBM test-fire and shutting down the nuclear-test ground,” that “there is no ground for us to get unilaterally bound to the commitment any longer.”

During the reporting period, in a variety of multilateral fora, including the UN General Assembly, the UN Security Council, the Asia-Europe Meeting, the East Asia Summit, 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 remains ready to engage North Korea in a constructive negotiation; however, until the final, fully verified denuclearization of North Korea is achieved, UN and U.S. sanctions will remain in place. The United States continues to work with a broad range of partners and the international community on the need for continued pressure on North Korea – and the need for continued vigilance against its proliferation activities worldwide – in order to impede its ability to sustain and advance its unlawful nuclear and ballistic missile programs and to incentivize North Korea to engage in sustained and intensive negotiations with the United States to ultimately achieve complete denuclearization. The United States has also taken enforcement action, including U.S. Treasury sanctions designations, against those involved in UN and U.S. sanctions evasion.

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

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

ISLAMIC REPUBLIC OF IRAN (IRAN)

FINDING

NPT and Comprehensive Safeguards Agreement

During the 2020 reporting period, the IAEA Director General (DG) issued several reports on Iran that make clear that serious, outstanding concerns remain regarding possible undeclared nuclear material and activities in Iran today. In November 2019, the Acting IAEA DG first reported the IAEA's detection of chemically processed uranium particles at an undeclared location in Iran and noted that this indicates the possibility of undeclared nuclear material in Iran. At the time, the Acting DG stressed that "time is of the essence" for Iran to provide full cooperation. Despite exchanges between the Agency and Iran, the DG reports that as of November 2020 Iran had not provided technically credible or satisfactory answers to the IAEA's questions. As of the end of the reporting period, the matter remained unresolved.

In addition, the IAEA reported during 2020 that multiple other investigations into possible undeclared nuclear material and activities in Iran were open and ongoing. In particular, in March and June 2020, the IAEA DG reported that Iran had failed to provide the IAEA with required access to two specified locations not declared by Iran, with respect to which the Agency had questions about possible undeclared nuclear material and nuclear-related activities, and had not responded substantively to the IAEA's requests for clarification regarding possible undeclared nuclear material or activities at those locations and a third, unspecified location. Iran subsequently provided the required access to the two specified locations in August and September 2020. The United States has made clear that providing required access is only the first step toward resolving the IAEA's concerns and questions, and that Iran must provide the IAEA with any requested clarifications as required by its safeguards obligations without delay.

Based on IAEA reporting on the implementation of Iran's comprehensive safeguards agreement (CSA) and the Additional Protocol (AP), the United States has concluded that serious concerns remained regarding possible undeclared nuclear material and activities in Iran as of the end the reporting period. For example, the IAEA continues to investigate the possible presence of undeclared uranium metal in Iran in the 2003 timeframe and its possible location today. The potential presence of undeclared uranium metal in Iran would be of significant proliferation concern given its relevance to nuclear weapons research and development. The IAEA's ongoing safeguards investigations and Iran's failure for much of the reporting period to provide the necessary cooperation with the IAEA in connection with them raise concern with regard to Iran's compliance with its obligation to accept safeguards under Article III of the NPT

Any intentional failure by Iran to declare nuclear material would constitute a clear violation of Iran's NPT-mandated CSA, and would constitute a violation of Article III of the NPT itself. As of November 2020, the IAEA DG continued to evaluate Iran's declarations under its AP and to

seek an explanation from Iran regarding the presence of chemically processed uranium particles at a location in Iran not declared to the Agency

During the reporting period, Iran continued to expand its uranium enrichment activities and stocks of enriched uranium, key factors in the amount of time the United States assesses would be required to produce enough fissile material for a nuclear weapon or device, should Iran decide to pursue nuclear weapons.

Iran's efforts to retain files, documents, and personnel related to its pre-2004 nuclear weapons program – as revealed in the Iranian nuclear archive acquired by Israel in 2018 – suggest that Iran may have maintained this information at least in part to preserve technical expertise relevant to a nuclear weapons capability, and potentially to aid in any future effort to pursue nuclear weapons again, if a decision were made to do so. If Iran were to manufacture or otherwise acquire a nuclear weapon, such actions would violate its obligations under Article II of the NPT.

CONDUCT GIVING RISE TO COMPLIANCE/ADHERENCE CONCERNS

History of Past NPT Violations

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

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

From 2006-2013, as detailed in previous Compliance Reports as well as multiple IAEA reports, Iran continued to perform uranium enrichment-related and heavy-water-related activities in contravention of both UNSC and IAEA BOG resolutions, including: research and development work on advanced centrifuges; enrichment of uranium up to nearly 20 percent at both the Natanz Pilot Fuel Enrichment Plant (PFEP) and the Fordow Fuel Enrichment Plant; construction of parts of the IR-40 heavy water-moderated research reactor at Arak, which was suited to weapons

grade plutonium production; and operation of its heavy water production plant at Arak. During this timeframe, Iran did not fully cooperate with the IAEA with regard to its declared facilities. In particular, as noted in previous versions of this report, Iran did not provide design information or report design changes in advance of any action taken to modify existing facilities or construct new ones, as required by modified Code 3.1 of the Subsidiary Arrangements to Iran's CSA.

From 2008 through 2014, the IAEA reported ongoing concerns about the possible existence in Iran of undeclared nuclear-related activities involving military-related organizations. The Annex to the November 2011 report of the IAEA DG detailed the basis for concerns regarding what the IAEA then called the possible military dimensions (PMD) of Iran's nuclear program. The report stated that, according to credible reports from multiple sources, Iran had a structured military program through 2003, including activities related to the development of a nuclear payload for a missile, and that some nuclear weapon-related activities may have continued after 2003. Despite these revelations, Iran continued to refuse to acknowledge or provide certain information about the military dimensions of its past nuclear activities. On December 2, 2015, the IAEA issued its Final Assessment on Past and Present Outstanding Issues regarding Iran's Nuclear Program. The report noted areas where the IAEA did not receive sufficient information from Iran in response to its inquiries, or where other information available to the IAEA did not support Iran's statements. This final PMD report found that the coordinated nuclear weapons program was discontinued in 2003, although certain weapons-applicable work related to computer modeling and explosive detonation remained ongoing in Iran until 2009.

In December 2015, following receipt of the IAEA DG's Final Assessment, the IAEA Board of Governors adopted a resolution that noted the DG's Final Assessment and stated its decision to close consideration of the PMD agenda item and terminate previous BOG resolutions following Iran's verified completion of certain nuclear-related actions specified in the JCPOA. With this resolution the BOG turned its focus to a new agenda item covering verification and monitoring of the JCPOA in Iran. The United States made clear at that time and since that the closing of the PMD agenda item does not preclude the IAEA from investigating any new indications that Iran may possess undeclared nuclear material or be pursuing undeclared nuclear activities. On January 16, 2016, the JCPOA was implemented between Iran and the P5+1 (United States, Russia, China, UK, France, and Germany), and the IAEA DG reported that it had verified that Iran had completed the nuclear-related steps specified in the JCPOA, resulting in corresponding actions being taken by the United States and EU to lift nuclear-related sanctions on Iran consistent with JCPOA commitments.

In May 2018, the United States announced its exit from the JCPOA and subsequently began the re-imposition of U.S. sanctions on Iran that had been lifted or waived under the deal.

Renewed Concerns in Recent Years

The disclosure in 2018 by Israel of Iranian records from the Amad Plan – Iran's pre-2004 nuclear weapons program – raised additional questions about Iran's concealment of critical information about its past nuclear weapons activities from the IAEA. Iran's retention of these files and information and its assignment of key Amad Plan-era scientists and officials into a new organizational structure affiliated with Iranian military entities, and under the leadership of the

Amad Plan's former head, suggest that Iran undertook these efforts at least in part to preserve technical expertise relevant to a nuclear weapons capability, and potentially to aid in in any future efforts to pursue nuclear weapons, if a decision were made to do so.

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

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

The IAEA's final quarterly report of 2019 notes that "the Agency has detected natural uranium particles of anthropogenic origin at a location in Iran not declared to the IAEA. It is essential for Iran to continue interactions with the Agency to resolve the matter as soon as possible."

The IAEA has confirmed to Member States in closed briefings that the undeclared site referenced in the Acting DG's November 2019 report is the Turqzabad warehouse site publicly highlighted by Israeli Prime Minister Netanyahu in September 2018.

The summary of the November 21 IAEA Board meeting noted that several members "urged the Secretariat to keep the Board informed of any developments regarding Iran's cooperation with the Agency."

The IAEA continues to investigate the original source of the uranium particles detected at the undeclared location in Iran. Iran has thus far failed to provide an explanation for the presence of the detected uranium particles that is consistent with the IAEA's technical analysis.

Iranian President Rouhani announced on May 8, 2019, one year following President Trump's announcement of the cessation of the United States' participation in the JCPOA, that Iran would begin reducing its performance of key nuclear commitments under the deal if Iranian demands with regard to sanctions relief were not met. Iran then began exceeding key nuclear-related restrictions in the JCPOA on a step-by-step basis, with an announcement of a new step approximately every 60 days. The IAEA continues to monitor Iran's nuclear activities, including those that exceed JCPOA limits.

At the time, Iran most likely pursued this phased approach in an effort to generate negotiating leverage with the United States and European participants in the JCPOA.

