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REVIEWING THE ADMINISTRATION'S NUCLEAR AGENDA

HEARING

BEFORE THE

COMMITTEE ON FOREIGN RELATIONS UNITED STATES SENATE

ONE HUNDRED FOURTEENTH CONGRESS

SECOND SESSION

MARCH 17, 2016

Printed for the use of the Committee on Foreign Relations

Available via the World Wide Web:
http://www.govinfo.gov

U.S. GOVERNMENT PUBLISHING OFFICE
30–462 PDF WASHINGTON : 2018

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REVIEWING THE ADMINISTRATION'S NUCLEAR AGENDA

THURSDAY, MARCH 17, 2016

U.S. SENATE,
COMMITTEE ON FOREIGN RELATIONS,
Washington, DC.

The committee met, pursuant to notice, at 10:01 a.m. in Room SD–419, Dirksen Senate Office Building, Hon. Bob Corker, chairman of the committee, presiding.

Present: Senators Corker [presiding], Risch, Rubio, Flake, Gardner, Cardin, Menendez, Udall, and Markey.

OPENING STATEMENT OF HON. BOB CORKER, U.S. SENATOR FROM TENNESSEE

The CHAIRMAN. The hearing of the Foreign Relations Committee will come to order.

The Nuclear Security Summit was first envisioned by President Obama in 2009 as an international effort to, in his words, "secure all vulnerable nuclear material around the world within four years." According to official data from the summit, commitments made by participating countries have resulted in removal and/or disposition of over 3.2 metric tons of vulnerable highly enriched uranium, or HEU, and plutonium material; complete elimination of HEU from 12 countries; verified shutdown or successful conversion to low enriched uranium, LEU, fuel use of 24 research reactors and isotope production facilities in 15 countries; completion of physical security upgrades at 32 buildings, buildings storing weapons, usable fissile materials; insulation of radiation detection equipment at 328 international border crossings, airports and seaports to combat illicit trafficking in nuclear materials; and the establishment of an international nuclear fuel bank as a buffer against shortages in the commercial market that might otherwise lead more countries to decide to produce their own nuclear fuel. A lot of accomplishments there.

While we welcome those, I fear that they are being overshadowed by the actions of nuclear weapons states, a combination of rogue regimes and a general weakening of the nonproliferation standards and enforcement.

Today, many argue that the threat of nuclear conflict is greater than ever. Pakistan and India are enlarging and improving their nuclear arsenals in an attempt to gain an upper hand over one another. Meanwhile, there has been virtually no progress made to address nuclear security with India. Russia remains in violation of the Intermediate-Range Nuclear Forces, INF, Treaty while aggres-

sively exercising its nuclear forces. The Russians have also broken the 1994 promises of territorial integrity they made to Ukraine in connection with that country's relinquishment of nuclear weapons, and have ended cooperative threat reduction work with the United States. Further, we could point to many recent instances of sensitive nuclear material being found outside of Russian government control.

North Korea continues to flaunt its nuclear capabilities, developed first in violation of the Nuclear Nonproliferation Treaty, and then following withdrawal from that treaty without fear of reprisal from the international community. No action was taken against them when they pulled away from it.

And Iran continues to parade the arrangement they received with the JCPOA by testing ballistic missiles and setting the stage to capitalize on the massive industrialization of its nuclear complex authorized by the international community.

Efforts to halt the proliferation of technology that can feed nuclear weapons programs are also being undermined. At a time when global plutonium stocks are rising, with enough material to build at least 20,000 nuclear weapons, recent 123 agreements have given free passes to pursue reprocessing. We talked to Assistant Secretary Countryman about that numbers of times.

I am also concerned that the administration is missing the opportunity to call for a plutonium time-out in Asia by prohibiting the reprocessing of U.S.-origin material by South Korea and China while also calling for Japan to further delay the restart of the reprocessing facility at Rokkasho.

And rather than leveraging the pressure of the international community to secure a deal with Iran that ends the enrichment of uranium, the P5+1 nations have all but built the critical infrastructure that allows them to produce the material for which they have no verifiable requirement.

In light of these developments, it is appropriate that we take a closer look today at the President's call nearly seven years ago to secure all vulnerable nuclear material around the world within four years. It is also worth a quick look at the remainder of the Prague agenda as well. While President Obama committed to aggressively pursue U.S. ratification of the Comprehensive Test Ban Treaty, I thank his administration for recognizing that pushing the Senate to provide its advice and consent at this time would be futile. Even if we were to ratify it, moreover, it would never enter into force because that would also require ratification by countries such as North Korea, Iran, China, India, and Pakistan.

Undersecretary Gottemoeller invested significant personal attention to negotiate a Fissile Material Cutoff Treaty, but Pakistan has refused to consent to open negotiations. Though President Obama in his Prague speech stated that "rules must be binding, violations must be punished, words must mean something," I am concerned that the track record has not always matched with the rhetoric, particularly with respect to Russia, North Korea, and Iran.

The Iran deal has demonstrated that non-compliance can be rewarded. It really has. Further, even though the U.N. Security Council recently passed a resolution to apply new sanctions in the wake of missile and nuclear tests, there remains no consequence

for North Korea abandoning the nonproliferation treaty, and the international community has shied away from applying real consequences to effect the nuclear calculations of the Kim regime.

I want to thank our witnesses today for joining us and helping us examine these important issues. I look forward to your testimony.

With that, I will turn to our distinguished ranking member, my friend Ben Cardin.

STATEMENT OF HON. BENJAMIN L. CARDIN, U.S. SENATOR FROM MARYLAND

Senator CARDIN. Mr. Chairman, first, thank you for conducting this hearing. It is an extremely important hearing in regards to our nuclear agenda. The timing could not be more appropriate, two weeks before the fourth Nuclear Security Summit, the first occurring in the United States in 2010, then in Seoul in 2012, and the Hague in 2014, now back to Washington in 2016. Fifty-two countries will be here to review their nuclear safeguards, as well as four of the relevant international organizations.

The goal clearly is to enhance global nuclear security, mitigate the threat posed by nuclear terrorism. I agree with much of what the Chairman has said in his opening remarks. Since the end of the Cold War, we have seen U.S. leadership, bipartisan leadership, to deal with the growing threat of nuclear proliferation and the fear that nuclear weapons could end up in the hands of rogue states or terrorist organizations.

The Nunn-Lugar Act in 1991 is a prime example of Democrats and Republicans working together to make the world safer and the security of the United States stronger. The record of the Obama administration in these nuclear security summits, the Chairman mentioned some, and I think it is impressive: the removal and destruction of 3.2 metric tons of vulnerable highly enriched uranium or plutonium, a significant reduction that was certainly good news. Twenty-eight countries and Taiwan are now highly enriched uranium free. That is certainly good news.

This committee has looked at what we call the gold standard of trying to get less countries, not more, involved in having these types of materials or the capacity to enrich. There have been upgrades in 32 buildings storing weapons usable for fissile materials. That is also a major accomplishment that we have been able to do as a result of U.S. global leadership on this issue, and I applaud our first panel of witnesses for the roles they have both played in these summits.

So I thank both Secretary Countryman and Secretary Gottemoeller for their service to our country and the results of being able to move forward, particularly with some of our partners who otherwise, I think, would not have moved as aggressively as they have on nuclear safety issues.

But we have significant challenges—North Korea, their desire to proliferate. We have seen their fingerprints in other parts than just North Korea, and what they are doing today to perfect their nuclear capacity is very alarming, knowing that this is not a stable regime from the point of view of how they may use this capacity. So that is a major concern.

It is very noticeable that when we meet in two weeks, Russia will not be there. They made that decision two years ago, that they would not be participating in our Nuclear Security Summit. I would like to find out from our witnesses how we intend to continue to work with Russia. I agree with Chairman Corker, Russia has been less than effective in dealing with its nuclear program, and the U.S. involvement with Russia tends to bring about better results for nuclear safety. So without their presence here, how do we anticipate moving forward with Russia and their nuclear activities?

I am very troubled by countries that we have strategic partnerships with, but yet it seems to me that we are not able to have them follow international protocols on nuclear safety as it relates to the treaty that Senator Corker was referring to and other types of activities. They seem to be more concerned about some of their border security issues than they are about global issues, which is bringing about challenges, and we are not sure that is not being used just as an excuse to advance some of their nuclear programs, all being very provocative to what is happening in sensitive regions of the world. So I would be interested as to how we are going to continue to work with countries that we have strategic partnerships with to get more aggressive action to prevent proliferation of nuclear weapons.

There is also, of course, the area I have great concern about, what is going to happen as far as the fear of terrorism and making sure that terrorists do not get access to nuclear capacities. There is greater need today than ever for all of us to work together, bipartisan, to provide U.S. leadership to reduce the threat of destructive materials, whether they be radiological, biological, or chemical, falling into the wrong hands, and I look forward to our first panel and our second panel, where I will have the opportunity to question one of my former colleagues, Ellen Tauscher. It is a pleasure to see you here. It is also nice to have Mr. Toby with us today.

So, I look forward to both panels.

The CHAIRMAN. Thank you, Senator Cardin.

We will now turn to our distinguished witnesses.

Our first witness is the Honorable Rose Gottemoeller. She currently serves as Undersecretary of State for Arms Control and Nonproliferation. She has been before our committee several times. We thank her for being here again today.

Our second witness is the Honorable Thomas M. Countryman. He currently serves as Assistant Secretary of State for International Security and Nonproliferation, again before us many times.

I think both of you understand that, without objection, your written testimony will be entered into the record. If you could summarize in about 5 minutes or so, we would appreciate it. And again, we thank you for your service to our country and for being here today.

Rose, why don't you begin?

STATEMENT OF HON. ROSE E. GOTTEMOELLER, UNDERSECRETARY FOR ARMS CONTROL AND INTERNATIONAL SECURITY, U.S. DEPARTMENT OF STATE, WASHINGTON, DC

Ms. GOTTEMOELLER. Thank you very much, Mr. Chairman. It is a pleasure to appear before you and before Senator Cardin and the other members of the committee. It is always a great honor for me to come before this committee.

As a first order of business, Mr. Chairman, I just wanted to wish the committee a very happy St. Patrick's Day. You may think with my last name that I do not have a drop of Irish blood in me, but my mother was a redhead from Sidney, of Irish descent. So I am half Irish, actually. Happy St. Patrick's Day.

The CHAIRMAN. All three of you all are appropriately dressed. I am not, but we welcome you. Thank you for saying that. Thank you.

Ms. GOTTEMOELLER. I am very happy to update you on this administration's nuclear nonproliferation efforts and the role of the Nuclear Security Summit process in preventing nuclear terrorism. These are critically important issues for the nation and for the world, and so I thank you very much for your interest.

This administration came into office with nuclear nonproliferation as a critical component of our foreign policy. In 2009, President Obama called for a series of concrete steps to help protect our country and the world from nuclear dangers. We have taken steps to verifiably reduce the number of nuclear weapons that are deployed against us as we continue to maintain a safe, secure, and effective arsenal for as long as nuclear weapons exist.

I am glad to tell you that the New START Treaty, with the bipartisan support of this body, is providing predictability about the Russian nuclear arsenal at a time of continuing crisis and a very poor relationship with Moscow. The treaty is thus manifestly in the interest of U.S. national security.

In this hearing, however, Mr. Chairman, I will not further focus on arms reductions but on the steps we have taken to protect against the further spread of nuclear weapons and the threat of nuclear terrorism.

The prospects of nuclear terrorism present a very different challenge from proliferation by other countries. Terrorists do not make commitments, other than to destruction, and the black markets and smuggling networks that could link them with nuclear materials are not bound by recognized rules, norms, or by borders. Given the destruction that terrorists could unleash with only one weapon, nuclear terrorism is the greatest threat to our national security.

In order to marshal unprecedented attention and efforts to address this threat, the administration initiated the Nuclear Security Summit process in 2010, bringing together leaders from 50-plus countries and four international organizations. As you both have already noted, the fourth and final of those summits will be held here in Washington March 31st and April 1st, in two weeks' time.

The summit process, though, has not just been one of gathering leaders to meet every two years. Its achievements are measured by the practical follow-through of tangible and real-world actions making vulnerable nuclear material secure kilogram by kilogram, fence

by fence, and guard by guard. And again, I am grateful to you both for noting some of the accomplishments so far.

Assistant Secretary Countryman will outline in greater detail that we have expanded our ability to help international partners prevent, detect, and respond to trafficking in nuclear and radioactive material.

Summit participants will commit to maintaining the momentum of the Summit process after 2016, including through implementing action plans for five key international organizations: the U.N., the IAEA, INTERPOL, Global Partnership, and the Global Initiative to Combat Nuclear Terrorism. So the process will continue.

I want to thank the committee and its leaders for your attention and interest in these matters and your dedication and commitment to enhancing American national security. Thank you very much, Mr. Chairman.

[Ms. Gottemoeller's prepared statement follows:]

PREPARED STATEMENT OF HON. ROSE E. GOTTEMOELLER, UNDER SECRETARY FOR ARMS CONTROL AND INTERNATIONAL SECURITY, U.S. DEPARTMENT OF STATE

Thank you, Chairman Corker, Senator Cardin and members of the committee. It is always a great honor for me to come before this Committee and I am very happy to update you on this administration's nuclear nonproliferation efforts, and the role of the Nuclear Security Summit process in preventing nuclear terrorism. These are critically important issues for our nation and for the world, so I thank you for your interest.

This administration came into office with nuclear nonproliferation as a critical component of our foreign policy. In 2009, President Obama called for a series of concrete steps to help protect our country, and the world, from nuclear dangers.

We've taken steps to verifiably reduce the number of nuclear weapons that are deployed against us, as we continue to maintain a safe, secure and effective nuclear arsenal for as long as nuclear weapons exist.

I am glad to tell you that the New START Treaty, with the bipartisan support of this body, is providing predictability about the Russian nuclear arsenal at a time of continuing poor relations with Moscow. The Treaty is thus manifestly in the interest of U.S. national security.

In this hearing, I will not further focus on arms reductions, but on the steps we have taken to protect against the further spread of nuclear weapons and the threat of nuclear terrorism.

Among those steps has been turning the Proliferation Security Initiative and the Global Initiative to Combat Nuclear Terrorism into durable international institutions—increasing their membership and enhancing coordination to stop shipments of WMD and related items, as well as helping partner nations prevent dangerous nuclear materials from falling into the hands of criminals or terrorists. We have also helped to strengthen the International Atomic Energy Agency's (IAEA) safeguards system to ensure nuclear programs around the world are purely peaceful.

And earlier this year, the IAEA confirmed that Iran had completed its nuclear commitments to reach "Implementation Day" of Joint Comprehensive Plan of Action (JCPOA) reached between the P5+1, the European Union, and Iran, closing off all of Iran's pathways to acquire enough fissile material for a nuclear weapon. As it is fully implemented, the agreement is healing a major wound in the global nonproliferation regime.

Yet the prospect of nuclear terrorism presents a very different challenge from proliferation by other countries. Terrorists do not make commitments, other than to destruction, and the black markets and smuggling networks that could link them with nuclear materials are not bound by recognized rules, norms, or borders. Given the destruction that terrorists could unleash with only one weapon, nuclear terrorism is the greatest threat to our collective security.

In order to marshal unprecedented attention and efforts to address this threat, the administration initiated the Nuclear Security Summit process in 2010, bringing together leaders from 50+ countries and four international organizations. The fourth and final of these Summits will be held March 31 and April 1 in Washington, DC.

Through these Summits, the international community has strengthened the international organizations, institutions and multilateral legal instruments that make up the global nuclear security architecture.

Summit participants have also pledged to work together in building capabilities to prevent, detect, and respond to radiological and nuclear smuggling threats. We all recognize the urgent imperative of collective action to find, arrest, and prosecute nuclear smugglers and their networks, and recover any dangerous nuclear or radioactive materials that remain out of regulatory control.

The Summit process hasn't just been a matter of gathering leaders to meet every two years. Its achievements are measured by the practical follow-through of tangible, real-world actions making vulnerable nuclear material secure, kilogram by kilogram, fence by fence, and guard by guard.

Simple, but critical steps, such as bolstering security at facilities with nuclear and radioactive material, are paying dividends.

As Assistant Secretary Countryman will outline in greater detail, we have expanded our ability to help international partners prevent, detect and respond to trafficking in nuclear and other radioactive material.

At the 2016 Summit, leaders will highlight the accomplishments that have been made and commit to the further expansion and strengthening of the global nuclear security architecture.

Summit participants will commit to maintaining the momentum of the Summit process after 2016, including through implementing Action Plans for five key international organizations and initiatives: the U.N., the IAEA, INTERPOL, Global Partnership, and the Global Initiative to Combat Nuclear Terrorism.

Looking ahead, we hope to continue to work closely with Congress to further strengthen the global nonproliferation regime. Assistant Secretary Countryman and I are happy to outline specific efforts such as the improvement of verification and monitoring capacities, including ensuring that the IAEA is fully resourced, or demonstrating our support for nuclear weapons-free zones.

Mr. Chairman, Senator Cardin and members of the committee, we should be under no illusions about the enormous nuclear proliferation challenges we face, but looking ahead, we know that the price of freedom from nuclear terrorism is eternal vigilance. If we don't get this right, nothing else really matters.

I am certain that with your support, the United States will have the tools we need to meet these challenges.

I want to again thank the committee and its leaders for your attention and interest in these matters and your dedication and commitment to enhancing American national security.

I look forward to your questions.

Thank you.

The CHAIRMAN. Thank you.

Mr. Countryman?

STATEMENT OF HON. THOMAS M. COUNTRYMAN, ASSISTANT SECRETARY, BUREAU OF INTERNATIONAL SECURITY AND NONPROLIFERATION, U.S. DEPARTMENT OF STATE, WASHINGTON, DC

Mr. COUNTRYMAN. Thank you, Mr. Chairman, for this opportunity. I always appreciate it.

The Nuclear Security Summit that will occur at the end of this month is, as you noted, a crucial element of the strategy to keep terrorists from acquiring fissile material to make nuclear weapons but is only one part of our much broader strategy in nonproliferation. The Summit that you will see at the end of this month is not just about declarations but about real-world results, many of which you and Senator Cardin have already listed. It is not just the elimination of highly enriched uranium and plutonium stocks from many countries. It means a genuine improvement in the physical security and, just as importantly, the attention to security procedures in every country that has significant stocks of fissile material, including some of the countries that you have mentioned—in India, in Pakistan, in China, and in Russia, as well as other coun-

tries—a strong improvement in the actual security of nuclear materials.

With regard to Russia, we, of course, regret its decision not to participate. But again, the nuclear security situation has improved, the most important improvement, of course, occurring under the Nunn-Lugar program well before the Nuclear Security Summit began. But Russia also remains an important partner in a number of areas, and I would highlight that Russia and the United States continue to cooperate in the chairmanship of the Global Initiative to Combat Nuclear Terrorism, an association that brings together more than 90 countries for very practical steps to combat nuclear terrorism.

The Summit will, of course, at its conclusion, hand over the important work accomplished over the last six years to five additional entities in five separate action plans so that the work of the Summit will be taken up by the International Atomic Energy Agency, the United Nations and its 1540 Committee, INTERPOL, the Global Partnership Against WMD, and the Global Initiative to Combat Nuclear Terrorism.

This is specific to the Summit. You have mentioned and we look forward to questions about other areas of nuclear nonproliferation. Let me note here that, of course, the priority for my bureau this year is in continuing to support implementation of the Joint Comprehensive Program of Action. In my view, this is the most important nonproliferation success of the last decade. It is healing a wound in the nonproliferation treaty regime, and its successful implementation will mean that we have fewer concerns about additional proliferation around the world.

In addition, we are working hard in order to ensure that both the recent congressional legislation and the new Security Council resolution concerning North Korea are strongly enforced, not only by the United States but by bringing all of our diplomatic strength to bear to get other nations to enforce it just as strongly.

I share your concerns about the fact that reprocessing of spent fuel into plutonium raises considerations of nonproliferation, of safety and of security, and I can describe further our discussions of that with friends in Asia.

Finally, I would note that continued leadership, as the United States has demonstrated from one administration to the next in nonproliferation and disarmament, is built upon keeping our own commitments and obligations, and in this regard I very much welcome the fact that Congress last year passed the implementing legislation that enabled us to ratify the Amended Convention on Physical Protection of Nuclear Materials. With our ratification, we have been able to get other states to do the same. We are now just 10 states away from ratification of this most important international convention, and I look forward to it coming into force this year.

I would hope at the same time that we can work together in order to take action on other priorities and commitments, such as making a long-term commitment to providing the International Atomic Energy Agency the expanded resources it needs for its mission, at the same time confirming an outstanding nominee to represent us at the International Atomic Energy Agency, that is, Laura Holgate, and ratifying in the Senate this year what should

be very non-controversial protocols related to the establishment of nuclear-free zones.

We are, of course, ready to work with you on all of these issues and look forward to your questions today.

[Mr. Countryman's prepared statement follows:]

PREPARED STATEMENT OF HON. THOMAS M. COUNTRYMAN, ASSISTANT SECRETARY FOR INTERNATIONAL SECURITY AND NONPROLIFERATION, U.S. DEPARTMENT OF STATE

Chairman Corker, Ranking Member Cardin, and members of the committee, thank you for inviting me to testify today about the upcoming Nuclear Security Summit and the administration's efforts to advance nonproliferation.

In a landmark speech in Prague in April 2009, President Obama sounded a warning call on nuclear terrorism as one of the greatest threats to our collective security, citing the potentially catastrophic consequences of nuclear materials falling into the wrong hands. The President called on world leaders to convene a Summit to adopt concrete measures to strengthen the global nuclear security architecture and reduce the amount of nuclear material at risk of exploitation by bad actors.

Seven years later, President Obama is preparing to host the fourth Nuclear Security Summit (NSS), bringing together leaders from more than 50 countries and four international and regional organizations to strengthen the global nuclear security architecture and reduce the threat of nuclear terrorism by reducing the amount of nuclear material at risk of falling into the wrong hands.

These Summits have contributed measurably to our national security, spurring concrete actions to decrease highly enriched uranium (HEU) and plutonium stocks around the world, improve security measures for protecting nuclear facilities and transporting nuclear materials, and strengthen capacity to counter nuclear smuggling.

The Summit Process has raised the profile of the vital importance of ensuring the security of nuclear material. States have responded by accelerating their nuclear security activities, publicly highlighting their efforts, and taking additional measures.

An important focus of this process has been minimizing the civilian use of HEU, which can be used to make nuclear weapons, and getting existing stocks of vulnerable nuclear material properly and effectively secured. As a direct result of the Summit process, more than a dozen countries are now free of HEU. Together, countries have completely disposed of or removed more than 3.3 metric tons of HEU and plutonium. Nearly two dozen research reactors have been converted to using low enriched uranium (LEU) fuel or verified as shut down. To put this amount into perspective, 3.3 metric tons of HEU could be used to make more than 130 bombs.

The international community has also focused on simple, but critical steps, like bolstering security at facilities with nuclear and radioactive material to guard against the most serious threats. With an emphasis on transparency and cooperation, we have expanded our ability to prevent, detect and respond to trafficking in nuclear and other radioactive material. These efforts have included the installation of radiation detection equipment at over 300 international border crossings, airports, and seaports.

In January of this year, we signed a Joint Action Plan with Jordan to combat nuclear terrorism and improve efforts against nuclear and radiological smuggling—the most recent of 14 Joint Action Plans we have in place with key partner countries including Iraq, Kazakhstan, Georgia and Ukraine. Joint Action Plans have encouraged our partners to take concrete steps, including increasing radiological source security, strengthening border detection, and passing essential legislation that criminalizes nuclear and radiological smuggling. They have been instrumental in securing commitments to strengthen law enforcement and intelligence capabilities, establishing nuclear smuggling incident protocols, and improving nuclear forensics capabilities.

In 2014, Japan agreed to send to the United States more than 500 kgs of HEU and separated plutonium used for research purposes that was stored at Japan's Fast Critical Assembly in Tokai. The disposition of such material is a major victory for nuclear security and reduces the amount of weapons-grade nuclear material that might be targeted by non-state actors.

Chile has been active over the years in supporting the Nuclear Information Security, Training and Support Centers, and NSS Outreach Gift Baskets. Just prior to the 2010 NSS, Chile eliminated all of its HEU by sending it to the United States for disposition.

We continue to work closely with Ukraine to help that country bolster the security of its nuclear and radiological materials. Ukraine has fulfilled its pledge to remove all HEU from its territory, a pledge initially made at the first NSS, demonstrating Ukraine's commitment to upholding the highest nuclear security and nonproliferation standards. Our continued cooperation with Ukraine is particularly important as Russia's actions in Ukraine have undermined the foundation of global security architecture and created new challenges for the security of nuclear and radioactive materials on Ukrainian territory.

And tomorrow, Energy Secretary Moniz will lead a U.S. delegation to the opening of China's Nuclear Security Center of Excellence (COE), which is being established based on an agreement between our Department of Energy and the China Atomic Energy Authority. This center will serve as an important domestic nuclear security training resource for China's growing nuclear complex. Beyond China, in concert with other COEs in the region, it will provide a forum to train relevant personnel across Asia in nuclear security best practices. China is also working with Ghana and Nigeria to convert Chinese-origin miniature neutron source reactors from HEU to LEU. To promote ongoing cooperation on nuclear security, the United States and China have initiated an annual bilateral Nuclear Security Dialogue, the first of which we just conducted in February.

At the 2012 Nuclear Security Summit, Pakistan detailed its nuclear security related training centers, including at its core, the Pakistan Center of Excellence for Nuclear Security, which conducts courses across the spectrum of nuclear security disciplines, including physical protection and personnel reliability. This week, Pakistan is hosting a meeting of the IAEA-coordinated International Network for Nuclear Security Training and Support Centers at its Center of Excellence, where countries will share best practices related to nuclear security. Ambassador Bonnie Jenkins, the Department of State Coordinator for Threat Reduction Programs and the State Department lead on the Nuclear Security Summits, is attending this event. Twenty-six countries have pledged to create nuclear security Centers of Excellence, the vast majority of which have been established in conjunction with previous Nuclear Security Summits.

We regret that Russia has chosen not attend the Summit this month, and we remain disappointed that Russia has chosen to reduce our bilateral cooperation on nuclear security in recent years. As the countries with the largest stockpiles of weapon-usable nuclear materials, the United States and Russia have a special obligation to ensure we meet the highest standards of nuclear security. I note that we do continue to cooperate productively with Russia in co-chairing the Global Initiative to Combat Nuclear Terrorism (GICNT).

Thanks to the Summit process, we have seen increased membership of Summit participants in related international initiatives, such as the Global Partnership Against the Spread of Weapons and Materials of Mass Destruction and the GICNT; additional contributions to the IAEA nuclear security fund; enhanced compliance with United Nations Security Council Resolution 1540; and the establishment of Centers of Excellence in nuclear security in 24 countries, and of counter nuclear smuggling teams around the world.

We are also closer than ever to entry into force of the 2005 Amendment to the Convention on the Physical Protection of Nuclear Material (CPPNM/A). We are very grateful for your support in passing the necessary implementing legislation that enabled the United States to join this Amendment as well as the International Convention for the Suppression of Acts of Nuclear Terrorism (ICSANT) in 2015. This was very important because our ability to lead on nonproliferation is tied to the example we set.

With the President's direct engagement on nuclear security with leaders from countries on every continent, we have significantly strengthened bilateral, regional, and international cooperation on nuclear security.

This Summit will be a "transition Summit," that will lay the foundation for ensuring the important achievements of the past seven years are sustained. To do this, we will look to international organizations and multilateral partnerships to adopt individual institutional Action Plans on April 1and ensure they are implemented. We will continue to rely on our Summit partners, as well as engaging countries and organizations that have not been a part of the Summit process, to work with us to carry this important work forward.

I also would like to take this opportunity to thank this Committee and Congress for its strong bipartisan support for the State Department's nonproliferation programs, which reduce the threat of weapons of mass destruction around the world. These programs—Cooperative Threat Reduction (CTR), Export Control and Related Border Security Activities (EXBS), the Nonproliferation and Disarmament Fund (NDF), and Weapons of Mass Destruction Terrorism (WMDT) carry out a range of

vital work across the CBRN spectrum including work that directly advances the goals of the Nuclear Security Summit. They are among the most cost effective and valuable investments the nation can make to protect our citizens, our forces deployed abroad, and the international community.

I look forward to your questions.

The CHAIRMAN. Well, thank you, and thank you both again for being here.

Let me ask you this question. So we have this speech, if you will, in 2009. We have the Summit that is upcoming. What is it globally that is driving the fact that we actually have greater threat of nuclear conflict today than we did then in spite of these incremental accomplishments that have occurred that we all acknowledge, but we still have a greater threat today than we had then of a nuclear conflict? What is it that is driving just the opposite of what we had hoped would occur through these efforts that are taking place?

Ms. GOTTEMOELLER. Mr. Chairman, I will make two points in this regard. First of all, I do think that the President's Prague initiative at its core was focused on the threat of nuclear weapons falling into the hands of terrorists, and through such mechanisms as the Nuclear Security Summit and all the work we have done on global threat reduction, it has really raised awareness enormously among countries around the world that we really have to do everything we can to physically protect nuclear materials, fissile material, weapons, keep them out of the hands of terrorists. So I actually think that we have a good record, and you will be hearing more about it as the run-up to the Summit continues in terms of getting our arms around this threat.