In mid-June 2019, Iran publicly announced it would exceed the low enriched uranium stockpile volume limit 300kg, on July 7, Iran announced its intent to enrich above the 3.67 percent level. In early September 2019, Iran announced that its next step to scale back implementation of its JCPOA commitments would involve lifting all limits on its development of more advanced centrifuges for uranium enrichment. President Rouhani stated that “all of our commitments for research and development under the JCPOA will be completely removed,” and announced new advanced centrifuge research and development (R&D) activities, along with the production and testing of new models of centrifuges for potentially greater efficiency.

On November 5, 2019, Iran announced that its fourth step to scale back implementation of the JCPOA would involve injecting uranium gas into more than 1,000 centrifuges at its Fordow enrichment facility to produce enriched uranium. The Fordow facility, revealed as a covert enrichment facility in 2009, is a deeply buried underground facility near the Iranian city of Qom. Iran stated that the Fordow facility was ready to produce 20 percent uranium enrichment with an increased number of centrifuges.

In his November 2019 report to the Board of Governors, the Acting IAEA Director General reported on additional activities and developments with respect to Iran’s uranium enrichment activities. In October and November 2019, Iran had completed installation of additional IR-2, IR-4, IR-5, IR-6, and IR-8 centrifuges at the PFEP at Natanz, and intended to produce more enriched uranium using these machines once these cascades were completed. Iran also informed the IAEA that it was installing additional advanced centrifuges, including the IR-7, IR-8B, IR-9, IR-s, and IR-6s at the PFEP, and that it was planning to test a new generation of centrifuges at a new location. All of these activities exceeded the JCPOA limits, and the addition of these centrifuges enhances Iran’s uranium enrichment capacity

Current Activities of Concern

Expanding Nuclear Program Beyond Accepted Restrictions:

During the reporting period, Iran continued to expand its proliferation-sensitive nuclear activities. IAEA reporting in 2020 makes clear that Iran continues to significantly expand its proliferation-sensitive uranium enrichment activities, and at the end of the year, it exceeded by twelve-fold the JCPOA’s cap of 300 kg on the amount of LEU (UF₆ mass), which is equivalent of 202.8 kg (uranium mass). Iran is accumulating LEU at the Natanz-based above ground Pilot Fuel Enrichment Plant (PFEP), the underground Fuel Enrichment Plant (FEP), also at Natanz, and at the deeply buried Fordow Fuel Enrichment Plant near Qom. From July 2019 to the end of the reporting period, Iran enriched uranium up to 4.5% U-235. The IAEA reported that as of November 2, 2020, Iran possessed a total stockpile of about 3,613.8 kg LEU (UF₆ mass), all enriched below 5 percent, or the equivalent of 2,442.9 kg uranium mass (plus 337.5 kg since the September report).

On January 5, 2020, Iran announced it was “abandoning the last key point of operational restrictions under the JCPOA, namely the limitations on the number of the centrifuges,” and that its nuclear program “will move forward only according to its technical needs.” It is now in nonperformance of many of the restrictions outlined by the JCPOA, which Tehran says it hopes

will pressure the other nations involved to increase economic incentives to make up for the tough sanctions imposed by Washington after the U.S. withdrawal. Iranian officials have stated that their actions are reversible if the European JCPOA participants meet their economic demands and the United States ends its sanctions; however, the experience Iran gains from advanced centrifuge R&D work could lead, over time, to irreversible knowledge gains.

On January 20, 2020, the UK, France, and Germany triggered the JCPOA Dispute Resolution Mechanism. At that time, Iran warned that it would withdraw from the NPT if its nuclear program was referred to the UN Security Council.

On July 1, an explosion at the Natanz Fuel Enrichment Plant destroyed the Iran Centrifuge Assembly Center (ICAC), a recently completed aboveground workshop at Natanz designed for large-scale assembly and quality control of advanced centrifuges. Atomic Energy Organization of Iran (AEOI) Chief Salehi announced in September 2020 that Iran is building a new centrifuge assembly plant / hall underground in the mountains in Natanz, stating that it will be “a more modern, larger and more comprehensive hall in all dimensions.” Iran’s centrifuge manufacturing is subject to continuous monitoring and verification, and the IAEA has noted that once the facility is operational, it would have to be included in Iran’s AP declarations.

Public satellite imagery provided additional information on the new centrifuge assembly plant at Natanz. Press reports noted that new tunnel entrances for underground construction are visible under a ridge in the mountain foothills south of the Natanz FEP, about 140 miles south of Tehran, and the underground construction is compatible with a facility about the same size as the centrifuge assembly building that was destroyed and that Iran indicated it was rebuilding in the mountains. A flurry of activity in Natanz also captured by satellites in recent months includes the building of new roads and additional excavations, which started after the explosion in July. According to public reporting, imagery analysts had previously identified the area and said that additional tunnels are being constructed, suggesting work on an even larger underground complex is underway.

According to the IAEA report in November, Iran continues to install, test, operate, and accumulate enriched uranium from advanced model centrifuges at the Natanz enrichment facility. Iran is testing 14 advanced centrifuge designs at the PFEP, six of which were introduced to the PFEP for the first time within the last year. The centrifuges operating at the PFEP include: IR-1, IR-2m, IR-3, IR-4, IR-5, IR-6, IR-6m, Ir-6s, IR-6sm, IR-7, IR-8, IR-8s, IR-8B, IR-s, and IR-9. Specifically the IAEA reported that five smaller cascades of up to nine IR-4 centrifuges, eight IR-5 centrifuges, six IR-6 centrifuge and another cascade of 20 IR-6 centrifuges, 10 IR-6s centrifuges are operational and accumulating enriched uranium at the pilot fuel enrichment plant. Two larger cascades of 152 IR-4 centrifuges 110 IR-6 centrifuges are also operational and accumulating enriched uranium at the PFEP. In addition, since March 2020, the IAEA reported that there are 1, 057 IR-1 centrifuges installed at Fordow, many of which are enriching uranium, inconsistent with Iran’s JCPOA commitments regarding this facility.

In recent months, the IAEA reported that Iran is moving centrifuges from an above-ground facility to its underground facility at Natanz, and continues to increase the numbers of centrifuges at Natanz. In November, the IAEA reported details of Iran’s decision to transfer

cascades of centrifuges, comprising IR-2m, IR-4, and IR-6 centrifuges, from the above-ground pilot plant to the main enrichment hall underground at Natanz. Tehran informed the agency that the decision to move the centrifuges was made “with the aim that eventually all of the enrichment R&D activities will be concentrated in this area,” but it is possible that Iran was also motivated to move the cascades after an apparent act of sabotage on its centrifuge assembly facility in July caused significant damage to advanced machines at that location. The underground enrichment hall at Natanz is presumably more protected from sabotage attacks. The November 11 reports indicates that only the cascade of IR-2m centrifuges had been moved to Natanz underground and that they were not yet enriching uranium. One week later, however, in his November 18 remarks to the BOG, the IAEA DG updated his report to note that Iran had begun feeding UF₆ into the recently installed cascade of 174 IR-2m centrifuges at the FEP in Natanz. So far, the 174 IR-2m cascade is the first of three advanced cascades Iran plans to transfer. This cascade joins 30 cascades of first-generation IR-1 centrifuges already producing LEU at Natanz, the only enrichment capacity allowed for in the JCPOA for 10 years.

Iran’s expansion of uranium enrichment activities, including changes to centrifuge cascade configuration at the Natanz fuel enrichment plant and installation of advanced, more efficient centrifuges in underground facilities, allow Iran to enrich more uranium more quickly and to higher levels. These actions and activities move Iran closer to having the materials necessary to produce a nuclear weapon in the event that there is a future decision to pursue one. In addition, increases in numbers of centrifuges and low enriched uranium stockpiles beyond JCPOA limits reduce the amount of time Iran would require for a breakout, in which Iran attempts to produce weapons-grade uranium for a testable nuclear device using its declared nuclear facilities, should Iran decide to do so.

Following the late November 2020 assassination of Mohsen Fakhrizadeh, the architect of the Amad Plan, the Iranian Parliament adopted a bill, approved by the Guardian Council on December 2 and made law, which requires the Iranian government to further expand Iran’s nuclear activities, likely at least in part as further leverage toward sanctions relief. The law requires, among other things, that Tehran produce a minimum 120 kg of 20% enriched uranium annually. The bill includes requirements for the AEOI to install “at least 1000” IR-2M centrifuges within three months of the passage of the law. It also requires the Iranian government to reduce its cooperation with the IAEA to only that required by its CSA, including cessation of “the voluntary implementation” of provisions of its AP, if Iran’s banking relations in Europe as well as the volume of oil purchases by Europe do not return to satisfactory conditions within three months of the law’s enactment.

The new law prompted the E3 (France, Germany, and the United Kingdom) to issue a Joint Statement in alarm, stating that Iran’s move to substantially increase uranium enrichment was “deeply worrying” and limit IAEA monitoring access goes against the spirit of deal and would be “incompatible with the JCPOA and Iran’s wider commitments.”

IAEA NPT Safeguards Reports – Questions Related to Iran’s CSA and AP

The IAEA continues to investigate the original source of chemically processed uranium particles detected at the undeclared location in Iran, including whether it originated at a site not disclosed

to the IAEA. Iran has thus far failed to provide a credible explanation for the presence of the detected uranium particles that is consistent with the IAEA's technical analysis. In March 2020, the IAEA DG issued a standalone safeguard report to the Board – the first of its kind since 2015 to highlight his new concerns.