It is a terribly unpredictable threat, however, the threat of nuclear weapons in the hands of terrorists, so we can never sleep. We have to keep at it day in and day out.

So that is one point I would like to make. I will grant you, sir, that we are very concerned particularly about nuclear arms racing in Asia. That is one reason, sir—and I took careful note of your comment about the Comprehensive Test Ban Treaty, bringing it up for consideration in this body and ratification would be futile at this time. I do think that that is a correct statement because we need to take time and we need to make an effort to really look at the national security value of this treaty. In my view, one of its great values is that it places a barrier in the way of this arms race in Asia that is creating more nuclear weapons capacity in countries in Asia, much more than we saw a decade ago. So this is a problem.

The CHAIRMAN. So today we have—and I appreciate the efforts you are talking about around materials not getting into terrorists' hands, but we find ourselves in a worse place, a greater threat for nuclear conflict than we had at that time, and I appreciate you bringing up Asia. This is an issue we had with Mr. Countryman. And again, we thank him for his service, and we have policy disagreements.

I do not understand why, knowing that there has been this race that is taking place in Asia, that we have 123 agreements that are not dealing with the reprocessing issue. It is encouraging reprocessing. We are not calling for a plutonium time-out, like we could have done, especially at a time when Tokyo was willing to put off the Rokkasho reactor from starting up again.

So I do not understand why the administration is putting in place policies that actually encourage the reprocessing of plutonium when we know that this is the area where proliferation is occurring. I do not know if you want to address that, both of you, but it is counter to what is in our national interest.

Mr. COUNTRYMAN. I frankly do not agree that we have a policy that encourages production of plutonium. The United States, as the Department of Energy can explain far better than I, is fully aware of the high economic costs of reprocessing, of turning plutonium into mixed-oxide fuel, and those economics are the same in every country on earth.

It is a policy that has little, if any, economic justification and, as I said, raises concerns about nuclear security and nonproliferation. The United States does not assist, does not encourage this, and has not done so in either the China or the R.O.K. 123 agreements. I would be very happy to see all countries get out of the plutonium reprocessing business.

The CHAIRMAN. But we enter into 123 agreements that allow it.

Mr. COUNTRYMAN. In the case of China, which has already long established a reprocessing capability, there is no 123 agreement we could have written that would have changed their policy one inch.

The CHAIRMAN. What about in South Korea?

Mr. COUNTRYMAN. In the case of South Korea, we wrote a 123 agreement that agrees to defer any decision about South Korea using U.S. technology for reprocessing to a date well in the future and leaves that decision in the hands of the Secretary of Energy.

The CHAIRMAN. And we all know why we did it.

Mr. COUNTRYMAN. Well, there are multiple——

The CHAIRMAN. We kowtowed to political pressure.

Mr. COUNTRYMAN. I strongly disagree.

The CHAIRMAN. I am sorry but I disagree with that. Why did we not address it on the front end? Why did we not address it on the front end if we were not doing that? Because we did not want to take a hard line against plutonium reprocessing. That is exactly it.

What about the INF Treaty? Russia has been in violation now for two years. That was controversial because it came up during the time of the new START Treaty. I supported the new START Treaty. I think it was the right thing to do, and as long as we invest in modernization, like we should, it will end up being a good thing for our country. But where are we right now, Ms. Gottemoeller, on the INF violations that Russia, as I understand it, still has not come into compliance over?

Ms. GOTTEMOELLER. First of all, Mr. Chairman, I really want to underscore a point that I made several times to you and to other colleagues up here on Capitol Hill. That is, prior to the ratification in December of 2010 of the new START Treaty, our intelligence community was not aware of any Russian activity inconsistent with the INF Treaty. So this has been an issue that has arisen since the new START Treaty was ratified and entered into force.

I have to say, in my diplomatic career, it has been one of the most difficult issues that I have ever dealt with. It has been extraordinarily difficult because the Russians simply have not wanted to engage in a way that would resolve this problem, and we are committed to bringing them back into compliance with the INF

Treaty and essentially recommitting to that treaty for the future, again because we believe it is in our national security interest and the interest of our allies. Our allies, both in Europe and Asia, have a very, very strong interest in this matter.

I will say that we have been engaged in steady diplomacy. I see some progress in Russia's willingness at the highest level to recommit to the treaty now, and we are looking forward to moving expeditiously in 2016 to try to make some progress on this difficult matter. But I cannot duck the fact that it has been a very difficult negotiation.

The CHAIRMAN. And what has made it so difficult? They are clearly in violation. What is there to negotiate?

Ms. GOTTEMOELLER. Well, they argue that they, in fact, are in full compliance with the INF Treaty, and instead they have thrust three allegations our way. So it is, I would say, quite typical Soviet-style negotiating tactics; that is, the best defense is a good offense.

The CHAIRMAN. I have had a good relationship with you, and I appreciate the many, many conversations that we have had, and certainly the meetings we have had down at the SCIF, and I would just make an observation. I know you have been nominated to a position that does not require Senate approval with NATO.

I do think there is widespread concern about sometimes many people feeling like you are an apologist for Russia at a time when NATO really needs to push back against Russia, and I would just encourage you somehow to figure out a way to change that opinion. I realize that you are not going to be confirmed by the Senate. It is not one of those kind of positions. But especially as it is related to this INF issue, I am just being honest with you. I think you already know that, but people are very concerned that you really have not been the kind of person who has pushed back heavily against Russia and have been more of an apologist because of your many interactions.

I do not know if you want to respond to that or just acknowledge that that is something that needs to be addressed.

Ms. GOTTEMOELLER. Perhaps, Mr. Chairman, I will just make two points. It is inevitable, I think, because of my longstanding background working with the Soviet Union and the Russian Federation. I have spent time working as the Director of the Carnegie Moscow Center, so spent time working in Moscow and with Russians. I have respected Russian colleagues. I do feel that pragmatic problem-solving in the diplomatic realm is important, and that is whether we are talking about the Russians, whether we are talking about the Pakistanis, whether we are talking about the Chinese or the Zimbabweans. Pragmatic problem-solving is my approach to how we actually move the ball forward.

So I do not apologize for that kind of pragmatism in the service of our country, and I only undertake measures that are in the interest and in the service of my country, with the full accord of our interagency community. So that is one point I would like to make.

The other point I would like to make, sir, is I think all those who are concerned in this matter should not take my word for it. Of course, I would defend myself. But I think asking people like Assistant Secretary Victoria Nuland, who was up here yesterday, who has quite a tough reputation in this regard; people like Dan Freid,

who is our sanctions negotiator, quite a tough reputation in this regard; and people like General Breedlove. I think it would be worth perhaps them making some inquiries of folks like that, what they think about me.

The CHAIRMAN. Thank you very much.

Senator Udall?

Senator UDALL. Thank you very much, Chairman Corker.

And thank you both for coming before the committee again.

President Obama has expressed his support for the ratification of the Comprehensive Test Ban Treaty, and many arms control experts believe that the past opposition to this treaty is no longer valid, and I agree with that. In the past, some believed that live testing might be necessary to ensure the reliability of the U.S. stockpile. Some also were skeptical that the treaty could not be enforced because rogue nations might test weapons clandestinely and do that underground.

My understanding is that the arms control expert consensus is that those concerns are no longer valid, and I would like to seek your judgment on these matters.

First, the national labs, using science-based models, have developed the life extension programs to maintain our stockpile. Much of this work occurs in New Mexico at the two national labs there, Sandia and Los Alamos. We have some of the best scientists in the world at our national labs.

Yesterday, the Administrator of the National Nuclear Administration, General Klotz, said he is confident in our deterrent and the life extension program's ability to maintain the stockpile without testing. I believe all of the national lab directors concur with this assessment.

Do you both share the confidence in science-based life extension programs and that the technology means that live testing of nuclear weapons is not needed for our national security?

Ms. GOTTEMOELLER. Yes, Senator.

Mr. COUNTRYMAN. Yes.

Senator UDALL. You do?

Ms. GOTTEMOELLER. Yes.

Senator UDALL. Do you want to expand on that at all, or shall I fire away with another question here?

Ms. GOTTEMOELLER. Well, I would just comment quickly that at the time this body last reviewed the Comprehensive Test Ban Treaty in 1999 for ratification and failed to give its advice and consent, at that point stockpile stewardship, science-based stockpile stewardship was a newborn baby and had not yet been developed. In the ensuing decade-and-a-half, it has made enormous strides, and just as Administrator Klotz noted yesterday, it is providing high confidence now that we can sustain and maintain our nuclear arsenal without explosive nuclear testing.

So we are at a much different place with science-based stockpile stewardship, and it is well worth a re-look at its capability.

Senator UDALL. Great. The national labs have also developed cutting-edge, sophisticated sensors and monitoring devices, including satellite technology to monitor the globe for a nuclear test and thus prevent the proliferation of nuclear materials. Given these capabilities, are you confident that we can detect a nuclear test using

existing technology so that the treaty would be verifiable and enforceable? And can you briefly outline how this technology helped us understand the latest North Korean test?

Ms. GOTTEMOELLER. Yes, and I believe my colleague can join me in saying yes. Again, back in 1999, the international monitoring system was but a gleam in the eye of those who had put the treaty together, and it was not yet deployed. The international monitoring system is an international system of monitor, seismic, radiological, ultrasound all around the world, many countries participating, and our laboratories participate in preparing the technology and helping to put the technology in place at the various sites.

The bottom line is that this system is already proving its worth. Within a very few hours, it had detected the nuclear explosion, the latest test in North Korea, and had provided the first assessment to the international community. The great value of this system is that it is in the service of the entire international community, as well as the CTBTO and the CTBT system.

So that is one point that I would really like to underscore. But you are quite right, Senator, that the labs are also constantly working on upgrading and improving our own national technical means so we do not have to depend on the IMS. We have in addition an entire layer of monitoring capability constantly refreshed by technological developments that are implemented by our national laboratories.

Senator UDALL. Secretary Countryman, do you have anything to add there?

Mr. COUNTRYMAN. No, sir. My boss is the expert here.

Senator UDALL. Okay. Could you also comment—I mean, we have the Iran agreement that we have entered into, and I think a lot of the same things I talked about in terms of the sensors, the monitoring, have allowed us to have a confidence level, I believe, in that agreement that normally, if you go back 10 or 20 years, we would not have had that kind of confidence level, because we have built up the science and we have worked very hard to do that. Would you agree with that?

Mr. COUNTRYMAN. I would just say that under the Joint Comprehensive Program of Action, the ability of the International Atomic Energy Agency to inspect and verify and monitor activities in Iran exceeds anything that has been done in Iran before and, in fact, exceeds the standard for virtually any other member of the NPT. It relies crucially upon more advanced technologies, many of them developed by the same national laboratories that you have described, and it is one of the reasons why that kind of advanced technology needs to be applied more widely not only in Iran but by the IAEA in other countries.

Senator UDALL. Yes. Thank you very much.

I would just note that we were honored to have a visit from Chairman Corker several years back to the national laboratories, and we had an extensive couple of days when we explored all of these issues and were able to have a very good exchange, and we were really honored to have him.

The CHAIRMAN. Well, it is amazing what is happening there, and I know Rose and Tom will attest to this. One of the things that makes the thesis behind the new START Treaty be achieved is we

have got to invest heavily in the facilities and do those things that we are supposed to be doing on modernization. I think everyone understands that Russia has the best and brightest scientists in their country working on their nuclear program. Where we are refitting and grinding out and making sure old warheads work well, they are developing new ones, and I think people understand that.

So I hope that we will invest a lot more in the activities that are taking place there, and thank you for being such a great host.

Senator Flake?

Senator FLAKE. Thank you. Thank you for your testimony.

I am sorry I arrived late, and hopefully you are not plowing old ground here.

In 2009, President Obama said that he wanted to, within four years, secure all vulnerable nuclear material. It is now about seven years. Just give an assessment of where we are right now, either of you.

Ms. GOTTEMOELLER. Perhaps, Senator, I will just say a few words and then turn the floor over to Assistant Secretary Countryman.

I really wanted to emphasize that we have done an enormous amount to basically get fissile material under better control and to minimize its use. Twelve countries plus Taiwan have given up their highly enriched uranium over the past years as we have been working on this problem. So we have made significant strides, but there is more work to be done.

Tom?

Mr. COUNTRYMAN. Right, that is the answer. There are fewer countries where fissile material—that is, highly enriched uranium or plutonium—exists. Those countries where there are significant amounts of such material have enhanced their physical security and have enhanced their procedural security. In addition, we now have more than 20 nuclear security centers of excellence around the world in which countries can train their people on how to sustain those highest levels of security.

So I think this progress, as well as a dozen other things I could mention, have substantially met the goal of focusing the attention of the entire world on this issue.

Senator FLAKE. Thank you. How would you assess overall nuclear security in Pakistan?

Ms. GOTTEMOELLER. Tom Countryman made reference to these centers of excellence that have been expanding around the world. I will say I was able to visit Pakistan's center of excellence a few years ago, and they have really done an excellent job to establish a program there that is not only serving Pakistan's interest but is also serving on a regional basis to provide training with the help of the IAEA and so forth.

So they have done quite a bit, and I have seen their awareness raised of issues like the necessity of personnel reliability, careful attention to who they are hiring into their complex and so forth. So, some good steps have been taken.

But I will say, sir, that this is a two-sided problem, and the other side is not so good. We have been very concerned about Pakistan's deployment of battlefield nuclear weapons. Battlefield nuclear weapons, by their very nature, pose security threats because you

are taking nuclear material, battlefield nuclear weapons, out to the field where, as of necessity, they cannot be made as secure. So we are really quite concerned about this, and we have made our concerns known and will continue to press them about what we consider to be the destabilizing aspects of their battlefield nuclear weapons program.

Senator FLAKE. Speaking regionally, how about India? How would you assess the overall nuclear stability there?

Ms. GOTTEMOELLER. India is at an earlier stage in establishing their own center of excellence, but they are also working with us quite extensively and vigorously in the Nuclear Security Summit context. Prime Minister Modi will be here for the Nuclear Security Summit, and we have seen quite a bit of advancement in India's work on this problem in recent years.

Do you want to add anything, Tom, on this?

Mr. COUNTRYMAN. No.

Senator FLAKE. One more, China. Do you have an assessment of China's nuclear security?

Ms. GOTTEMOELLER. Again, we have been very glad that China has been working with us in the Nuclear Security Summit context. President Xi will be here for the summit, so they are paying attention to this matter at a very high level. This very day, Secretary Moniz is in Beijing to cut the ribbon on their own center of excellence to work on this nuclear security problem.