As previously reported, the IAEA visited the undeclared site in early 2019 and took environmental samples which revealed chemically processed⁸ uranium particles. Based on subsequent information provided by Iran, the Agency took environmental samples at two declared nuclear facilities in Iran. The Agency's assessment of the analyses of these samples was that some findings were not inconsistent with information provided by Iran, but there were a number of other findings for which further clarifications and information needed to be provided and questions needed to be answered by Iran.

These other findings included the presence, at the location in Iran not declared to the Agency, of isotopically altered particles of low enriched uranium, with a detectable presence of U-236, and of slightly depleted uranium. The DG's November 11, 2020 report indicates that these particles had been identified as a result of the IAEA's further analysis of the samples it took in February 2019 and which was conveyed to Iran for the first time in a letter dated September 2, 2020.

On October 21, 2020 Iran provided additional information and explanations. In relation to the low enriched uranium particles, Iran said that "the evidence of such contamination is under investigation." The Agency considered Iran's response to be unsatisfactory because it was not technically credible and therefore, sought further clarifications and information from Iran, taking note of the amount of time that had elapsed in addressing these issues. On November 5, Iran provided some more information related to its explanations. Following an assessment of this new information the Agency informed Iran on November 9 that it continues to consider Iran's response to be not technically credible.

At the November 2020 Board, the DG emphasized that the presence of the uranium particles of anthropogenic origin, including isotopically altered particles, at the location not declared to the Agency, "still needs to be fully and promptly explained by Iran to allay any possible concerns about the correctness and completeness of Iran's safeguards declarations." The report further notes that evaluations regarding the absence of undeclared nuclear material and activities for Iran are ongoing.

The IAEA DG's standalone safeguards report in March 2020, also highlighted questions relating to possible undeclared nuclear materials and activities in Iran not related to the warehouse site. In his March 9 address to the BOG, the DG stated that "[t]he Agency has identified a number of questions related to possible undeclared nuclear material and nuclear-related activities at three locations that have not been declared by Iran."

Based on the Agency's technical analysis, including evaluation of all safeguards-relevant information, the questions and requests for clarifications relate to the three locations indicated below as follows:

⁸ (U) Since IAEA reports use chemically processed, anthropogenic, and man-modified or man-made as terms for uranium particles, the Compliance Report uses these terms interchangeably.

- The possible presence in Iran between 2002 and 2003, at a location later identified by the Agency to Iran, of natural uranium in the form of a metal disc, with indications of its undergoing drilling and hydriding, which may not have been included in Iran's declarations; the origin of this disc; and where such material is currently located. As previously reported by the Agency, this location underwent extensive sanitization and levelling in 2003 and 2004. Consequently, the Agency has assessed that there would be no verification value in conducting a complementary access at this location.
- The possible use or storage of nuclear material and/or conducting of nuclear-related activities, including research and development activities related to the nuclear fuel cycle, at a location in Iran specified by the Agency. This location may have been used for the processing and conversion of uranium ore including fluorination in 2003. This location also underwent significant changes in 2004, including the demolition of most buildings; and
- The possible use and storage of nuclear material at another location specified by the Agency where outdoor, conventional explosive testing may have taken place in 2003, including in relation to testing of shielding in preparation for the use of neutron detectors. From July 2019 onwards, the Agency observed activities consistent with efforts to sanitize part of the location and/or repurpose it for use by another entity.

The DG had notified Iran in January, pursuant to Article 4.b (i) and Article 5.c of the AP, to provide access to two specified locations in order to carry out location-specific environmental sampling for the purpose of assisting the IAEA in assuring the absence of undeclared nuclear material and activities and to resolve the questions identified in its previous letters. The IAEA reported that on January 27, Iran informed the Agency verbally that it was unable to provide access to either location. On January 28, 2020, Iran informed the Agency that it “will not recognize any allegation on past activities and does not consider itself obliged to respond to such allegations.”

Following up in his safeguards report in June 2020, the DG noted “with serious concern that, for over four months, Iran has denied access to the Agency...to two locations and, for almost a year, has not engaged in substantive discussions to clarify Agency questions related to possible undeclared nuclear material and nuclear-related activities in Iran.” In this report, he also noted indications of recent or past sanitization at all three relevant locations, none of which had been declared to the IAEA. In one case, the IAEA had observed activities consistent with sanitization in the July 2019 time frame. The DG stated that the delays and the sanitization were “adversely affecting the Agency’s ability to clarify and resolve the questions and thereby to provide credible assurance of the absence of undeclared nuclear material and activities” in Iran.

The DG’s June safeguards report, noting that these issues at that point remained unresolved, prompted the Board to adopt a resolution on June 19 – tabled by France, Germany, and the United Kingdom – echoing the serious concern noted in the June report and calling on Iran to fully cooperate with the Agency and satisfy the Agency’s requests without any further delay,

including by providing prompt access to the locations specified by the Agency. Significantly, the Secretariat explained to Member States that such a prolonged refusal to provide required access was unprecedented under the AP, an instrument that is specifically intended to help the IAEA detect any indications of undeclared nuclear materials and activities.

In September 2020, the DG also reported that in recent meetings in Tehran with Iranian President Rouhani, Foreign Minister Zarif, and Vice President and head of the AOEI Salehi, which resulted in a joint IAEA-Iran statement announcing that Iran agreed to provide the IAEA with access to the two locations to which the Agency sought complementary access under Iran's AP. The IAEA confirmed that Iran granted the IAEA access to one location in August and the other on September 30.

The IAEA Board welcomed the joint statement issued by Iran and DG Grossi following his travel to Tehran. The U.S. statement at the BOG noted the recent agreement between Iran and the IAEA but highlighted that this is just a first step and it took too long for Iran to agree to provide the required access.

In his November 11, 2020 report, the IAEA DG notes that several issues related to Iran's NPT safeguards obligations remain unresolved. Iran's responses on the matter of the IAEA's detection of uranium particles continue to be unsatisfactory and not technically credible. In addition, the IAEA provided updates on its multiple investigations into possible undeclared nuclear material and activities in Iran. The IAEA continues to analyze samples taken during its complementary access to the two locations in August and September, which will take some time. Specifically, there remain at least four open areas of significant concern with respect to the IAEA's ability to confirm that Iran's declarations to the IAEA are correct and complete:

- Iran's continued failure to credibly explain the detection by the IAEA of chemically-processed uranium particle at an undeclared location in Iran, which the IAEA visited in January 2019;
- Outstanding IAEA questions related to potential undeclared nuclear material at another location in the past that the IAEA assesses may have been used in undeclared uranium conversion work;
- Outstanding IAEA questions related to potential undeclared nuclear material in the past at a location where conventional explosives testing may have taken place; and
- Outstanding IAEA questions regarding the possible presence in the past of undeclared uranium metal in Iran.

The IAEA's announcement of its investigations into potential undeclared nuclear material in Iran detected in November 2019 raises the possibility that such material could still be present in Iran today, outside IAEA monitoring. These issues raise significant questions of what Iran may be trying to hide, and whether Iran is in compliance with its safeguards obligations *today*. The United States has made clear that Iran must provide the IAEA with the cooperation required under its safeguards obligations.

Additional information is provided in the higher classification Annex.

ANALYSIS OF COMPLIANCE/ADHERENCE QUESTIONS

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

As noted in the IAEA's December 2015 Final Assessment on Past and Present Outstanding Issues regarding Iran's Nuclear Program, however, Iran has yet to answer significant questions regarding its past nuclear weapons program. The IAEA's ongoing safeguards investigations and Iran's failure for much of the reporting period to provide the necessary cooperation with the IAEA in connection with them raise concern with regard to Iran's compliance with its obligation to accept safeguards under Article III of the NPT.

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

The IAEA continues to investigate the source of the chemically processed uranium particles detected during the IAEA visit to Tehran in February 2019. However, now almost two years later, at the end of this reporting period, the matter remains unresolved. At the November 2020 Board, the DG emphasized that the presence of the uranium particles of anthropogenic origin, including isotopically altered particles, at the location not declared to the Agency, "still needs to be fully and promptly explained by Iran to allay any possible concerns about the correctness and completeness of Iran's safeguards declarations."

Since March 2020, as the DG has stated in reports on the implementation of NPT safeguards in Iran, the IAEA has identified a number of questions related to possible undeclared nuclear material and nuclear-related activities at three other locations that have not been declared by Iran. Although information concerning this material relates to the 2003 timeframe, if true, the material may still be unaccounted for. In addition to the issue of the processed uranium particles at the warehouse site, the IAEA is investigating possible undeclared materials and activities at two different locations in Iran, one a location where the IAEA says pilot-scale uranium conversion activities may have taken place in the 2003 timeframe and another where conventional explosives work may have taken place in the same period, potentially involving the use of nuclear material.

Because of Iran's past refusal to cooperate with the IAEA, the Amad Plan's work on uranium conversion is less understood than the larger, and IAEA safeguarded, AEOI conversion activities centered at the Esfahan complex.

The IAEA also reported in June 2020 that preparations for the use of neutron detectors may have occurred at the location with possible explosive testing, which suggests Iran may have used or planned to use or store nuclear material there. The combination of these activities and the remaining questions raise deeply troubling questions about possible past nuclear weapons-related work at the location and possible nuclear material that may still be undeclared today.