I talked a moment ago about the necessity of pragmatism. I call these kind of bread and butter approaches to nuclear security, really getting the institutions in those countries to focus on the training, on the hardware, on putting in place the necessary guns, gates, and guards to take care of these problems, and these centers of excellence serve as a locus to do that kind of work.

So again, it is a developing story with China, but we feel like they are taking some very important steps.

Senator FLAKE. With regard to China and North Korea, we often say that our best leverage in North Korea is with China. Does China feel sufficient urgency to deal with the issue in North Korea of nuclear security?

Ms. GOTTEMOELLER. I will let Mr. Countryman take that question, please.

Mr. COUNTRYMAN. Of course, we do not define North Korea as a nuclear security issue. It is a proliferation threat, a state in possession now, apparently, of nuclear weapons.

China is, I would say—there are better experts on China than me—but I would say it is at a point of transition. It has traditionally had a view of North Korea as an important buffer zone between China and a U.S. military presence in South Korea, and therefore had an interest in sustaining the regime. It still sees that interest, and that is very much in their foreign policy tradition.

But I think it is clear that, definitely within the Chinese society, as well as within the Chinese government, there is a greater realization that the security threat to China is not the U.S. troops in South Korea, it is the existence of North Korean nuclear warheads and the likelihood that that could be used to start a confrontation on the peninsula. So I see it evolving, but I cannot say it has yet fully sunk into the Chinese thinking.

Senator FLAKE. Thank you.

Thank you, Mr. Chairman.

The CHAIRMAN. The fact is, though—I appreciate the line of questioning—that the world and us are less secure from a nuclear standpoint because of developments since 2009 in Pakistan, India, and China. That is a yes/no. That is true, is it not?

Ms. GOTTEMOELLER. Sir, I am not sure I agree with you because I do see how assiduously we are working with all of those countries. Again, the Nuclear Security Summit context has been a very good one for us to get further intertwined with the authorities, with the institutions in those countries who are working on these problems.

The comments I made a few moments ago about the development of nuclear weapons in those countries, that is a question that has been long developing. In fact, the emergence of a nuclear arms race in Asia, and particularly in South Asia, is one that has been concerning a number of administrations over time.

So if you are talking about the issue of nuclear terrorism, I do feel like we have made signal progress in that area. If you are talking about the development of new nuclear weapons capabilities, there is no question that we have some important and troubling modernization programs going on. We have to continue to wrestle with those in a variety of ways.

The CHAIRMAN. I do not think there is any question the answer is yes.

Senator Menendez?

Senator MENENDEZ. Thank you, Mr. Chairman, and welcome. I see that you are all appropriately dressed for the day, and I appreciate all the green out there.

I have some concerns. Let me see how much I can get in in this line of questioning. In the case of tests of ballistic missiles capable of delivering nuclear payloads, whether by Iran or Russia or North Korea or Pakistan, does the State Department see any other options than following the route of condemnation in the U.N. Security Council to try to push back on this? Because condemnation does not seem to be working to mitigate those realities.

Mr. COUNTRYMAN. Well, first, they are significantly different cases among the countries you cited—Russia, Pakistan, Iran, and North Korea. There are specific U.N. Security Council resolutions and specific U.S. legislation with regards to Iran and North Korea, and we are, of course, committed to implementing those.

In the case of—let us take Iran first. The concern in Iran is, first, that it is participating in a regional ballistic missile arms race. Even if all of these missiles being built by various countries in the Middle East are armed with conventional warheads, as we assume they will be, they are in themselves a destabilizing factor, and that is a recognition that is contained in the Security Council resolutions that prohibited Iran from testing or from acquiring ballistic missile technology.

Now, a number have noted that the U.N. Security Council Resolution 2231 modified the outright ban on ballistic missile testing and changed it to "call upon." To us, that is not a significant difference. But the far more important point is that the previous reso-

lutions ban on providing ballistic missile technology to Iran remains in place.

Senator MENENDEZ. "Call upon" is not a far lesser standard? If I call upon you but you decide not to go ahead and listen to what I call upon you to do, what is the consequence? Nothing, right?

Mr. COUNTRYMAN. The consequence remains that, as I was saying, the previous resolution required all countries not to provide Iran with ballistic missile technology, and that has been the focus of our efforts over many years. We believe we have significantly slowed any progress Iran has made. We continue to implement those strategic trade controls today. We have partners in many countries.

Senator MENENDEZ. I appreciate your lengthy answer, but it is verbatim from what I would get from the testimony. The problem is that "call upon" is a far lesser standard, number one. Number two, Iran is moving forward significantly. They are on the verge of, or did, or are about to—I was reading about sending a missile into space that would change the whole dynamic, and it does not seem to me that we are very committed to creating actionable items other than condemning their testing.

So, let me ask you this. You said, Mr. Countryman, that the summit is going to—a large part of the summit's work is going to be taken over by the IAEA; is that correct?

Mr. COUNTRYMAN. A significant portion, yes.

Senator MENENDEZ. Significant portion. How important is that?

Mr. COUNTRYMAN. Well, important in many different dimensions. First of all, it is important that there is a body with near-universal membership, that is the International Atomic Energy Agency, that also has the technical capability to take the standards developed in this smaller voluntary group and make them global and to follow up in a persistent way. So I think that the IAEA's reputation and its ability to set global standards——

Senator MENENDEZ. So it is going to be important.

Mr. COUNTRYMAN [continuing]. It is very important, and it is also important for enhancing the overall reputation.

Senator MENENDEZ. It is going to be very important. So here is what my concern is. When Secretary Kerry appeared before the committee to discuss the budget, I raised the U.S. Government Accountability Office report that I commissioned along with Senator Kirk. In that report, the GAO's preliminary findings raised significant concerns about the challenges and limitations that the IAEA faces.

To name a few: a limited budget from irregular funding sources; human resource shortfalls; certain important equipment operating at capacity already; limited analytical capabilities that will be tested by the new mandates of the JCPOA, forget about anything they are going to do in pursuit of the summit; a need for $10 million per year for the course of 15 years above its present budget; as well as a lack of authorities. It will have to depend to a significant degree on the cooperation of the Iranian state. And the GAO's preliminary observations point directly to future problems with monitoring and verifying and meeting the requirements of the JCPOA.

So my point is if, in fact, we have the challenges that the GAO report talks about, the JCPOA, while we still want the IAEA to be

a central important international body to deal with all these other issues that we are talking about, are we not putting a significant part of our national security interests in an agency that is underfunded, understaffed, does not have the human resource capacity, and is going to depend to a large degree on the voluntary actions of others?

Mr. COUNTRYMAN. First, I would say that the additional duties that are being transferred from the Nuclear Security Summit to the IAEA are not what will break the bank for the IAEA. Second, I absolutely agree that the significant additional costs of the Iran implementation add to the IAEA's budget concerns. The good news here is that a number of countries—dozens around the world—have made clear their commitment to fund the extra costs above the ordinary monitoring costs associated with Iran.

Senator MENENDEZ. So we have covered the budget for the next 15 years at the rate that the IAEA and the GAO says is necessary.

Mr. COUNTRYMAN. I do not have a concern that we will be unable to meet the JCPOA's specific costs that are above the normal safeguard monitoring costs. But it goes back to a point—and I am glad you asked it—that I made in my opening statement. I would like to see this administration and this Congress make a long-term commitment to steadily expanded resources for the International Atomic Energy Agency because, yes, it is that central to U.S. security and to global security.

Senator MENENDEZ. Thank you, Mr. Chairman.

The CHAIRMAN. Senator Gardner?

Senator GARDNER. Thank you, Mr. Chairman.

Thank you to the witnesses for your time today.

Just to follow up on some discussion of the IAEA and the JCPOA, the material we ship to Russia, do we have assurances that that is being stored safely and that the IAEA has access to those, or the inspection regime is being carried out and a plan to do that?

Mr. COUNTRYMAN. I need to check to get you a more precise answer, but I do not believe that we have any concerns about that material once it is in Russia. It is not going back to Iran. It adds to a very large stockpile of enriched uranium in Russia. We do not have a concern about Russian misuse.

Senator GARDNER. If you could get back to us on that.

Mr. COUNTRYMAN. I will.

[Mr. Countryman's response to Senator Gardner's question follows:]

Mr. COUNTRYMAN. Under the Joint Comprehensive Plan of Action (JCPOA), Iran is allowed to maintain a total enriched uranium stockpile of no more than 300 kilograms of up to 3.67 percent enriched uranium hexafluoride (or the equivalent in different chemical forms) for 15 years. To meet this JCPOA requirement, Iran shipped nearly its entire stockpile of low-enriched uranium (LEU) to Russia in December 2015, including all nuclear material enriched to near-20 percent not already fabricated into fuel plates for the Tehran Research Reactor. With the exception of partially fabricated fuel and targets, this Iranian-origin nuclear material is now owned by Russia per the terms of Iran's commercial arrangements with Russia, and Iran no longer has any claim to the material. Consistent with the JCPOA, partially fabricated fuel and targets in Russia will be returned to Iran in small increments for use in the Tehran Research Reactor, subject to conditions decided upon by the Joint Commission.

Russia is one of the largest holders of nuclear material globally, and Iranian-origin LEU in Russia adds a marginal amount of material to Russia's total stockpile.

Like the United States, as a Nuclear Weapon State under the Non-Proliferation Treaty (NPT), Russia has a "voluntary offer" safeguards agreement with the International Atomic Energy Agency (IAEA), which allows the IAEA to apply safeguards to nuclear material in certain facilities if Russia so chooses. There is no requirement that the IAEA apply safeguards to nuclear material in Russia, including the material removed from Iran, which is not currently under IAEA monitoring. The United States has partnered with Russia for many years to ensure that Russian nuclear facilities meet internationally recognized standards with regard to safety and security, and we expect that Iranian origin material in Russia will be stored safely and securely at the same standard as Russian origin material.

Senator GARDNER. For the inspection regime and the plan for that, that would be fantastic.

In April of 2009—actually, let me follow up a little bit more with Iran as well. There had been reports in January after the North Korea nuclear test of continued cooperation, communication between Iran and North Korea regarding nuclear proliferation and other issues. There were even some reports that Iran was believed to be housing some nuclear weapons-related technology in North Korea.

Could you talk, either one of you, about any involvement or linkage between North Korea and Iran in terms of nuclear issues?

Ms. GOTTEMOELLER. Sir, these are very sensitive matters that we can provide a very serious briefing on in another setting. What I will say, and it adds to the point that Assistant Secretary Countryman made a moment ago, we have gone beyond using things like the U.N. Security Council resolutions to building up other capacity, for example through the Proliferation Security Initiative. We have major capacity-building efforts going on throughout Asia that have led to a wide-ranging partnership, a lot of countries in the region, transit countries, places where shipments flow through like Singapore and so forth, working very closely with us to enhance abilities to interdict those kinds of shipments.

So I did want to get the point on the table that there are other ways we have gone about working these problems as well, including the missile technology control regime, longstanding technology controls that are internationally embraced and implemented. There are a lot of ways we go about handling these problems.

But in terms of your precise question, to get you precise answers, we would have to take it to a different setting.

Senator GARDNER. Then perhaps in this setting, without going into areas where we cannot talk in an open setting here, are we concerned about—are you concerned about an Iran-North Korea axis on nuclear issues?

Ms. GOTTEMOELLER. We watch this, yes, very, very closely.

Senator GARDNER. Thank you. And if detected—again, this may be something that you cannot answer here. Are we more concerned recently in activities between the two nations?

Ms. GOTTEMOELLER. I would say it has been a constant, steady concern that we have just kept an eye on.

Senator GARDNER. We would love to talk about that further in a different setting.

In April 2009, President Obama said in a speech in Prague, "Rules must be binding, violations must be punished, words must mean something, the world must stand together to prevent the spread of these weapons. Now is the time for a strong international response, and North Korea must know that the path to security

and respect will never come through threats and illegal weapons. All nations must come together to build a stronger global regime, and that is why we must stand shoulder to shoulder to pressure the North Koreans to change course."

Could you talk a little bit about North Korea, the threat that North Korea poses to the administration's nuclear agenda, and what it means to "punish North Korea," what means we have to punish North Korea that we have employed, and are additional considerations being made in addition to the executive order last night and others?

Ms. GOTTEMOELLER. Yes. Thank you, sir, for raising the fact that the President signed a new executive order last night that, in effect, puts in place all the authorities needed to implement the legislation worked out with the Congress, which he signed into law, and also then enables and enhances our ability to implement the U.N. Security Council resolution.

Let me take just a minute to talk further about what went into the U.N. Security Council resolution. It went far beyond what we have ever done in the past to sanction North Korea and in particular zeroed in on their ability to ship goods in and out of the country. It has put significant, significant constraints on their ability to ship by sea, by rail, and here it was important to ensure that China was ready to come along because China in the past had not been ready to put in place such intensive and tight sanctions, constraints.

So I do think that there is a qualitative difference about this U.N. Security Council resolution, first of all that will really shut down shipments in and out of North Korea. That is one. But the second point is it is also targeting luxury goods. We have a problem in Iran. We knew that there was a politically active middle class that was providing a kind of leverage on the top leadership to make some decisions about coming along with the JCPOA P5+1 negotiations. It is not the same kind of situation, a different kind of society, a different kind of economy in North Korea. So we feel that the importance of these constraints on the shipment of luxury goods into North Korea get at precisely that elite, and so also have the potential to have greater leverage than we have been able to have in the past.

So I do think that we are in a better place, but the proof of the pudding is in the making, is this going to be implemented or not, and that is what we are focused on now.

Senator GARDNER. And it is my understanding that China is not going to take action on its own beyond the Security Council resolution—is that correct?—when it comes to this issue, proliferation of nuclear issues?

Ms. GOTTEMOELLER. Do you want to take that?

Mr. COUNTRYMAN. Yes. A couple of points on that question and to add to what the Undersecretary said. In dealing with North Korea and finding the levers that will influence its behavior, you have to be realistic. This is a regime that has prioritized missile and nuclear development above feeding its own people, and that limits what you can do. It means that we do have to focus on two pressure points. One is hard currency earnings, and the other is the elites of the regime who support the beloved marvelous leader,

how to have a direct effect upon them, and that is why this Security Council resolution goes into such mind-numbing detail, has to get down to close exemptions, and clarify questionable interpretations from previous resolutions. In that sense it is very strong, but you have to realize that you are working at a target that has few openings.

As far as China goes, we do not assume that Chinese support for a strong resolution is the same as a Chinese determination to implement that resolution faithfully. But we also do not assume they will not do it. They have made clear they are ready to work with us on detailed implementation and consultation on a range of issues with regard to this resolution.

What they are prepared to do on the political side that goes beyond implementation of this resolution, I am sorry, is not my field.

Senator GARDNER. Yes, I understand, Secretary Countryman.

If I may, Mr. Chairman, just one additional question on China.

A March 9th, 2016 report by the Institute for Science and International Security, North Korean efforts to produce indigenous fuel for the IRT reactor at Yongbyon appeared to have started several years ago. One sign was North Korea's 2012—this is according to the report—procurement in China of a considerable amount of foreign equipment, in fact a complete production line for making this fuel, according to a source knowledgeable about North Korea's nuclear programs.

Do you know if that statement is accurate that was reported by the Institute for Science and International Security?

Mr. COUNTRYMAN. I do not. I will check. I will just say that I have previously said before this committee that the Chinese economy has been the primary source of advanced nuclear and ballistic technology and materials for North Korea for a long time.

Senator GARDNER. And do we know the name of the entities that are responsible for that?

Mr. COUNTRYMAN. On the Chinese side or on the Korean side?

Senator GARDNER. The Chinese side.

Mr. COUNTRYMAN. On the Korean side, I think we do. On the Chinese side, I will have to check the exact report and get back to you.

Senator GARDNER. And have we issued any kind of sanctions on entities that we may have identified for such a technology transfer exchange?

Mr. COUNTRYMAN. For transfer of technology to Iran.

Senator GARDNER. Or sales of equipment, yes.

Mr. COUNTRYMAN. We have previously sanctioned Chinese entities. We do that on a regular basis according to the evidence. I have to check on this particular case.

Senator GARDNER. But that was for Iran. We have not done that for a China/North Korea exchange.

Mr. COUNTRYMAN. I will have to check. I believe we have, but I have to double check.

Senator GARDNER. Thank you.

The CHAIRMAN. Thank you, sir.

Senator Markey?

Senator MARKEY. Thank you, Mr. Chairman. I thank the ranking member, Senator Cardin, for his indulgence, allowing me to go at this time.

So, the first time I ever sat in this committee was in May of the year 1980, and Senator Glenn was the subcommittee chairman of nonproliferation, and the United States had decided that it was going to sell 55 tons of uranium to India without any full-scope safeguards. The Pakistanis were going crazy, very upset. Warren Christopher sat here to defend it. I was going to make the proposal in the House to defeat it. I was successful in defeating it in the House. Senator Glenn made it here in the Senate and he lost by one vote, and that uranium went on to India without full-scope safeguards, and ultimately Pakistan did react in terms of its nuclear program. It just created a syndrome. That was 1980.

So here we are, we are talking about India and Pakistan, we are talking about the nuclear proliferation. And, by the way, the 2008 nuclear agreement with India created a similar dynamic where they were able to choose which one of their plants was under full-scope safeguards, and the Pakistanis said they would ramp up their production plutonium reactor to match it in order to create more nuclear weapons.

So all of that is part of the question I am about to ask, which just turns to the Chinese, the Japanese, and the Korean situation, and the domino effect that unfolds if the U.S. does not give the leadership up front.

But I would like to just begin by thanking all of you for your lifelong commitment to nuclear nonproliferation, and to Secretary Tauscher, my old pal, for her lifelong commitment to it as well.

So both the Chinese and Japanese reprocessing plans are supported by the French state-owned firm Areva, and media reports have suggested that French leaders have been actively encouraging both Japan and China to maintain their plans to reprocess. In the past, the United States had succeeded in preventing the spread of reprocessing facilities in East Asia by persuading our French allies not to spread this technology to additional countries.

Have you or anyone else in the administration discussed the dangers of large-scale plutonium reprocessing in East Asia with French leaders?

Mr. COUNTRYMAN. Yes.

Senator MARKEY. And what is the response that you have received from them?

Mr. COUNTRYMAN. Without going into detail on a confidential exchange, I would note that the French have progressed more than other countries in designing a nuclear fuel cycle that makes intelligent and nearly economically rational use of plutonium. They believe that it can be done. We have concerns, not about the French record or about French security or French commitment to nonproliferation, but we have a different set of concerns in Asia, and that is the point that I made to French counterparts.

Senator MARKEY. Well, and what is that additional concern?

Mr. COUNTRYMAN. The additional concern, as you and a couple of other senators have noted, is there is a degree of competition among the major powers in East Asia. It is a competition that, in my view, extends into irrational spheres such as, "Hey, they have

this technology; we have to have it too." No matter that it is a technology that makes no economic sense and that would not improve their standing in the world.

Senator MARKEY. Perfect. Thank you. So that is my 1982 book, "Nuclear Peril: The Politics of Proliferation," which is about how it will just unfold and India will beget Pakistan, Pakistan will beget Iran, et cetera, et cetera.

Mr. COUNTRYMAN. I do not quite see that linear connection, but——

Senator MARKEY. Well, it all becomes a big competition, that is all I am saying. The politics of it is you are not a real nation unless you can do it too. You do not get the respect if you cannot do it.

So the nuclear cooperation agreement between the United States and Japan will need to be renewed in several years. The current agreement, signed in 1988, provides advance consent for Japan to transfer spent fuel to Europe for reprocessing.

As the next administration considers a new nuclear cooperation agreement with Japan, what steps should it take to reduce Japan's reliance on reprocessing and to encourage it to rely on alternative means for disposing of spent fuel?

One of the dangers of Chinese and Japanese reprocessing, obviously, is that it will create pressure on South Korea to pursue its own reprocessing efforts, and that would undermine our efforts to achieve the de-nuclearization of the Korean Peninsula and to prevent North Korea's nuclear ambitions from creating further pressures for proliferation.

So what are our conversations with Japan? Do they understand this politics of proliferation issue and how ultimately they are less safe rather than more safe if they move in that direction?

Mr. COUNTRYMAN. A number of points there. But to the central question, first it is important to note that the Japanese plant at Rokkasho is not currently in operation. There is no plan to begin operation before 2018. The Chinese plant by Areva that you referred to is not yet built, not yet a contract to build it, although the Chinese certainly know how to do reprocessing on their own.

In terms of conversations with Japan and other Asian partners, we are doing that both on a more technical level through the Department of Energy, and on a level of security and nonproliferation interest through the Department of State. We think that there are genuine economic questions where it is important that the U.S. and its partners in Asia have a common understanding of the economic and nonproliferation issues at stake before making a decision about renewal of the 123 agreement, for example, with Japan.

Senator MARKEY. Well, the more pressure, the better, from us. We cannot preach temperance from a bar stool. We have to have the highest standards in the world, and we have to impose them, especially in this area, in any country that we have influence over.

Finally, as part of the Pentagon plan for new nuclear weapons, the Pentagon has proposed development of a new nuclear air-launched Cruise missile with significantly altered features including improved range, stealth, and precision. The administration is also planning to upgrade the B–61 gravity bomb with a new tail kit that would allow for improved targeting, permitting the warhead to have a similar yield. These improvements have led former

Secretary of Defense William Perry to suggest that the Pentagon's modernization plans could make it easier for future presidents to conduct so-called limited nuclear wars. And as retired Vice Chairman of the Joint Chiefs of Staff, General James Cartwright, told the New York Times in January, "What going smaller does is to make the weapons more thinkable."

Secretary Gottemoeller, in your view, do these plans make us safer, or do they potentially make the world more dangerous?

Ms. GOTTEMOELLER. First, I would like to talk about the B–61, if I may, sir. The President, in his nuclear posture view and forward in its implementation, has stressed that we will not create any new nuclear weapon capabilities. I know that there have been commentaries in the outside media among experts in this regard, but, in fact, that is not the case. There are no new missions, no new capabilities inherent in these life-extended B–61 bombs. In fact, the way that the B–61 is going through a life extension program is so as to consolidate several different types of B–61 into a single B–61 so-called 12, and that in effect allows us to think about further reductions in our gravity bombs because we are able to consolidate essentially the different types that were applied to different missions into a single type. But there are no new missions being developed for the system, no new capabilities.

Senator MARKEY. So you are saying it will not have improved targeting, and it will not have a smaller yield, and it will not be, as a result, more usable?

Ms. GOTTEMOELLER. I do not agree with that statement, sir. I do not think nuclear weapons are very usable, period.

Senator MARKEY. I understand that, but again——

Ms. GOTTEMOELLER. And certainly I do want to tie it back to the nuclear posture view and the President's policy agreed by our entire administration, including the Pentagon, that we want to deemphasize nuclear weapons in our national security doctrine, and we have effectively done so over the past seven-plus years at this point, and that will continue to be the trajectory of our policy.

Senator MARKEY. I guess I would say—thank you, Mr. Chairman—that as the Iranians seek to miniaturize and make them more precise, as we do the same thing with one of our weapons, again we are preaching temperance from a bar stool. We have to basically not try to make them more usable ourselves.

Thank you, Mr. Chairman.

The CHAIRMAN. Thank you. Thank you very much.

Now we will move to someone who has been involved in proliferation on his own, the articulate Senator Rubio, who we welcome back to the dais. Thank you so much for being here today.

Senator RUBIO. Well, thank you very much.

Secretary Gottemoeller, I wanted to ask you, what is the administration's plan to respond to Russia's request under the Open Skies Treaty to allow surveillance planes with high-powered digital cameras? I know there has been a lot of concern about that in open press.

Ms. GOTTEMOELLER. Yes, sir. Let me just say a word about the Open Skies Treaty. It is a treaty that was first created by President Eisenhower, by General Eisenhower back during the 1950s. He saw it as a benefit to us and our allies to have the kind of mu-

tual confidence building that would come from being able to fly airborne platforms over the Soviet Union at that time. So I want to stress, first of all, that this treaty is completely reciprocal. In fact, the Russians have a quota of about 20 flights a year. They have used three or four of those flights in the last couple of years. We fly much more frequently over the Russian Federation with our allies and partners in Europe than they fly over the United States. So that is just some basic facts about the treaty.

With regard to the digital sensors you mentioned, that was written into the treaty when it was negotiated. We are seeing the end of what film cameras, our own guys, can get their hands on film for the cameras. It has simply become an obsolete technology, as everybody who has gone out and bought a digital camera will recognize. So in order to continue to implement the treaty, all treaty partners are now looking at digital cameras. We ourselves will want to deploy digital cameras in the future.

One final point about how this treaty and the Russian platform differs from a kind of spy platform, one of their national technical means, one of their satellite birds, something like that. It differs because we are closely intertwined with how they implement. Our technicians are on those planes when they fly across the country. We get every single photograph they take, so we can see what they are photographing. That is much different from national technical means. We do not know what they are photographing, what their satellites are——

Senator RUBIO. I guess my question is, how does the administration intend to respond? Is it your testimony, then, that we view their request as in compliance with the agreement?

Ms. GOTTEMOELLER. It is absolutely in compliance with the agreement. It is something we are going to want to do.

Senator RUBIO. So is Russia in full compliance with the treaty, given it imposes restrictions on territory that is subject to this surveillance?

Ms. GOTTEMOELLER. If I could just make one final point on the last thing. National technical means we can mitigate; sometimes we know what is happening. But with Open Skies, we have the right under the treaty to take mitigating measures. If we do not want the Russians to see something, we can mitigate, and we plan for that and think about it. So that is one final point.

Senator RUBIO. Territory. There are restrictions on where they can go.

Ms. GOTTEMOELLER. Yes. We are concerned, and if you have had a chance to look at our compliance report in the last year you will see there are several concerns laid out about these restrictions that the Russians are placing, for example on our ability to fly close to what we consider and everybody else considers sovereign Georgian territory. The Russians say we do not want you flying close to South Ossetia. So these are compliance concerns. We have raised them with the Russian Federation. We have just been——

Senator RUBIO. What about domestically, in the U.S.?

Ms. GOTTEMOELLER. In the U.S.?

Senator RUBIO. Yes. I mean concerns about territorial limitations on them. Are they in compliance with the agreement in terms of what it imposes on them over U.S. territory?

Ms. GOTTEMOELLER. We essentially ourselves are in compliance with the treaty, so we let them fly according to proper requests over U.S. territory.

Senator RUBIO. Have they exceeded—have they asked to go to areas that are not necessarily part of the treaty? In essence, for example, over the U.S. electrical grid and other sorts of areas? There has been open-source reporting that these flights are taking pictures of and looking at areas that are not national defense related, per se, but in fact have to do with our electrical grid and other things of this nature. I have seen the open-source reporting. So, is there a concern about that?

Ms. GOTTEMOELLER. Right. So I think we have to take account of the fact that their national technical means, their spy satellites and other means are constantly photographing our entire territory. Again, they have the right to photograph. They have to file their flight plans, though. They have our experts on board, our technicians, and we get the photos that they take, and so do all the other treaty partners. So I think there is actually an advantage, because then we know what is interesting to them. There is an advantage to us.

Senator RUBIO. So let me read you a quote from General Stewart, the Director of the IAEA, who recently testified that—here is his quote. He said, "I have great concern about the quality of the imagery, the quantity of the imagery, the ability to do post-processing of digital imagery, and what that allows them to see as foundational intelligence that I would love to have personally and I would love to deny the Russians having that capability."

So I signed a letter with my Democratic and Republican colleagues on the Senate Intelligence Committee highlighting the concerns of professionals such as these about this request. Is he wrong in this statement?

Ms. GOTTEMOELLER. General Stewart has particular responsibilities related to intelligence collection, national technical means. I do want to stress that the Open Skies Treaty is an arms control treaty with a larger set of goals and purposes, among them confidence building, mutual confidence building. So I do think that the treaty has a great value in that regard. It has a great value to our allies and to our partners, such as Ukraine. Ukrainians made great use of the treaty during this terrible crisis with Russia.

So I do think we need to bear in mind that the purpose is somewhat different from national technical means. It has a larger purpose, which is mutual confidence and predictability, and the predictability is of great value nowadays. So I think General Stewart and I have a somewhat different view of the utility of the treaty, but certainly I understand his responsibilities and what they entail.

Senator RUBIO. You talked about this, so let me ask you one more question. How can we trust that Russia is sharing information acquired through the treaty with the treaty partners?

Ms. GOTTEMOELLER. Because we are there as they take the pictures, and we know what they are taking, and we get the material, basically.

Senator RUBIO. So we have full confidence that they are, in fact, sharing the information that they are acquiring?

Ms. GOTTEMOELLER. Yes, we do. And, sir, I just wanted to take note that there has been, to my knowledge, a recent study that has come out. It is classified in nature, but I think you and your colleagues would benefit from seeing it. It has just come out in the last couple of days, so I think it would be well worth getting it to you for a review of it.

Senator RUBIO. Okay. Thank you.

The CHAIRMAN. Senator Cardin?

Senator CARDIN. Once again, thank you all for your work.