The United States also knows from past IAEA reporting that Iran has not resolved the IAEA's questions about the possible presence in Iran of undeclared uranium metal that the Agency believes may have been present at an undeclared location between 2002 and 2003. Even small amounts of undeclared uranium metal in Iran would be of serious proliferation concern given its applicability to nuclear weapons research and development.

The United States also has concerns that the steps Iran has been taking to expand its uranium enrichment program, especially in the area of centrifuge-related research and development, have been increasing its knowledge base. By gaining knowledge over time, it could achieve proficiency 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, if it made a decision to do so.

At the end of the reporting period, these serious, outstanding concerns remain regarding possible undeclared nuclear material and activities in Iran today, as evidenced by the IAEA's ongoing safeguards investigations described above. The IAEA's November 2020 report further notes that evaluations regarding the absence of undeclared nuclear material and activities for Iran are ongoing. These ongoing investigations and Iran's failure for much of the reporting period to provide the necessary cooperation with the IAEA in connection with them raise concern with regard to Iran's compliance with its obligation to accept safeguards under Article III of the NPT.

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

In the November 2020 report, the IAEA DG summarized and elaborated on the current situation, noting that the Agency continues to evaluate Iran's declarations under the AP. It will take time to process the environmental samples from the two sites visited by the IAEA in August and September. The DG has also emphasized that the IAEA may request access to additional sites. He added that timely and proactive cooperation by Iran in providing complementary access facilitates implementation of the AP and enhances confidence.

As we consider the IAEA's unanswered questions about possible undeclared nuclear material and activities in Iran, it is important to note Iran's past pursuit of nuclear weapons, retention of a vast collection of records from that nuclear weapons program, and continued employment of the scientists who worked on that program. The United States has made clear that Iran must comply

fully with its nuclear safeguards obligations without delay, denial or deception that inhibits the IAEA's essential nuclear safeguards verification work.

In addition to the issue of processed uranium particles is the IAEA's investigation of undeclared materials and activities at two different locations in Iran, one a location where the IAEA says pilot-scale uranium conversion activities may have taken place in the 2003 timeframe and another where conventional explosives work may have taken place in the same period.

EFFORTS TO RESOLVE COMPLIANCE QUESTIONS AND NEXT STEPS

In light of the new concerns regarding Iran's safeguards cooperation raised by the IAEA during the reporting period, the United States has underscored that Iran must immediately provide the IAEA nothing short of full cooperation and comply with its nuclear safeguards obligations. The United States remains deeply concerned that it took over one year of IAEA engagement, a decision of the Board of Governors, and the threat of further Board action to ultimately compel Iran to provide the required access. Such delay and denial is deeply troubling, and the international community must remain clear that nothing short of full cooperation without further delay would be acceptable.

The United States remains committed to denying Iran any pathway to a nuclear weapon and will work through the IAEA's Board of Governors to provide the IAEA the support it needs to resolve these serious matters. Iran is legally obligated to provide the IAEA with requested clarifications and required accesses.

The United States will continue to review all relevant information regarding possible undeclared nuclear material and related activities in Iran, as well as any new information regarding potential nuclear weapon-related research, development, and testing activities in Iran, including relevant procurement-related information, for signs that Iran has resumed, or intends to resume any nuclear weapons development effort.

The United States seeks a comprehensive diplomatic solution to addressing nuclear concerns in Iran, a solution that must be built on effective verification. U.S. sanctions since November 2018 have targeted critical sectors of Iran's economy, such as its energy, shipping, and shipbuilding sectors, as well as the provision of insurance to designated persons or for sanctionable activities, and transactions involving designated Iranian financial institutions.

In 2020, the U.S. Departments of State and Treasury imposed sanctions on nearly 40 Iranian proliferation-related individuals and entities – including targets linked to AEOI and SPND – pursuant to Executive Order (E.O.) 13382, which provides authority to impose sanctions on proliferators of weapons of mass destruction (WMD) and their means of delivery, and on their supporters. The designations underscore the dangers posed by Iran's nuclear escalations of the JCPOA restrictions and undisclosed past nuclear-related activities under the Amad Plan, including activities related to the development of a nuclear payload for a missile.

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

The United Nations Secretariat also continues to report on nuclear-related transfers to Iran notified by UN Member States to be in violation of UNSCR2231 (specifically, paragraph 2 of Annex B).

The United States will continue to encourage the international community to provide its full support to the IAEA, as it continues to fulfill its critical mandate to verify the non-diversion of nuclear materials or activities in Iran to nuclear weapons or other nuclear explosive devices.

As of the end of the reporting period, the IAEA continued to monitor and verify Iran's compliance with its obligations under its CSA and AP, as well as Iran's adherence to its JCPOA commitments. The United States will continue to closely monitor Iran's nuclear activities and its level of cooperation with the IAEA, including its cooperation with IAEA efforts to investigate the source of chemically processed uranium detected at an undeclared location in Iran and other Iranian locations raising questions of potential undeclared nuclear material and activities.

SYRIAN ARAB REPUBLIC (SYRIA)

FINDING

The Syrian Arab Republic (Syria) remains in violation of its obligations under Article III of the NPT and its CSA with the IAEA. Syria failed to declare and provide design information to the IAEA for the construction of a nuclear reactor at Al Kibar (also known as Dair Alzour), which was destroyed in an Israeli airstrike in September of 2007. Syria's clandestine construction of the Al Kibar reactor and its continued denial of IAEA requests for access and information concerning the Al Kibar reactor and information concerning three reported functionally related locations are clear violations of its obligations under its CSA, including with respect to modified Code 3.1 of the Subsidiary Arrangements to its CSA. To the extent that these activities were undertaken in connection with an effort to develop nuclear weapons, Syria may have also violated Article II of the NPT. Given the IAEA's finding of particles of chemically processed uranium compounds at the site, the United States remains concerned that 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 September 2020.

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

In May 2011, the IAEA Director General (DG) released a report assessing that the facility at Al Kibar was "very likely" a nuclear reactor that should have been declared to the Agency pursuant to Articles 41 and 42 of Syria's CSA and Code 3.1 of the Subsidiary Arrangements thereto. The IAEA based its assessment on a broad spectrum of factual information, including environmental

samples taken during the Agency's visit to the site in June 2008 (which contained particles of anthropogenic natural uranium), as well as commercial satellite and radar imagery, procurement information, and information provided by IAEA Member States. The report also noted that the reactor had features comparable to the gas-cooled, graphite-moderated reactor at Yongbyon in the DPRK.

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

During the reporting period, the IAEA DG issued a written report on Syria and provided updates at IAEA Board of Governors (BOG) meetings confirming that Syria had not provided any new information that would have an impact on the Agency's assessment that the facility at Dair Alzour was a nuclear reactor that should have been declared to the Agency. The IAEA DG continued to urge Syria to cooperate fully with the Agency in connection with all unresolved issues 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.

Additional information is provided in the higher classification Annex.

ANALYSIS OF COMPLIANCE CONCERNS

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

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

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

EFFORTS TO RESOLVE COMPLIANCE CONCERNS AND NEXT STEPS

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

The IAEA BOG resolution also referred the matter to the United Nations Security Council (UNSC). Following the IAEA's referral, the UNSC met in 2011 to discuss the matter, but took no action. The UNSC has not addressed Syria's nuclear activities subsequently. For the reporting period the United States has continued to ensure that the issue remains on the IAEA BOG's agenda. For 2020, the IAEA continued to urge Syria to cooperate fully with the IAEA in connection with all unresolved issues. The United States did not hold any bilateral discussions with Syria on its nuclear program in 2020.

At IAEA BOG meetings during the reporting period, the United States and likeminded partners have regularly reiterated the need for Syria to urgently cooperate with the IAEA to remedy its longstanding NPT safeguards noncompliance, and called for continued reporting from the DG and maintaining the item on the agenda for each quarterly BOG meeting. The United States also raised the issue of Syria's NPT noncompliance in national statements at the 2018 and 2019 NPT Preparatory Committee meetings. At the 2019 NPT Preparatory Committee meetings, the United States proposed a joint statement highlighting Syria's long-standing noncompliance with its CSA and NPT Article III obligations. The United States secured 51 co-sponsors for this joint statement, which called on Syria to cooperate with the IAEA and remedy its safeguards and NPT Article III non-compliance.

For 2020, the IAEA DG confirmed that Syria has not provided any new substantive information to the IAEA regarding the Al Kibar reactor, and continued to urge Syria to cooperate fully with the IAEA in connection with all unresolved issues. The DG also publicly called on Syria at the September 2020 BOG meeting to reengage with the IAEA and noted that he was willing to talk to Syria "constructively and cooperatively."

The United States will continue to support the IAEA's investigation of Syria's undeclared nuclear activities, including the IAEA's requests for greater Syrian transparency, and to work to ensure that the BOG and DG remain seized of the issue until Syria has fully cooperated with the IAEA to address all outstanding issues. The UNSC did not address Syria's nuclear program in 2020, and the United States does not foresee UNSC action in 2021, given the ongoing security issues in Syria and the continued likelihood that key UNSC members, such as Russia and China, would veto any substantive resolution.