Let me make a couple of observations. In regards to North Korea, I think it was good news that we were able to get, through U.S. leadership, the Security Council action against North Korea, including, of course, the support of China. Now, as you pointed out, Secretary Gottemoeller, it is going to be up to us to enforce that resolution, particularly China in its actions, in order to make those sanctions really hold. I think that is going to be a challenge, but I think we need to focus to enforce the international sanctions against North Korea.

In regards to Iran, I was listening to the exchange with Senator Menendez. To me, I agree with Senator Menendez as to the difference in the tone of the resolution as to the previous resolutions. The issue is that enforcing the ballistic missile restrictions is totally consistent with the JCPOA. We have said that several times. The President of the United States has said that.

So having a statutory basis for these violations to me is something that would help the U.S. in making it clear that we will not allow Iran to violate its ballistic missile restrictions and that there will be penalties if they do, regardless of whether the Security Council is capable of passing sanctions or not. We certainly hope the Security Council will pass sanctions.

So it seems to me that helps you and that you should be working with Congress in order to achieve that type of authority and make it clear to our international partners that, yes, we would like to see the international community move forward. That is our intention for illicit activities by Iran. But if not, the United States, we already have the authority but we are going to give you the statutory authority to move forward in that area. I would think that would be helpful.

And I want to put into the record—Secretary Countryman is shaking his head in an affirmative direction. So, Mr. Chairman, we have the administration's support for that.

The CHAIRMAN. So entered.

Senator CARDIN. The other issue I would just like to comment on is Pakistan. There has been an exchange here with regard to Pakistan and their activities. It is obviously very distressful that they will not work with us on a fissile material treaty and that they are producing materials at a very fast rate. When we look at our relationship with Pakistan, we look at a partner that we hoped would be fighting ISIL and dealing with their safe havens and their border areas, the mountainous border areas with Afghanistan. So the attentions that they are paying to their nuclear development seems to be inconsistent with where the priorities need to be in that region.

So it is somewhat frustrating that we have not made more progress, particularly when they are seeking stronger help from the United States in regards to their security measures. I know Senator Corker has commented about that in the past, and I do think that this is an issue that needs to be engaged with Pakistan as we deal with some of the other security-related issues.

That was not the question I was going to ask. The question I want to ask is, in this Nuclear Security Summit, could you just share with us whether there will be an opportunity to expand beyond radiological weapons but to deal with weapons of mass destruction? We have seen too many examples where weapons of mass destruction have been used against, in many cases, a civilian population. Is there an effort being made in this security conference to deal with other than just radiological weapons?

Mr. COUNTRYMAN. The agenda for the Summit itself includes four sessions in which the presidents and prime ministers and other leaders present engage in a free-flowing discussion. That is the most interesting thing, really, about this process, is it is not a United Nations meeting where everybody stands up and reads their 10-minute speech. It is actually a discussion, and the final session includes a discussion among the leaders about how to extend the lessons learned from the Nuclear Security Summit process into combatting other weapons of mass destruction and preventing terrorist access to other weapons. So, yes, that is part of the transitional legacy of this summit.

Senator CARDIN. And does the U.S. have an intent to be engaged on this particular subject of dealing with weapons of mass destruction?

Mr. COUNTRYMAN. We are deeply engaged across the board, particularly in working with the countries of the Middle East that are seeking to ensure that Da'esh does not acquire weapons of mass destruction technology in the Middle East.

Senator CARDIN. The other area that I mentioned in my opening statement is the absence of Russia that is very much believed to be part of the status of our current relationship with Russia, the problems in Ukraine and elsewhere. But it also has been clear that when the United States and Russia have worked together, particularly on the technical aspects of nuclear security, that there are better results.

So are we still having that type of conversation with the Russians as it relates to implementing some of the technical aspects of nuclear security issues?

Ms. GOTTEMOELLER. Very much, Senator. In fact, we are continuing to work with them on removal of highly enriched uranium from countries around the world. Uzbekistan was a recent project of that kind where they worked with us, and we already talked about the removal of enriched uranium, highly enriched uranium from Iran. So they have been willing to step forward.

Frankly, it has been rather puzzling to us, first of all, why they did not want to remain involved in the Nuclear Security Summit, but also why they have not been eager to continue to expand under this agreement that was negotiated and signed in June of 2013, the so-called NEPA agreement, why they have not been willing to move forward with further nuclear security cooperation. My personal as-

sessment is that it has fallen prey to the downturn in our relationship.

But it is very interesting that they have picked and chosen what they want to continue to work with us on. You mentioned several important projects already. Another one was the removal of 1,300 tons of chemical weapons from Syria. They were a close partner in that effort, and they have been a close partner in the implementation of the JCPOA not only on the removal of HEU but on other matters.

So it is a very interesting conundrum, in my view.

Senator CARDIN. Thank you.

Thank you, Mr. Chairman.

The CHAIRMAN. Thank you.

Senator Risch?

Senator RISCH. Thank you.

Ms. Gottemoeller, you mentioned that the Open Skies Treaty had the value of being a confidence building matter, enterprise. I have to tell you that I find that view delusional, to be honest with you. I do not understand how anything dealing with the Russians could be characterized as confidence building under the present circumstances that we have with the Russian Federation today. So with all due respect, I think you guys are going up a blind alley there.

I want to talk about your own report, the State Department's compliance report that states—and this is, again, referring to the Open Skies Treaty. Your own report states that Russia routinely prohibits U.S. flights over Russian territory in the Caucuses, around Moscow, and in Kaliningrad, and regularly denies priority access to airfields and air traffic control when we are trying to conduct those flights.

What are you doing about that?

Ms. GOTTEMOELLER. Senator, I will stress, first of all, that these appeared in the compliance report because they are very serious compliance concerns that we have——

Senator RISCH. Absolutely.

Ms. GOTTEMOELLER [continuing]. About the behavior of the Russian Federation. So I absolutely agree with you about that, sir.

Senator RISCH. What are you doing about it?

Ms. GOTTEMOELLER. What we are doing about it is we have linked arms with our allies and we are getting now—well, we are already in the course of talking to the Russians about many of these problems, but getting ready for a coordinated effort to work together with them to solve. We consider these compliance problems, and we want to get them solved because we see the importance of this treaty.

Senator RISCH. So, in fact, you have done really nothing about it at this point, other than getting ready. Is that what you are saying?

Ms. GOTTEMOELLER. No, I would not say that, sir. We have been raising these issues over time, but I will say that we want to redouble our efforts now, and the other thing that we have done is essentially we have dialed back on any flexibility that we may have shown in the past. So we are essentially really taking a very strin-

gent approach to implementation of the treaty with regard to the Russians now.

Senator RISCH. With all due respect, I do not find anything you have told me comforting.

Thank you, Mr. Chairman.

The CHAIRMAN. We have a second panel, and we are getting ready to introduce them. I want to thank you both for being here. This committee is the one committee—there may be others, but it has been one where we have worked strongly in a bipartisan way and tried to resolve our issues and tried to, even when we disagree, to disagree agreeably.

I have to say, again, I have had many personal meetings, or at least encounters, with both of you, and I respect you personally. I do find that it is a little—both of you are career people. It is not as though you have come in as political appointments. You have been doing what you have been doing for a long, long time. Look, I do not think there is any doubt that today there is more potential for nuclear conflict than there was in 2009, no question. And even though we have made some strides relative to nuclear security relative to elements getting into terrorists' hands, as was mentioned, and we mentioned some of the accomplishments that have occurred, the potential for a military miscalculation in nuclear weapons today is higher by far, by orders of magnitude, than it was in 2009.

I am just going to say that I get disappointed when I see career people that are professional that come to these hearings and gloss over, continue to talk about the glass as half full, when we have gone significantly downhill relative to nuclear proliferation.

So again, I did not expect this hearing to be as it turned out to be today. I am disappointed that there is not an acknowledgement of the reality that exists around the world. There are little segues and mentionings of things that are problems, but it just does not seem with the two of you—I am sorry—to be a realization that we have been on a very negative slope relative to this issue. People are not honoring treaties. Asia is going in a very different direction than we had hoped. And yet, you all are here telling us how, gosh, we have done a wonderful job.

So I just want to express my disappointment with the two of you being here today and your testimony. I am sorry. I have been concerned about national security issues for some time. Candidly, today, the highlighting of this particular issue today has heightened that because, again, it just seems to me we deal in a world that does not focus on reality.

So again, I thank you for your service. I really do thank you for your service. That is sincere. I am disappointed in your testimony today, and I am sorry, I just am. I am very direct and transparent in my thinking and feeling, and I am just disappointed in the lack of urgency, seriousness around the way the world is going relative to these issues in your testimony today.

Yes, sir?

Senator CARDIN. Mr. Chairman, first of all, I think this has been a very helpful hearing. It is an open session, as it should be an open session. Some of the issues that we need to talk about must be in closed sessions, and I think that might—we have had those

discussions in the past, and I think we need to have them going forward because I think some of these issues only can be adequately discussed in a closed session.

I just take a different view of the progress we have made, not just during the Obama administration but also during the George W. Bush administration and previous administrations in dealing with the realities that it is a much more dangerous world out there with states that will do things that are unthinkable, but they will do it, and the support of terrorist organizations, and the strength that terrorist organizations have.

But when we look at the record over the last couple of decades, including the Obama administration, the amount of controls over nuclear materials has been strengthened pretty dramatically, and the reductions of nuclear weapons has been pretty dramatic when you look at the numbers and when you look at the risk factors.

So I think we have made constant progress on nuclear security. Do we have to make more? You bet we do, when you have factors like North Korea and Iran and other states that have been mentioned, and when there are two countries that dominate the nuclear discussions, which are Russia and the United States.

So I am frustrated we cannot have a safer environment. I would like to see more progress. But I think a lot of this is just the dangerous situations we have in the world, and I very much admire both Secretary Countryman and Gottemoeller for the incredible patience that they have had and effectiveness in dealing with people that we would find very difficult sitting down for any length of time because of their attitudes towards some of the global issues.

So with that in mind, I would hope that we would continue to find ways in which our committee can stay engaged in these discussions.

The CHAIRMAN. Thank you.

Thank you again for your testimony. I know that you know the record will remain open. I know that you all respond promptly to questions, and I look forward to seeing you in other settings.

Ms. GOTTEMOELLER. Thank you, Mr. Chairman. Thank you, Mr. Cardin.

The CHAIRMAN. We will now move to the second panel that will consist of two witnesses.

The first witness is Mr. Will Tobey. Mr. Tobey is a Senior Fellow at Belfer Center for Science and International Affairs at the John F. Kennedy School of Government. We thank you for your contribution today.

Our second witness will be the Honorable Ellen Tauscher, who we have all gotten to know well and appreciate her contributions on national security at many levels. She served as Undersecretary of State for Arms Control and International Security from 2009 to 2012.

I want to thank you both for being here. As you know, second panels are often not as well attended as first panels, but the contributions you make to the record and our understanding is much appreciated.

With that, Mr. Tobey, if you would begin?

STATEMENT OF HON. WILLIAM H. TOBEY, SENIOR FELLOW, BELFER CENTER FOR SCIENCE AND INTERNATIONAL AFFAIRS, JOHN F. KENNEDY SCHOOL OF GOVERNMENT, CAMBRIDGE, MA

Mr. TOBEY. Chairman Corker, Ranking Member Cardin, it is a great pleasure to be before the committee again.

I was asked to address seven important and difficult questions with the invitation. I will divide my answers into two parts, nonproliferation and nuclear security.

The administration's nonproliferation policy was defined by President Obama's April 2009 Prague speech, which listed his objectives. First came a pledge to seek peace and security in a world without nuclear weapons, although he acknowledged that this goal could not be reached quickly and might not be reached within his lifetime.

Well, the new START Treaty has entered into force. Russia's violation of the INF Treaty and refusal to address non-strategic nuclear weapons, together with the growth of nuclear arsenals in North Korea, Pakistan, and perhaps elsewhere, leave this goal more distant than it was seven years ago.

Similarly, we are not closer to a Fissile Material Cut-Off Treaty or a Comprehensive Test Ban Treaty, other nonproliferation goals from the Prague speech. The President sought to strengthen the nonproliferation treaty in three ways, none of which have been fully implemented.

Finally at Prague, the President introduced "a new international effort to secure all vulnerable nuclear material around the world within four years." Unfortunately, this goal, too, has not yet been achieved.

Moving to nonproliferation, North Korea remains, as has been noted already, a dangerous and intractable threat, with a growing arsenal, and it continues to issue threats.

Finally on nonproliferation, the administration may have an opportunity, as has been noted by many members of the committee and some of the earlier witnesses, to foster a decision in Northeast Asia not to pursue civil reprocessing of spent nuclear fuel which results in separated plutonium. I think actually this is an enormous diplomatic opportunity, and if it were achieved would advance U.S. and international security.

On nuclear security, the best way to prevent nuclear terrorism, recently security for nuclear materials has improved modestly, while the capabilities of some terrorist groups has grown dramatically, particularly, for example, the Islamic State, suggesting that in a net calculation, the risk of nuclear terrorism may be higher now than it was two years ago.

Areas where there has been significant but still incomplete progress on nuclear security include stringent nuclear security principles; ubiquitous, effective, and sustainable nuclear security; consolidating nuclear weapons and material; building international confidence; strengthened security culture and combatting complacency; and continuing an effective dialogue after the Summit's end.

U.S. spending on nuclear security declined from about $800 million in Fiscal Year 2012 to just over $500 million in Fiscal Year 2016, a 38 percent cut, with a further 24 percent reduction due to

come about in Fiscal Year 2017. Russia's absence from the Summit is a problem. It holds the world's largest arsenal of nuclear weapons and the largest stockpile of nuclear material, and it faces perhaps growing problems with corruption, organized crime, and Islamic extremism. We will need to reinvigorate cooperation with Russia if we are to address successfully the nuclear security issue.

Finally, nuclear smuggling remains an issue. The first line of defense is security, but seizures of fissile material outside of authorized control in 2003, 2006, 2010, and 2011 are empirical evidence of nuclear security failures. Intelligence, law enforcement, border security, and sensors are all necessary to combat this problem.

We have done much over the past 25 years, Republicans and Democrats, the Congress and the executive branch, but key gaps remain. Progress has slowed; budgets are declining. President Obama urged his colleagues at the last Nuclear Security Summit to sprint toward the finish line. That is exactly the kind of sense of urgency that we need.

[Mr. Tobey's prepared statement follows:]

PREPARED STATEMENT OF HON. WILLIAM TOBEY, SENIOR FELLOW, BELFER CENTER FOR SCIENCE AND INTERNATIONAL AFFAIRS, HARVARD KENNEDY SCHOOL OF GOVERNMENT

Chairman Corker, Ranking Member Cardin, members of the committee, it is a distinct pleasure again to be with the Committee to discuss issues related to preventing nuclear terrorism and proliferation.