THRESHOLD TEST BAN TREATY (TTBT)

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

FINDING

The United States assesses that Russia has conducted nuclear weapons-related experiments that have created nuclear yield since renewing its nuclear testing moratorium in 1996, though the United States does not have such a concern for 2020 specifically because its activities may have been curtailed due to the COVID-19 pandemic. Russia may, in prior years, have been testing in a manner that releases nuclear energy from an explosive canister, which raised compliance concerns with Russia’s TTBT notification obligation. Russian intent to carry out at its test site an underground nuclear weapons-related experiment that is supercritical (creates a self-sustaining chain reaction) and that is anticipated to result in a release of nuclear energy through a physical breach of the explosive canister, regardless of the magnitude of its planned nuclear yield, would require an affirmative TTBT notification to the United States. A Russian nuclear test notification would alert the United States of the forthcoming opportunity to conduct specified verification activities in accordance with the TTBT Protocol.

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

CONDUCT GIVING RISE TO COMPLIANCE CONCERNS

Russia declared a moratorium on nuclear weapon testing in 1991, and renewed its moratorium in 1996. In its annual test notifications submitted pursuant to paragraph 2 of Section IV of the Protocol, including the notification for calendar year 2020, Russia indicated that in the following calendar year it would not conduct any underground nuclear weapons tests within the meaning of the TTBT. However, information for prior periods (other than 2020) could indicate otherwise, as the United States assesses that Russia has conducted nuclear weapons-related experiments that have created nuclear yield since declaring its moratorium and may have done so in a manner that releases nuclear energy from an explosive canister.

Russia’s test activities in 2020 may have been curtailed due to the COVID-19 pandemic.

Additional information is provided in the higher classification Annex.

ANALYSIS OF COMPLIANCE CONCERNS

Russia's nuclear activities since declaring its moratorium and in recent years, though not in 2020, have raised compliance concerns with Russia's TTBT obligation to notify.

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

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

Russian intent to carry out at its test site an underground nuclear weapons-related experiment that is supercritical (creates a self-sustaining chain reaction) and that is anticipated to result in a release of nuclear energy through a physical breach of the explosive canister, regardless of the magnitude of its planned nuclear yield, would require an affirmative TTBT notification to the United States. A Russian nuclear test notification would alert the United States of the forthcoming opportunity to conduct specified verification activities in accordance with the TTBT Protocol.

A failure on the part of Russia to provide an accurate annual notification of planned nuclear tests, as defined above, for the following calendar year, and to provide timely revised notifications as may be required, would prevent the United States from exercising its verification rights, as specified in paragraph 2(b) of Section III of the Protocol.

EFFORTS TO RESOLVE COMPLIANCE CONCERNS AND NEXT STEPS

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

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

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

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

The degree to which the other NWS follow this U.S. interpretation – *i.e.*, “zero-yield” as defined to mean avoiding the production of a self-sustaining chain reaction – is important to assessing the other NWS’ adherence to their own nuclear testing moratoria.

For purposes of this analysis, the term “nuclear explosive” test includes tests that are supercritical, *i.e.*, that involve a limited multiplying fission chain reaction resulting in the release of nuclear fission energy, whether driven by high explosives or assembled by other means such as a gun assembly. Under the “zero-yield” standard to which the United States adheres in its own moratorium, no such nuclear explosive tests may be conducted. Supercritical testing is inconsistent with the zero-yield standard as defined by the United States.

COUNTRY ASSESSMENTS

PEOPLE’S REPUBLIC OF CHINA (CHINA)

FINDING

In recent years, China continued work at its Lop Nur nuclear weapons test site. China’s possible preparation to operate its Lop Nur test site year-round and lack of transparency on its nuclear testing activities – have raised concerns regarding its adherence to the U.S. “zero yield” nuclear weapons testing moratorium adhered to by the United States, United Kingdom, and France.

CONDUCT GIVING RISE TO ADHERENCE CONCERNS

In recent years, China’s possible preparation to operate its Lop Nur test site year-round and lack of transparency on its nuclear testing activities have raised concerns regarding its adherence to the U.S. “zero yield” standard adhered to by the United States, the United Kingdom, and France in their respective nuclear weapons testing moratoria. China continued work at its Lop Nur nuclear weapons test site throughout 2020.

Additional information is provided in the higher classification Annex.

ANALYSIS OF ADHERENCE CONCERNS

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

EFFORTS TO RESOLVE ADHERENCE CONCERNS AND NEXT STEPS

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

The United States will continue to monitor activities in China for evidence of nuclear testing activities. U.S. concerns could be mitigated by greater transparency.

RUSSIAN FEDERATION (RUSSIA)

FINDING

The United States finds that, since declaring its testing moratorium, Russia has conducted nuclear weapons experiments that have created nuclear yield and are not consistent with the U.S. "zero-yield" standard. However, the United States does not have such a concern for 2020, because Russia's activities may have been curtailed due to the COVID-19 pandemic.

CONDUCT GIVING RISE TO ADHERENCE CONCERNS

The United States assesses that Russia has conducted nuclear weapons-related experiments that have created nuclear yield since renewing its nuclear testing moratorium in 1996.

Despite Russia renewing its nuclear testing moratorium in 1996, some of its activities since 1996 have demonstrated a failure to adhere to the U.S. "zero-yield" standard, which would prohibit supercritical tests. However, in 2020, Russian nuclear testing may have been curtailed due to the COVID-19 pandemic.

Additional information is provided in higher classification Annex.

ANALYSIS OF ADHERENCE CONCERNS

The United States assesses that Russia's testing activities have not consistently adhered to Russia's testing moratorium, declared in 1991 and subsequently renewed in 1996, when judged

against the U.S. “zero-yield” standard. The United States assesses that Russia’s development of new warhead designs and overall stockpile management efforts have been enhanced by its approach to nuclear weapons related experiments. The U.S. understanding of nuclear weapon development leads the United States to assess that Russia’s supercritical testing activities would help it improve its nuclear weapons designs and capabilities.

EFFORTS TO RESOLVE ADHERENCE CONCERNS AND NEXT STEPS

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

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

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

MISSILE TECHNOLOGY CONTROL REGIME (MTCR)

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, 2020, 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 is not aware of any instances of non-adherence to the MTCR by Partner countries in 2020.

The United States sought and received a bilateral political commitment from China (which is not an MTCR Partner Country) in November 2020 to not proliferate certain missile technology.

COUNTRY ASSESSMENTS

PEOPLE'S REPUBLIC OF CHINA (CHINA)

FINDING

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

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

CONDUCT GIVING RISE TO ADHERENCE/COMPLIANCE CONCERNS AND ANALYSIS OF ADHERENCE/COMPLIANCE CONCERNS

Chinese entities continued to supply MTCR-controlled goods to missile programs of proliferation concern in 2020.

Additional information is provided in the higher classification Annex.

EFFORTS TO RESOLVE ADHERENCE/COMPLIANCE CONCERNS AND NEXT STEPS

Throughout 2020, the United States raised a number of cases with China concerning transfers of missile-related goods and technology by Chinese entities to programs of concern. Although the United States has asked that China investigate and put a stop to such activities, most of these cases remain unresolved. In 2020, the United States imposed sanctions against eight Chinese entities pursuant to the Iran, North Korea, and Syria Nonproliferation Act for transferring missile technology to Iran.

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

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

CHEMICAL WEAPONS CONVENTION (CWC)

For a detailed discussion of other nations' adherence to their obligations under the Chemical Weapons Convention, see the Report on Compliance with the Chemical Weapons Convention, submitted pursuant to Condition 10(C) of the Senate Resolution of Advice and Consent to the Chemical Weapons Convention (also known as the "Condition 10(C) Report"), and appended to this 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)

The Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction (BWC or Convention) opened for signature in 1972 and entered into force in 1975. As of the end of 2020, there were 182 States Party to the BWC and four signatory States for which the treaty is not yet in force. In 1987, BWC States Party established an annual data exchange, referred to as the Confidence-Building Measures (CBMs). The CBMs were modified and expanded in 1991 and streamlined in 2011. Submission of CBMs is a politically binding commitment, but not all States Party routinely submit reports.

COUNTRY ASSESSMENTS

PEOPLE'S REPUBLIC OF CHINA (CHINA)

FINDING

The People's Republic of China (China) engaged in activities with dual-use applications, which raise concerns regarding its compliance with Article I of the BWC. In addition, the United States does not have sufficient information to determine whether China eliminated its assessed historical 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 that China possessed an offensive biological warfare program from 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 otherwise disclosed it ever pursued an offensive BW program, and China has never acknowledged publicly or in diplomatic channels its past offensive program. As part of its historical BW program, China had probably weaponized ricin, botulinum toxins, and the causative agents of anthrax, cholera, plague, and tularemia.

China continues to develop its biotechnology infrastructure and pursue scientific cooperation with countries of concern. Available information on studies conducted at Chinese military medical institutions has included information that discusses identifying, testing and characterizing diverse families of potent toxins with dual-use applications.

Additional information is provided in the higher classification Annex.

ANALYSIS OF COMPLIANCE CONCERNS

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

EFFORTS TO RESOLVE COMPLIANCE CONCERNS AND NEXT STEPS

In 2020, due to COVID-19 travel restrictions, the United States attempted to engage China virtually on issues related to the BWC, however, the Chinese officials “postponed” the meeting, citing unspecified “technical reason.” The United States will continue to monitor and report about China’s biological activities in relation to its BWC obligations. The United States will also continue to request bilateral meetings with China to discuss BWC issues, as annual meetings were held prior to the COVID-19 pandemic from 2017-2019.