My invitation contained a list of seven important and difficult questions. I will divide my answers to them into two parts—first, preventing nuclear proliferation, and second, advancing nuclear security (the most effective way to prevent nuclear terrorism).

At the outset, however, I would like to acknowledge an important aspect of U.S. policy to prevent nuclear proliferation and terrorism; it has enjoyed a bipartisan consensus across decades in both the legislative and executive branches. Senators Sam Nunn and Richard Lugar authored the legislation creating nuclear security cooperation with the former Soviet Union, and President George H. W. Bush signed it. President Clinton established a broad range of programs that were extremely effective. President George W. Bush expanded their scope and pace, and doubled their budgets. President Obama established the Nuclear Security Summits, which have cut red tape and created a sense of responsibility among leaders. And Congress actively participated in and funded all of these programs and projects.

Nonproliferation

President Obama enunciated his nonproliferation goals on April 5, 2009 in Prague. His agenda was broad and ambitious, and he related his disarmament goals to his nonproliferation objectives. His foremost objective was "to seek the peace and security of a world without nuclear weapons," while acknowledging that "this goal will not be reached quickly—perhaps not in my lifetime." Although the President signed and the Senate consented to ratification of the New START Treaty, Russia's violation of the INF Treaty and refusal to negotiate reductions of non-strategic nuclear weapons, together with the growth of nuclear weapons arsenals in North Korea, Pakistan, and perhaps elsewhere, leave this goal more distant today than it was seven years ago, and with no visible path to achieving it.

The President also sought to conclude or to ratify Fissile Material Cut-off and Comprehensive Test Ban Treaties. Here too, prospects for achieving the administration's goals are more distant than they were seven years ago.

The President sought to strengthen the Nonproliferation Treaty by three means. First, he called for more resources and authorities for international inspectors. The International Atomic Energy Agency's (IAEA) total budget for nuclear verification rose from €136 million in 2009 to €143 million in 2016, an increase of less than one percent per year. Since the Prague speech, Additional Protocols between the IAEA and 36 countries have entered into force, bringing the total to 126 in force. The Iran nuclear deal both broadened and circumscribed established IAEA inspection authorities.

Second, the President sought to strengthen the Nonproliferation Treaty by demanding, "real and immediate consequences for countries caught breaking the rules." He also asserted that, "Rules must be binding. Violations must be punished. Words must mean something." Here the record is mixed, but does not meet the standard set by the President. So far anyway, China has shielded North Korea from the strongest effects of international sanctions with infusions of trade, aid, and investment, and consequently Pyongyang continues prohibited missile and nuclear tests. The Iran nuclear deal has curtailed Iran's programs, but it did nothing to compel Tehran to provide a complete and correct declaration of the military dimensions of its program, as required by its Safeguards obligations, and it has done nothing to halt prohibited missile tests.

Third, the President sought to strengthen the Nonproliferation Treaty by creating a new framework for international cooperation, including a fuel bank. The IAEA Board of Governors approved establishing a fuel bank in 2010 and in August 2015 the Agency signed an agreement with Kazakhstan to host it. A new framework for civil nuclear cooperation remains more elusive, with new states calling for a uranium enrichment capability, and the prospect of three civil reprocessing programs capable of separating plutonium in Northeast Asia. Thus, a new framework to limit the spread of enrichment and reprocessing technologies—the keys to making nuclear weapons—remains a challenge.

Finally, President Obama introduced "a new international effort to secure all vulnerable nuclear material around the world within four years" to the Prague agenda. He also called for new standards and expanded cooperation with Russia. I will deal with the nuclear security issue in the second half of my testimony. Here, I would note that the goal of securing all vulnerable nuclear material around the world has not yet been achieved, and neither have stringent standards for nuclear security, nor expanded cooperation with Russia.

North Korea remains the most dangerous and intractable proliferation threat facing the United States. To date, bribes have not sufficed to buy an end to North Korea's nuclear weapons program, and China's trade, aid, and investment have more than offset the effects of sanctions. The Institute for Science and International Security estimates the North Korean nuclear arsenal to have been 10-16 weapons at the end of 2014, and that both plutonium and highly enriched uranium stocks will continue to rise. North Korea recently conducted a fourth nuclear test and continues to launch ballistic missile tests. Recent statements from Pyongyang are even more troubling—albeit ambiguous—as they seem to foreshadow some sort of test involving a nuclear capable re-entry vehicle.

Since 2006, the United Nations Security Council has imposed five sanctions resolutions on the DPRK of increasing stringency. The latest, Resolution 2270, imposes new financial sanctions, limits on small arms transfers, and inspection procedures for North Korean shipping. Moreover, North Korea has recently attracted unprecedented criticism. Responding to Pyongyang's threats to use "preventive nuclear strikes," the Russian Foreign Ministry said on March 8, 2016, "Pyongyang should be aware of the fact that in this way the DPRK will become fully opposed to the international community and will create international legal grounds for using military force against itself in accordance with the right of a state to self-defense enshrined in the United Nations Charter." China too has been more critical than in the past.

The real test of whether or not international cooperation can halt and reverse the North Korean nuclear program, will be the level of cooperation and effort that China will extend. Beijing effectively holds a veto over sanctions policy.

Beijing's primary interests are no war and no instability, which could lead to political upheavals and refugee flows. Yet, in many ways North Korean actions are directly antithetical to stated Chinese interests. First, Pyongyang is the primary source of instability in Northeast Asia, launching military attacks, conducting nuclear and missile tests, regularly threatening its neighbors, and managing its economy so poorly that millions of people have died of famine. Second, DPRK belligerence draws the United States closer to its allies in Japan and South Korea. Third, the North's nuclear threats increase the salience of U.S. extended deterrence. Fourth, Pyongyang's nuclear and missile tests spur greater American and allied interest in missile defense. Fifth and finally, North Korea's threats make the continued presence of U.S. forces on the Korean Peninsula more, rather than less, likely.

From a positive perspective, peaceful reunification, were it to occur, would advance the interests of all peoples in Northeast Asia. A source of instability would be removed. The black hole that is North Korea's economy could open up to reform, trade, and growth. South Korea's security imperatives would diminish, perhaps offering more options regarding the continued need for U.S. ground forces. While there is no immediate prospect for peaceful reunification of Korea, convincing Bei-

jing that it would be in China's long-term interest could go a long way toward creating the conditions necessary for it to occur. North Korea is not viable without Chinese support.

Finally, on nonproliferation, I was asked, "What opportunities has the administration missed . . . " Earlier, I alluded to one such issue—the growth of reprocessing programs in Northeast Asia. The long-delayed spent fuel reprocessing plant at Rokkasho in Japan is inching toward opening, perhaps in 2018. When it is complete, it will be capable of producing 8 tonnes of separated plutonium per year, adding to existing stocks of about 47 tonnes, held both in Japan and Europe. Separating plutonium is of concern for two reasons.

First, it creates weapons usable material, which might be subject to theft. Nearly all of the fissile material that has been seized outside of authorized control has been in bulk form, as created in reprocessing plants. If even one percent of the annual plutonium production were to be stolen, it would be enough for ten bombs per year. Second, it raises concerns of proliferation risk. While Japan has an impeccable nonproliferation record, China has raised the issue. Last June, China's Foreign Ministry spokesman said, "Japan's long-term storage of sensitive nuclear materials has outweighed Japan's needs and aroused the serious concern of the international community. . . . We expect Japan to respond to the concerns of the international community, take practical action at an early date, and address the imbalance between its demand and supply of sensitive nuclear materials."

Despite repeated assertions to the contrary, reprocessing is economically indefensible. Japan is coming to realize this, facing its 28th year of construction, plant costs approaching $25 billion, and 23 delays to the start of operations totaling about 20 years. Despite this sorry experience, China recently announced plans for a reprocessing plant slated for completion (assuming it does not face similar problems) by 2030. Furthermore, South Korea has pressed to keep alive an option to reprocess spent fuel through a technology called pyro-processing. If Japan moves ahead, it will be more difficult to convince Seoul not to do the same. If South Korea begins reprocessing, it is difficult to imagine negotiating an agreement prohibiting the DPRK from doing so.

A concerted diplomatic effort by the administration, articulating security and nonproliferation concerns to Japan because of the precedent Rokkasho might establish, explaining to China the costs the United States has faced at the MOX Fuel Fabrication Facility, which would start with separated plutonium, and seeking concerted decisions in Northeast Asia to forego reprocessing, could prevent and reverse the spread of technology for making fissile material. All three countries would be safer and more prosperous for deciding not to reprocess spent fuel, at least for the foreseeable future.

Nuclear Security

In discussing this issue, I will draw upon a forthcoming report my Belfer Center colleagues Matthew Bunn, Martin Malin, Nickolas Roth, and I have prepared in advance of the 2016 Nuclear Security Summit, although the opinions expressed in this testimony are solely my own.

The danger of nuclear terrorism remains real. Measures to secure nuclear weapons, and the material needed to make them, are the most effective means to reduce that danger. The job of securing nuclear materials is never "done;" it requires a commitment to continuous improvement. Since the 2014 Nuclear Security Summit, security for nuclear materials has improved modestly, but the capabilities of some terrorist groups, particularly the Islamic State, have grown dramatically, suggesting that in a net calculation, the risk of nuclear terrorism is higher than it was two years ago.

Nuclear security around the world has improved dramatically over the past 25 years. Gaping holes in fences no longer exist, sensors are widely in place to detect theft by insiders, procedures are tighter, and more than half the countries that once had nuclear material are now free of it. Nonetheless, significant weaknesses persist, and much remains to be done to protect materials effectively and sustainably in the face of evolving threats. Unfortunately, progress is slowing and funding is declining.

Areas where there has been significant but incomplete progress, demanding further attention and actions include:

- Committing to stringent nuclear security principles;
- Implementing effective and sustainable nuclear security ubiquitously;
- Consolidating nuclear weapons and weapons-usable materials;
- Strengthening security culture and combating complacency;
- Building confidence in effective nuclear security; and,

• Continuing an effective nuclear security dialogue after the summits end.

Unfortunately, U.S. spending on nuclear security cooperation has declined from over $800 million in fiscal year 2012 to just over $500 million in 2016, a 38 percent decline, and the administration proposes a further 24 percent cut for 2017, to less than $400 million. "International Nuclear Security," a flagship program, would be cut by two-thirds, to a level not seen since the 1990s. Some of these reductions result from completed work or ending cooperation with Russia, but they have also led to a slowing or postponing of some important nuclear security work. administration estimates call for spending substantially less on nuclear security every year for the next five years than the government was projecting only one year ago. These spending reductions, if approved by Congress, would further slow nuclear security progress.

Russia's absence from the Nuclear Security Summit is troubling for two reasons. First, last January, Russia went from simply choosing not to attend the meeting, to actively attacking it as illegitimate. This will make it harder to muster consensus on difficult issues. Second, Russia has the world's largest stocks of nuclear weapons and weapons-usable material. While physical security improvements are substantial, corruption, organized crime, and Islamic extremism are endemic.

For example, a recent report by the Carnegie Moscow Center found that radical organizations including the Islamic State have established a presence in Russia's Chelyabinsk Province, home to some of Russia's most sensitive nuclear establishments. While there is no public evidence that they have targeted nuclear facilities, the geographical proximity of active extremists to sites with fissile material is worrisome.

Despite real and substantial differences with Moscow over issues ranging from Ukraine, to the INF Treaty, to Syria, U.S.-Russian cooperation on nuclear security remains in U.S. interests. In particular, cooperating to defeat the Islamic State's unconventional weapons capabilities would clearly be in the best interests of both countries. While the old days of a donor/recipient relationship are over, cooperation among scientists to improve the technology and techniques for nuclear security could also advance both countries' interests. Moreover, the Global Initiative to Combat Nuclear Terrorism, which is co-chaired by the Washington and Moscow, can become a vehicle to both overcome the gap in U.S.-Russian nuclear security cooperation and pick up the slack created by the end of the Nuclear Security Summits.

With respect to progress on securing nuclear material in Pakistan, I have no knowledge of that issue since leaving government in 2009.

The first and best way to defeat nuclear smuggling is effective security at facilities with fissile material. Empirically, however, there have been more than twenty incidents in which fissile material has been seized outside of authorized control over the past two decades or so. While most of these examples occurred before security upgrades were widespread, incidents in 2003, 2006, 2010, and 2011 demonstrate an ongoing issue. Although none of them involved sufficient material to fabricate a weapon, material seizures are important for three reasons. First, they are absolute evidence of a security failure. Second, until there is certain knowledge of where the material came from, how it was stolen, who was involved, and where it was headed, we cannot be certain that the security hole has been plugged. Third, in many of the instances, the recovered material was advertised as a sample of a larger quantity that remains at large. Unfortunately, there is no publicly available evidence that these incidents have been successfully investigated and resolved.

Measures to detect illicit shipments of nuclear material, the Second Line of Defense and Megaports programs have suffered funding cuts and controversy in recent years. To be sure, detection systems are not perfect and must be supplemented by effective law enforcement and intelligence work. Moreover, the Eurasian Customs Union of former Soviet states has disrupted the originally envisioned architecture, which started with a ring around Russia. These problems, together with what may be a deteriorating security situation in Russia, require special mitigating steps, including heightened intelligence and law enforcement efforts, more thorough customs and border control work, and establishment of new inspection rings.

In working to defeat nuclear smuggling, it will also be important to address the North Korean threat. Pyongyang has a demonstrated willingness to sell the means to produce fissile material, missiles, and other destabilizing weapons. The growth in the DPRK's stocks of fissile material raises the possibility that some of it could go up for sale. Pyongyang should realize—and the Obama administration should make clear—that any transfer of fissile material that resulted in detonation of a nuclear weapon, would implicate North Korea in the full consequences of the action. Similarly, any transfer to a non-state actor, would result in a severe response from the United States. Nonetheless, this danger will require additional vigilance.

Mr. Chairman, in sum, while much has been done over the past twenty-five years to prevent nuclear terrorism and proliferation, much remains to be done. Key gaps remain unfilled. Progress has slowed. Budgets are declining. President Obama urged his colleagues at the 2014 Nuclear Security Summit to sprint to the finish. That is exactly the urgency that is needed later this month and in the years beyond.

The CHAIRMAN. Thank you very much.

Secretary Tauscher?

STATEMENT OF HON. ELLEN O'KANE TAUSCHER, FORMER UNDERSECRETARY OF STATE FOR ARMS CONTROL AND INTERNATIONAL SECURITY, WASHINGTON, DC

Ms. TAUSCHER. Senator Corker and Senator Cardin, thank you so much for including me today. It has been almost four years since I left the government. I just want to report on St. Patrick's Day that I am not only 100 percent Irish American, but I am so happy in the private sector. It is an honor to be back here with colleagues to talk about an issue that has taken up a very long part of my private and personal life both in the government and now that I am out in the private sector.