ISLAMIC REPUBLIC OF IRAN (IRAN)

FINDING

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

CONDUCT GIVING RISE TO COMPLIANCE CONCERNS

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

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

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

Additional information is provided in the higher classification Annex.

ANALYSIS OF COMPLIANCE CONCERNS

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

EFFORTS TO RESOLVE COMPLIANCE CONCERNS AND NEXT STEPS

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

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

FINDING

The United States assesses that the Democratic People’s Republic of Korea (North Korea) has an offensive BW program and is in violation of its obligations under Articles I and II of the BWC. North Korea is assessed to have had BW capabilities since at least the 1960s. Although the United States has fragmented insight into North Korea’s offensive BW program, previous reporting illustrated that North Korea had BW capabilities intended for 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, and produced BW agents, and may have weaponized them for use. North Korea probably has the capability to produce sufficient quantities of biological agents for military purposes upon leadership demand.

Additional information is provided in the higher classification Annex.

ANALYSIS OF COMPLIANCE CONCERNS

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

EFFORTS TO RESOLVE COMPLIANCE CONCERNS AND NEXT STEPS

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

THE RUSSIAN FEDERATION (RUSSIA)

FINDING

The United States assesses that the Russian Federation (Russia) maintains an offensive BW program and is in violation of its obligation under Articles I and II of the BWC. The issue of compliance by Russia with the BWC has been of concern for many years.

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

In April 1992, President Yeltsin signed a decree committing Russia as the BWC successor to the Soviet Union and prohibiting illegal biological warfare activity in Russia. During discussions in Moscow in September 1992, Russian officials confirmed the existence of a biological weapons program inherited from the Soviet Union and committed to its destruction.

On September 14, 1992, the United States, United Kingdom, and Russia met in Moscow where Deputy Foreign Minister Gregory V. Berdennikov made the following admission: "[T]he Soviet Union was violating this convention [BWC] and was running a program in the sphere of offensive biological research and development, which has been declared unlawful by the convention. . . . These activities were in progress from 1946 until March of 1992." This statement, and subsequent reports under the BWC confidence-building measures, however, acknowledged only a BW research and development program.

Although President Yeltsin vowed to end Russia's BW program, his efforts were thwarted by some in his military establishment, who continued the program. In September 1992, these military officials played a significant role in Russia's participation in a Trilateral Process with the United States and Great Britain that sought to create confidence that Russia had terminated

all illegal biological weapons activity. Russia initially consented to U.S. and British inspections at Russian BW facilities, but ultimately refused to sign the “Trilateral Agreement” unless the United States and Great Britain accepted reciprocal inspections, including at private pharmaceutical companies in their countries. After inspecting U.S. facilities, Russia never granted U.S. and British inspectors further access to military biological research and production centers in Russia. The Trilateral Process broke down in the mid-1990s without resolving U.S. concerns regarding Russia’s compliance with the BWC. Key military biological facilities associated with the Soviet offensive program remain, inaccessible, and untransparent, nearly 30 years after Yeltsin’s decree.

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

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

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

Additional information is provided in the higher classification Annex.

ANALYSIS OF COMPLIANCE CONCERNS

The United States assesses that Russia maintains an offensive BW program and is in violation of its obligations under Articles I and II of the BWC. Article I of the BWC requires States Party “never in any circumstances to develop, produce, stockpile or otherwise acquire or ...[r]etain microbial or other biological agents, or toxins whatever their origin or method of production, of types and in quantities that have no justification for prophylactic, protective or other peaceful purposes” and Article II requires States Party to “destroy, or to divert to peaceful purposes” the BW items specified in Article I of a past offensive program. While States Party to the BWC have a political commitment to report a past offensive program, since April 11, 1992, subsequent Russian CBM submissions have remained incomplete and misleading. Russia is providing an incomplete acknowledgment of the former Soviet program, a lack of evidence of the dismantlement or cessation of key activities, and continues its ongoing secrecy efforts (including both the military facilities noted above and legislation criminalizing any disclosure of information about the former Soviet program). As such, Russia has not fulfilled its obligations under Article II to “destroy or divert to peaceful purposes” the BW specified in Article I of the Convention that it inherited from the Soviet Union.

EFFORTS TO RESOLVE COMPLIANCE CONCERNS AND NEXT STEP

While there were no specific expert level consultations in 2020, on August 27, 2020 the United States added the 48th Central Scientific Research Institute, Kirov; 48th Central Scientific Research Institute, Sergiev Posad; and 48th Central Scientific Research Institute, Yekaterinburg - the key military biological facilities previously referenced - to the Entity List (Supplement No. 4 to part 744 of the Export Administration Regulations). These three entities have been determined by the U.S Government to be acting contrary to the national security or foreign policy interests of the United States. Specifically, the United States has reasonable cause to believe these institutes are Russian Ministry of Defense facilities associated with the Soviet and Russian biological weapons program.

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

TREATY ON OPEN SKIES (OST)

RUSSIAN FEDERATION (RUSSIA)

FINDING

In 2020, the United States continued to assess that Russia was in violation of the Treaty on Open Skies (OST). Specifically, in 2020, Russia remained in violation of the Treaty in the following respects:

- 1) Section III of Annex A to the Treaty and Open Skies Consultative Commission (OSCC) Decision 3/04 for imposing and enforcing a sublimit of 500 kilometers over the Kaliningrad Oblast for all flights originating out of Kubinka Open Skies Airfield (OSA).
- 2) Article VI of the Treaty for refusing access to observation flights within a 10 kilometer corridor along Russia's border with the Georgian regions of South Ossetia and Abkhazia.

CONDUCT GIVING RISE TO COMPLIANCE CONCERNS

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

In 2014, Russia introduced a 500-kilometer sublimit on the distance that any observation mission originating from Kubinka Open Skies Airfield could fly over the Kaliningrad Oblast; Kubinka otherwise has a maximum flight distance of 5,500 kilometers and provides sufficient range to observe the entire Kaliningrad Oblast. In 2017, Russia rejected three proposed flight plans from the United States that had flight distances of greater than 500 kilometers over the Kaliningrad Oblast. After Russia rejected these flight plans, the observing Parties modified the flight plans, under protest, to include a distance of less than 500 kilometers over Kaliningrad in order to be permitted by Russia to conduct the observation mission. In the corresponding mission reports, the United States cited Russia's imposition of the sublimit as the reason for the modifications, which the United States made clear to Russia were proposed without prejudice to the United States' Treaty rights. There were no observation missions in 2018.⁹ In 2019, the Kaliningrad flight distance sublimit was tested three times – once on a U.S. shared mission and twice on

⁹ The OSCC did not approve by consensus a distribution of flight quotas for 2018. Absent such an approved distribution, States Party 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.

Allied missions. In all three instances, Russia upheld the restriction. In February 2020, Russia allowed a U.S.-Lithuanian-Estonian observation mission with a flight distance of 505 kilometers over Kaliningrad. However, Russia made clear in 2020 that it had not yet changed its standing policy of limiting flights to 500 kilometers over Kaliningrad when originating from Kubinka Open Skies airfield, and it has not formally rescinded the sublimit via a replacement Treaty Format 26 notification regarding the designation of sites. As such, the violation remains unresolved.

Since May 2010, Russia has prohibited observation missions over its territory to fly within 10 kilometers of its borders with the Georgian regions of South Ossetia and Abkhazia, claiming the applicability of the prohibition in Article VI, Section II, paragraph 2, on flights within 10 kilometers of non-States Party. In the 2018 edition of this report, the United States cited this restriction as a violation of Russia's obligations under the Treaty since South Ossetia and Abkhazia are within the internationally-recognized borders of Georgia, a State Party to the OST. On April 23, 2018, Russia stated that without prejudice to its interpretation of Article VI, Section II, paragraph 2 it would resume "receiving observation flights in 10 kilometers contiguous to two sections of Russia's state border in the Caucasus, which was discontinued in May 2010." Russia further claimed that "[p]ermission to conduct observation flights in these zones will be permanent provided that Georgia implements in good faith its obligations to accept Russian observation missions." (Note: Georgia ceased implementation of the Treaty vis-à-vis Russia in 2012 in response to Russia's restrictions along its border. End Note.) On April 8-12, 2019, a joint U.S., Swedish, and German OST mission sought to fly over Russia within 10km of the Russian-Georgian border, but Russia rejected the proposed mission plan. Russia required modifications that removed the flight path that approached within 10 km of the border, to which the observing Parties agreed under protest. This mission therefore confirmed that Russia's violation remained unresolved. This violation was not tested in 2020 due to the limited amount of OST observation missions conducted in light of the COVID-19 pandemic.

During the previous reporting period, the United States and Canada (the "observing Parties") carried out a shared Open Skies observation mission over eastern Russia that coincided with the Russian annual capstone military exercise TSENTR 2019 (in Russia's Central Military District). A full statement of the facts may be found in last year's report. In summary, though Russia and the observing Parties reached agreement on a mission plan that would overfly areas involved in the TSENTR exercise, midway through the mission, Russia informed the observing Parties that it would not permit the second agreed flight segment to proceed. Despite the observing Parties' efforts, no resolution was achieved that would allow the mission to proceed in a mutually satisfactory manner. The observing Parties therefore discontinued the mission and transited to the point of exit. The result of the Russian failure to accommodate the flight segment was that the observing Parties were unable to observe territory within a 150 km ring around Orenburg airfield during the TSENTR military exercise.

ANALYSIS OF COMPLIANCE CONCERNS

As established in Annex A, Section III, flights originating from the Kubinka Open Skies Airfield are subject to a maximum flight distance of 5,500 kilometers. No Treaty provision permits a State Party to establish a sublimit within the maximum flight distance of an established Open

Skies Airfield, as Russia has done for missions originating from the Kubinka Open Skies Airfield over the territory of Kaliningrad. Rather, OSCC Decision 3/04, subparagraph 1(b), precludes a State Party from decreasing the maximum flight distance from an Open Skies Airfield. Russia's 500 kilometer sublimit on flights over the Kaliningrad Oblast is therefore inconsistent with Annex A, Section III and OSCC Decision 3/04. As noted above, although Russia allowed a U.S.-Lithuanian-Estonian observation mission with a flight distance of 505 km over Kaliningrad, Russia made clear that it had not changed its policy of limiting flights to 500 kilometers over Kaliningrad when originating from Kubinka Open Skies airfield, and it has not formally rescinded the sublimit via a replacement Treaty Format 26 notification on the designation of sites.

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 that are 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, no other State Party shares this view. South Ossetia and Abkhazia are within the internationally recognized borders 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.

Russia's policy with regard to such flights is therefore inconsistent with Russia's obligations under Article VI of the Treaty. Russia's policy was not tested in 2020 due to the pause in planned observation missions in light of the COVID-19 pandemic. However, Russia has not rescinded its policy regarding flights within 10 kilometers of its border with the South Ossetia and Abkhazia regions.

Russia's 2019 denial of an agreed U.S.-Canadian flight segment over the TSENTR 2019 exercise violated Article VI of the Treaty, as discussed in detail in last year's report. Though a violation of this kind was not repeated during the 2020 flying season, Russia has continued to assert that its denial of the agreed TSENTR overflight segment did not violate the Treaty. Russia claims that the reason for the denial was an abundance of caution for the safety of the OST mission, which could not be guaranteed during the conduct of a live-fire exercise in the planned overflight area. As discussed in last year's report, this is not a valid justification under the Treaty. The kind of deconfliction of airspace required in this situation is routine, and Article VI, Section I, paragraph 15 of the Treaty states that the "observed Party shall ensure that its air traffic control authorities facilitate the conduct of observation flights in accordance with this Treaty." Therefore, in this situation, Russia should have ensured the safe facilitation of the agreed OST mission plan for the second segment, rather than denying it]. In addition, the observing Parties offered to revise the agreed segment over the TSENTR exercise, such that it would fly at an altitude that was permitted under the Notice to Airmen (NOTAM) in effect for general air traffic in the area. Russia refused to permit even this revised segment.

From September 24-26, 2020, Germany and France conducted an OST observation mission over areas associated with the Russian KAVKAZ military exercise. All agreed observation segments were conducted as planned, unlike the U.S.-Canadian observation mission over the TSENTR 2019 exercise. However, as noted above, Russia has yet to acknowledge that its conduct with

respect to the agreed flight segment over the TSENTR exercise in September 2019 violated the OST.

EFFORTS TO RESOLVE COMPLIANCE CONCERNS AND NEXT STEPS

During the reporting period the United States and other States Parties raised their compliance concerns repeatedly at various forums and to Russia. The United States continued to oppose any restriction inhibiting or impacting an observing Party's right to observe any point on the observed Party's territory in accordance with the Treaty, even if the restriction did not preclude such observation.

Since 2015, the United States has worked with key Allies and partners 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, in September 2017, the United States announced several Treaty-compliant and reversible measures it was taking to encourage Russia to return to full compliance with the Treaty. Specifically, the United States: (1) revised the flight distance associated with the access to the Open Skies airfield in Honolulu, Hawaii to a maximum of 900 kilometers as part of the special procedures provided for in Annex E subparagraph 5(b)(2); (2) ceased the practice of waiving certain published Federal Aviation Administration (FAA) rules, procedures, and guidelines of flight safety for Open Skies flights; and (3) stopped allowing courtesy overnight accommodations at certain mainland Open Skies refueling airfields that are not needed to enable full territorial access.

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

The implementation of the U.S. measures and Russia's "reciprocal" actions remained in effect in 2020, until the effective date of the U.S. withdrawal from the Treaty.

On May 22, 2020, the United States notified the Treaty Depositaries and all States Parties of its decision to withdraw from the Treaty on Open Skies, in accordance with Article XV, paragraph 2 of the Treaty, which states that each State Party has the "right to withdraw," with six months' advance notice. The United States noted that it might reconsider its decision to withdraw from the Treaty if Russia returned to full compliance with its obligations prior to the effective date of

U.S. withdrawal. Notwithstanding its notice to withdraw, the United States remained committed to diplomatic efforts to resolve Russian noncompliance.

On July 5, 2020, at a conference of States Parties (CSP) convened by the Treaty Depositaries under Article XV, paragraph 3 to “consider the effect of the withdrawal on th[e] Treaty,” the United States provided States Parties with its rationale for withdrawal, with specific reference to Russia as a serial violator of its arms control obligations and commitments. Russia’s violations of the Treaty on Open Skies represent one instance in Russia’s broader disregard for its arms control obligations and commitments.

On October 8, 2020, during the Fourth Review Conference of the Treaty on Open Skies, the United States reiterated the points made at the July 5, 2020 CSP.

Russia did not return to full compliance, and the U.S. withdrawal from the Treaty took effect on November 22, 2020.

VIENNA DOCUMENT ON CONFIDENCE- AND SECURITY-BUILDING MEASURES

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

This chapter covers VD11 adherence by participating States during 2020. Five OSCE participating States (the Russian Federation, Azerbaijan, Kyrgyzstan, Turkmenistan, and Uzbekistan) of the six participating States with adherence concerns discussed in last year’s Report are included again this year. As noted in last year’s Report, a sixth participating State, Tajikistan, took action in 2019 to address its issue of adherence concern and is therefore no longer included in this Report.

As this report covers the period from January 1, 2020, to December 31, 2020, the annual VD11 exchange of data pertinent to this reporting period was held on December 15, 2019, for participating States with military forces in the VD11 zone of application to provide data effective as of January 1, 2020.¹⁰ In some instances important developments reflected in data as of January 1, 2021, are noted; changes to adherence concerns based on these data will be included in the next year’s Report.

The COVID-19 pandemic plainly cast a long shadow over verification activities in 2020. In addition to many inspections, evaluations and visits being postponed or cancelled, normal diplomatic discourse was severely curtailed for much of 2020, with most direct contacts limited to telephone or email, and limited-participation videoconferences replacing formal meetings. As

¹⁰ Under the terms of VD11, participating States provide data each December regarding their forces in the zone of application effective as of January 1 of the following year.

a consequence, follow-up actions on prevailing concerns with all of the listed countries were limited.

COUNTRY ASSESSMENTS

THE RUSSIAN FEDERATION (RUSSIA)

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

FINDINGS

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

In 2020, Russia continued its occupation and attempted annexation of Crimea, which remains part of the sovereign territory of Ukraine, as well as its arming, training, and fighting alongside anti-government forces in eastern Ukraine.

In its VD11 data as of January 1, 2020, Russia again failed to provide information on its military forces located in the Russian-occupied Georgian territories of Abkhazia and South Ossetia.

The same Russian data as of January 1, 2020 did include the 126th Coastal Defense Brigade in Crimea, Ukraine, which had not been declared since its formation in 2014, and the Fighter Aviation Regiment at Kursk, which had been omitted from Russia's annual data as of January 1, 2020 despite having been fully rearmed with Su-30SM combat aircraft. This resolves the adherence concerns with regard to declarations of these two units that were reported in last year's report.

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

CONDUCT GIVING RISE TO ADHERENCE CONCERNS

Russia's 2014 occupation and attempted annexation of Crimea a part of the sovereign territory of Ukraine as well as its arming, training, and fighting alongside anti-government forces in eastern Ukraine, continued through 2020.

In its VD11 data as of January 1, 2020, Russia again did not provide information on its military forces located in the Russian-occupied Georgian regions of Abkhazia and South Ossetia, neither reporting such forces at normal peacetime locations in Russia as it had done from 2008 through

2011, nor identifying the forces' normal peacetime locations in the Abkhazia and South Ossetia regions of Georgia.

Russia again failed to include three types of aircraft – the Su-35S and Su-30SM multirole fighters, and the Ka-52 attack helicopter – in its VD11 data as of January 1, 2020, despite the fact that these aircraft are subject to VD11 reporting and have been assigned since at least 2017 to active units in the VD11 zone of application. Additionally, Russia continued its practice of improperly excluding the BRM-1K armored infantry fighting vehicle from its annual data.

ANALYSIS OF ADHERENCE CONCERNS

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

Russia's 2014 occupation and attempted annexation of Crimea, Ukraine, a part of the sovereign territory of Ukraine, as well as its arming, training, and fighting alongside anti-government forces in eastern Ukraine, continued throughout 2020. This conduct runs counter to the Helsinki Final Act and the declaration on Refraining from the Threat or Use of Force contained in paragraphs 9 to 27 of the Document of the Stockholm Conference, reaffirmed in paragraphs 2 and 3 of the VD11, respectively.

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

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

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

Russia failed again to declare Sukhoi Su-35 and Su-30SM multirole fighters, and Ka-52 attack helicopters in its data as of January 1, 2020, and once again did not include the BRM-1K armored infantry fighting vehicle in this data. In addition, Russia has not provided the data VD11 requires for plans to deploy and actual deployment of new types or versions of major weapon and equipment systems, including the Su-35S and Su-30SM fighters, and the Ka-52 attack helicopter.

Finally, the BRM-1K armored infantry fighting vehicle continues to be excluded from annual exchange of information. The vehicle is a reconnaissance variant of the BMP-1 armored infantry fighting vehicle and was reported as an armored combat vehicle look-alike in the Russian data as

of January 2005 and January 2006. It has not been reported since that time, despite the continued presence of the vehicle in the VD11 zone of application.

EFFORTS TO RESOLVE ADHERENCE CONCERNS AND NEXT STEPS

During 2020, the United States and other participating States continued to raise in the OSCE the grave issues of Russia's attempted annexation of Crimea and Russian support for the anti-government forces in eastern Ukraine, which run counter to OSCE security commitments recalled in VD11.

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

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

REPUBLIC OF ARMENIA (ARMENIA)

Armenia 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

In 2020, Armenia failed to notify plans to deploy or the actual deployment into the VD11 zone of application of four Su-30SM combat aircraft.

By the end of 2020, Armenia had not yet submitted its annual VD11 data on its armed forces.

CONDUCT GIVING RISE TO ADHERENCE CONCERNS

During 2020, Armenia did not report plans to deploy or the actual deployment into the VD11 zone of application of four Su-30SM combat aircraft, although these same aircraft were notified (as Su-30s) under another conventional arms control regime. On February 4, 2020, Armenia transmitted a Format 22 notification under the Treaty on Conventional Armed Forces in Europe (CFE), declaring the entry into service of the four Su-30 combat aircraft. No corresponding Vienna Document notification was issued.

On December 16, 2020, Armenia notified participating States that its submission of its annual VD11 data on its military forces would be delayed beyond the December 15 deadline. As of the end of 2020, the data had not yet been provided.

ANALYSIS OF ADHERENCE CONCERNS

Per VD11, Chapter I, paragraphs 9, 11.2, and 13, participating States will provide data on plans for the deployment of new types or versions of major weapon and equipment systems before, or at the latest when, they deploy the systems concerned for the first time in the zone of application for CSBMs, and exchange information annually on major weapon and equipment systems assigned to units at the level of regiment, brigade, or above.

Armenia did not adhere to this commitment with respect to the entry into service of four Su-30 combat aircraft in 2020.

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

Armenia did not provide this annual information in December 2020. It notified participating States that its data would be delayed.

EFFORTS TO RESOLVE ADHERENCE CONCERNS AND NEXT STEPS

Due to the COVID-19 pandemic's far reaching effects on diplomatic engagement throughout the OSCE region and Armenia's postponement of all verification activities under the Vienna Document, normal contacts on Vienna Document issues were limited for most of 2020, with most direct contacts restricted to telephone or email, and limited-participation videoconferences replacing formal meetings. As a consequence, follow-up action on prevailing concerns was limited.

REPUBLIC OF AZERBAIJAN (AZERBAIJAN)

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

FINDING

The Republic of Azerbaijan (Azerbaijan) failed to notify at least one major military exercise or activity for calendar year 2020, despite its Ministry of Defense announcement of a large-scale military exercise held in May 2020.

By the end of 2020, Azerbaijan had not yet submitted its annual VD11 data on its armed forces.

CONDUCT GIVING RISE TO ADHERENCE CONCERNS

Azerbaijan failed to provide notification of at least one major military exercise or activity during calendar year 2020, despite publicly announcing and conducting a major exercise in May 2020 and engaging in other large-scale military activities during the year.

On December 11, 2020, Azerbaijan notified participating States that its submission of its annual VD11 data on its military forces would be delayed beyond the December 15 deadline. As of the end of 2020, the data had not yet been provided.

ANALYSIS OF ADHERENCE CONCERNS

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

Azerbaijan conducted and publicized military exercises in 2020, but failed to provide notification of at least one major military exercise or activity.

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

Azerbaijan did not provide this annual information in December 2020. It notified participating States that its data would be delayed.

EFFORTS TO RESOLVE ADHERENCE CONCERNS AND NEXT STEPS

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

KYRGYZSTAN

Kyrgyzstan 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.

Kyrgyzstan's adherence to the Vienna Document was first addressed in the Compliance Report in 2001.

FINDING

Kyrgyzstan failed to provide VD11 data on its armed forces (as of January 1, 2020) by December 15, 2019.

Kyrgyzstan also failed to notify at least one major military exercise or activity for calendar year 2020.

While Bishkek has chronically declined VD11 inspection and evaluation requests by participating States, there were no new requests this year due to the COVID-19 pandemic.

CONDUCT GIVING RISE TO ADHERENCE CONCERNS

Kyrgyzstan has not provided its annual data since it provided that data effective as of January 1, 2014.

Kyrgyzstan failed to provide advance notification of at least one major military exercise or activity during calendar year 2020.

Although it did not do so in 2020—a year in which many verification activities were postponed or cancelled because of the COVID pandemic-- Kyrgyzstan has declined several requests for VD11 inspections and evaluations in the past, citing “incomplete internal governmental procedures” connected with the reconciliation of national legislation with provisions of the Vienna Document 11.”

ANALYSIS OF ADHERENCE CONCERNS

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

Kyrgyzstan failed to provide VD11 data on its armed forces (as of January 1, 2020) by December 15, 2019. Kyrgyzstan has not provided such data since it provided data effective as of January 1, 2014.

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

Kyrgyzstan failed to provide advance notification of at least one major military exercise or activity during calendar year 2019, although it carried out an air defense exercise in mid-September 2020, according to the Kyrgyzstani press.

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

Kyrgyzstan received no requests for inspections or evaluations in 2020, but the standard Kyrgyz response to inspection or evaluation requests in the past has been that in the view of the conflict between national legislation and the provisions of the Vienna Document 11 “the conduct of the requested inspection does not seem possible.” In light of Kyrgyzstan’s chronic refusals of inspection and evaluation requests, as outlined above, the pause in verification activities this year

due to the COVID-19 pandemic does not provide any basis for assessing whether this issue continues. Reasons for denial noted on past occasions do not adhere to VD11, Chapter IX provisions.

EFFORTS TO RESOLVE ADHERENCE CONCERNS AND NEXT STEPS

The United States will continue to work with Kyrgyzstan 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 Kyrgyzstan, including the Annual Implementation Assessment Meeting and OSCE VD11 data exchange, to encourage Kyrgyzstan 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 Kyrgyzstan.

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 annual VD11 data on its armed forces (as of January 1, 2020) by December 15, 2019.

CONDUCT GIVING RISE TO ADHERENCE CONCERNS

Turkmenistan has not provided its annual VD11 data effective of January 1, 2020.

ANALYSIS OF ADHERENCE CONCERNS

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

Turkmenistan has not provided its annual VD11 data effective as of January 1, 2020. Turkmenistan has not provided such VD11 data since January 2015, when it provided its data effective as of January 1, 2015.

EFFORTS TO RESOLVE ADHERENCE CONCERNS AND NEXT STEPS

The United States discussed bilaterally with Turkmenistan its VD11 commitments and failure to provide an annual CSBMs data declaration. The United States has encouraged Turkmenistan to provide its overdue VD11 data on its armed forces valid as of January 1, 2020, and to return to its previous practice of providing an annual VD11 data declaration.

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

REPUBLIC OF UZBEKISTAN (UZBEKISTAN)

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

FINDING

The Republic of Uzbekistan (Uzbekistan) failed to provide VD11 data on its armed forces (as of January 1, 2020) by December 15, 2019.

Uzbekistan also failed to notify at least one major military exercise or activity for calendar year 2020 although it carried out at least one military exercise or activity during the year.

CONDUCT GIVING RISE TO ADHERENCE CONCERNS

Uzbekistan has not provided its annual VD11 data effective as of January 1, 2020. Uzbekistan has not provided such data since a late submission on February 12, 2003, when it provided data effective as of January 1, 2003.

Uzbekistan failed to notify of at least one major military exercise or activity despite carrying out at least one military exercise or activity during the year.

ANALYSIS OF ADHERENCE CONCERNS

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

Uzbekistan has not provided its annual VD11 data effective as of January 1, 2020. Uzbekistan has not provided such data since a tardy submission on February 12, 2003, when it provided data effective as of January 1, 2003.

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

Under the referenced Decision, Uzbekistan should have notified at least one exercise, as it carried out at least one military exercise or activity during the year.

EFFORTS TO RESOLVE ADHERENCE CONCERNS AND NEXT STEPS

The United States discussed bilaterally with Uzbekistan its VD11 commitments and failure to provide an annual VD11 data declaration. The United States has encouraged Uzbekistan to provide its overdue data on its armed forces effective as of January 1, 2020, and to return to its previous practice of providing an annual VD11 data declaration.

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

TREATY ON CONVENTIONAL ARMED FORCES IN EUROPE (CFE)

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

U.S. Department of State
April 2021