I represented the only congressional district with two national labs in it. In the Congress, I sat on the Armed Services Committee for seven terms, and while the Democrats were in the majority I chaired the Strategic Forces Subcommittee, which is about $55 billion of responsibility, on nuclear weapons, space satellites, and missile defense.

When I became Undersecretary in the Obama administration, we had to go forward and get the new START Treaty ratified and negotiated, and I appreciated this committee's support. I also thank this committee for actually confirming me to my position.

I have submitted remarks for this hearing, but I want to depart from them because I found it very interesting in your summary, Mr. Chairman, because I think you and my 20-year friend, Mr. Cardin, are absolutely right. Your point is very well taken. The world is increasingly complicated and more dangerous. We have people more likely to use nuclear weapons today than we ever have had, I think, except perhaps at times during the Cold War.

And Senator Cardin is also right. We have done a lot to try to prevent them from having the material to do that, but every time we seem to make advances, people redouble their efforts.

So I just want to take a couple of moments. I sat on the board of the Nuclear Threat Institute, and I think that board and that group created by Sam Nunn and Ted Turner and others is a terrific outside group. They have a monitoring system, they have reports that they give, they have a website that is visited by tens of thousands of people. So from somebody that is now on the outside, I just want to take a few minutes and kind of give you a couple of recommendations, because while you are both right, what concerns me more than anything is that the debate is not one that the American people or, frankly, the world is really engaged in.

To a certain extent they understand that we still have nuclear weapons. Most people would assume that the United States had ratified the Comprehensive Test Ban Treaty. We have not. I would support the Senate looking at it. I think the people that voted against it in 1999 were probably right. At the time, we had a brand new regime called Stockpile Stewardship. It was not yet proven. It

now has been proven. And at the time, the era of cheating was very, very front in the minds of people, could we prevent cheating, could we detect cheating, and I think we have answered that question too.

So the Comprehensive Test Ban Treaty, I think, is important.

The one most important thing that I think we really need your leadership in—and I applaud and commend the bipartisanship of this committee and your leadership, both of you two senators—and that is that we need more predictable, more transparent funding for the complex itself. I spent a lot of time working on it. Just as far as disclosure, I did sit on the boards of Livermore and Los Alamos until recently, about three years.

But we need to be able to maintain unambiguously a quality deterrent. That is the thing that won the Cold War. That is what kept us safe until now. So the idea that we have an unambiguous quality deterrent that our allies and our adversaries take seriously is the most important thing. It means we need smart people at the labs to deal with the future problems, and we need to be able to be sure that we can, without testing, maintain a safe and reliable deterrent.

So I am anxious to talk about these issues with you. I very much applaud the hard work and the leadership that you have. I commend to you my testimony, and you can take a look at it. Thank you.

[Ms. Tauscher's prepared statement follows:]

PREPARED STATEMENT OF HON. ELLEN TAUSCHER, MEMBER OF THE NUCLEAR THREAT INITIATIVE BOARD OF DIRECTORS, FORMER UNDER SECRETARY FOR ARMS CONTROL AND INTERNATIONAL SECURITY, AND FORMER MEMBER OF CONGRESS (D, CA)

THE FUTURE OF NUCLEAR NONPROLIFERATION

Chairman Corker, Senator Cardin, thank you so much for holding such an important hearing and thank you for all of your work to keep arms control and nuclear nonproliferation at the forefront of our foreign policy and advance U.S. national security. I realize we might not always agree on the approach and, there obviously are disagreements, but I appreciate the debate and discussion.

The global implications and potentially catastrophic consequences of the use of nuclear weapons against the United States and its allies is why the Obama administration made nuclear nonproliferation one of the key U.S. policy objectives of its 2010 Nuclear Posture Review. The recognition of the dangers posed by a world of ever increasing nuclear proliferation is what motivated the President to announce his goal of moving toward a world free of nuclear weapons.

He tempered this idealistic goal—one shared by President Ronald Reagan—with the need to pursue it in a pragmatic and responsible way. He envisioned a way forward that saw the United States working with other countries to stop proliferation while also maintaining a safe, secure, and effective nuclear deterrent for the United States and its allies so long as nuclear weapons exist. This balanced approach to the nuclear issue is essential to the national security of the United States.

That's why I care so deeply about this issue and have made it my life's work. That's why, when I was part of the Obama administration, we worked to create more certainty in an uncertain world. We sought to reduce the size of our nuclear arsenal, while making it safer, more secure, and more effective.

In 2010, the Senate approved the New START Treaty for ratification. This Treaty marked another step in our long-term effort to shift the United States and Russia from a world of mutually assured destruction to one of mutually assured stability.

While the United States and Russia made some progress in its relationship early in the administration's first term, Russia's provocative behavior in the Crimea, Ukraine, and elsewhere, coupled with its violations of existing arms control treaties, has made discussion of further reductions difficult.

It's unfortunate that Russia will not be attending the 2016 Nuclear Security Summit. Let me be frank: Russia's past participation was anemic. They didn't bring "house gifts," joint "gift baskets," and their negotiating posture has been to weaken the consensus texts. But Russia's absence does not necessarily signal anything about its commitment to securing its own nuclear material. Despite Russia's lack of action at the Summits, Russia has been a positive and active force in the Global Initiative, as if to prove that they will cooperate here and there.

I'm happy to offer more analysis of our relationship with Russia during the question-and-answer session.

The administration also restarted a discussion about ratification of the Comprehensive Test Ban Treaty, which, I can say this since I am not in public office, that if you opposed the treaty in 1999, there might have been good reason. Today, you would be right to support it. I hope the Senate Foreign Relations Committee can continue to look into how the success of stockpile stewardship and the global advancements in verification and monitoring have changed the game on CTBT.

In addition, we pushed for and achieved new forms of civil nuclear cooperation.

While the nuclear nonproliferation deal with Iran occurred after I left government, I believe it's the right agreement because it allows us to stop Iran's quest for nuclear weapons. We'll have to see how this plays out. Iran has commitments to meet and some of its recent behavior—the missile tests—is disturbing. But Iran is constrained because of the deal and we have means of making sure those constraints remain in place.

A centerpiece of President Obama's program to reduce the threat of nuclear weapons included hosting the first nuclear security summit in 2010 in Washington. This signaled a full-scale commitment to securing "loose nukes" and nuclear material. I'll get to a few challenges facing the Nuclear Security Summit process, but in the short term bringing high level attention to this issue was and still is critical.

The summits themselves were more than a chance to talk and meet. The heads of government came to Washington, Korea, and the Netherlands with singular and joint commitments and action-plans in-hand to secure highly enriched uranium and plutonium.

What's happened during the past six years and three Nuclear Security Summits?

- Countries have made vital upgrades to their regulatory frameworks, strengthened border controls, and ratified nuclear security agreements like the 2005 Amendment to the Convention on the Physical Protection of Nuclear Material and the International Convention for the Suppression of Acts of Nuclear Terrorism.
- Eleven countries completely eliminated their weapons-usable nuclear materials and many more have reduced the quantity of those materials.
- The number of countries holding nuclear material that could be seized by terrorists and used to build a bomb has been cut in half since 1991, from 52 to 24.

I am pleased that the administration is focused on strengthening the role of the IAEA, the Global Initiative to Combat Nuclear Terrorism (GICNT), the Global Partnership, and INTERPOL to carry forward the Summit's strong focus on nuclear security. U.S. leadership is indispensable if the international community is to remain focused on the unfinished work of the Summit.

Unfortunately, this work is never done. Old threats disappear. New ones emerge. Technological progress that boosts economic growth and productivity potentially gives potential terrorists and smugglers new tools to steal fissile material.

As you know, I sit on the board of the Nuclear Threat Initiative, which was created 15 years ago by former Senator Sam Nunn and CNN founder Ted Turner to make sure that the world addressed the threat of nuclear weapons in smart and thoughtful ways.

Each year, NTI produces the Nuclear Security Index. The NTI Index has prompted countries to take a close look at their own security and has led to concrete improvements. On top of that, NTI's Global Dialogue on Nuclear Security Priorities has brought government officials, experts, and nuclear industry representatives together in a unique environment to develop creative yet tangible proposals that have been taken up in the Summit process.

This year's index has raised serious concerns—even as we approach the final Nuclear Security Summit—about how poorly some countries are doing to stop nuclear terrorism.

First, I recognize that it was always going to be difficult to replicate the success of the first Nuclear Security Summit. And progress has slowed since the 2014 sum-

mit. Between 2012 and 2014, seven countries eliminated weapons-grade materials. Since 2014, only one country—Uzbekistan—has done so.

In 2014, the Nuclear Security Index showed 19 improvements across five key security measures. This year's index showed none. What's dispiriting is that global stocks of weapons-usable nuclear materials are potentially on track to increase.

Second, too many countries are ill-prepared to protect nuclear facilities against cyber-attacks that could knockout critical systems that provide access control or cooling for spent fuel. The Nuclear Security Index found that 20 countries have NO requirements to protect nuclear facilities from cyber attacks.

Finally, the index found that countries with nuclear power plants and research reactors did not take enough security measures to prevent an inside-job. This was especially true in countries with ambitions to acquire more nuclear power.

Finding solutions to these problems will take enormous energy and creativity from future presidents.

A recent NTI white paper also noted some shortcomings of the Nuclear Security Summits. Commitments are voluntary and nonbinding. There's no accountability or external review to make sure countries are living up to their commitments. The communique resulting from the summits can often lead to a lowest common denominator outcome. But I want to be clear that having the summits is a much better outcome than not having them.

What's most disturbing is that most global stocks of weapons-usable nuclear materials are categorized as "military," making it outside the scope of the international security mechanisms that already are in place.

On top of that, countries must do more to protect their weapons-usable nuclear materials from theft and their nuclear facilities from acts of sabotage. They need to do a better job to protect hospitals and universities which have radiological sources with often little or no security. The Partnership for Nuclear Security, which my bureau managed when I was the undersecretary of State, does critical work to develop a culture of nuclear security and reduce the risk of insider threats at these facilities. Cyber-attacks present an altogether new threat. Any sort of breach of security would be disastrous.

In the meantime, Congress can do its part to make sure the United States leads by example. I realize that the budget battles of the past few years have put enormous pressure on all programs

But we have to do more than just keep the lights on. As it stands, the U.S. budget for nonproliferation efforts is inadequate. Last year, an Energy Department task force on NNSA nonproliferation programs noted that appropriations had declined by 25 percent between 2013 and 2016 even though the challenges we are facing requires that more money be spent.

I want to note a few shortcomings, which I think ought to be corrected. In the current budget submission:

- NNSA is planning to secure 4,394 buildings with high-priority radioactive nuclear material by 2033 rather than achieve a previous goal of securing 8,500 sites by 2044.
- Funding for all Nonproliferation and Arms Control activities also would see a small decrease of $5 million.
- Spending for Defense Nuclear Nonproliferation Research and Development activities, which focus on developing technologies used in tracking foreign nuclear weapons programs, illicit diversion of nuclear materials, and nuclear detonations, would decrease about $25 million in the fiscal year 2016 appropriation.

In the end, political and ideological battles should not be dictating funding for these programs.

I also want to appeal to this committee to continue its strong bipartisan support for the State Department's nonproliferation programs. State's work is critical in countering nuclear, biological, and chemical weapons threats.

On another note, I believe people are policy. Not having the right people in the right jobs isn't good for business or running a government. I appreciate that the committee, in January, voted in favor of Laura Holgate's nomination to become our ambassador to the U.N. Missions in Vienna. I hope she can get a vote on the Senate floor soon. We need strong voices and competent people pressing for effective implementation of the Iran deal.

I appreciate the committee's invitation to testify and I'm honored to be a part of this panel. My hope is that the 2016 summit does not mark the end of an era, but ushers in a new phase of strengthened and lasting international cooperation. And, I hope that future administrations and Congresses continue to focus high level attention on this issue.

Thank you and I'm happy to answer any questions as best as I can.

The CHAIRMAN. All right. Thank you.

I appreciate your desire to move off of your written testimony and address what just happened, and just for what it is worth, I could not agree more with your statement regarding the funding of modernization and development. I voted for New START. I worked with you in that regard, and Ben and others. It was the right vote to make. But the thesis around that was that we had this huge inventory of nuclear warheads that we did not even know were workable, continued to be useful. We did not know, and the thesis was to narrow down the number of warheads we had and ensure that they had guided systems that were at least equivalent, at the time, to my Blackberry. Now we are moving on to i-phones, but we had systems, guided systems that really were much like what we had in black-and-white televisions at one point.

So for us to invest heavily and to have the capabilities, by the way, down the road should we ever need them to develop additional materials was very important, and I am concerned that we are not doing those things that we need to do to ensure that we have the best and brightest in the world at these facilities that you just referred to, and attracting people, and stressing the importance of this program. So I appreciate you highlighting that. We discussed that. We just had a hearing the other day, the Armed Services Committee, where we were invited to attend, and again I made that point there that for this to work for us, we have to be doing the same thing the Russians are doing; and, let's face it, they are taking it seriously, much more seriously than us at the moment. So I could not appreciate your comments more, and I thank you for that.

At the last meeting I acknowledged that we had some incremental gains. I acknowledged that in my opening comment. I do get distressed when we have people who are lifelong public servants who are distinguished and know tremendous amounts around this subject matter. But when I continue to hear the glass is half full—and I am not even assessing blame—when we have taken huge negative steps, if you will, relative to nuclear proliferation, I do not even know how you can debate it. And yet it just seems like we are putting a rosy outlook on where we are, and I think we ought to—as a matter of fact, Secretary, I think if we would raise greater alarms about where we are, we might have the kind of funding for these programs.

But we just continue to ease along in a way that acts as if, oh no, we are solving all these problems, the world is wonderful, when the world has not decided to be wonderful. I will say I think some of our steps—I am now getting way off topic, just like you did. But when you take out a leader like Gaddafi, who had cooperated with us on weapons of mass destruction, I think it sends a signal to the world that if you have weapons of mass destruction, you should keep them and develop them because otherwise you get taken out.

So I think our policies have not been thoughtful relative to how we deal with these nuclear and other weapons of mass destruction.

I have been very disappointed—we are more having a conversation than a Q&A. But the 123 agreements that we have been entering into may have been sending the wrong signals, and I wonder

if you might disagree with me or agree with me. But it just seems we have been reluctant to use that negotiation as a point to try to diminish the ability for plutonium reprocessing to be a part of proliferation, as we are now discussing, and I would love any comments you might have.

Ms. TAUSCHER. Well, I think they call this violent agreement, Mr. Chairman, but I think we are in violent agreement on many things. When I was Undersecretary, both the current Undersecretary and Tom, the Assistant Secretary, worked with me. They are terrific people, and they are people that are, unlike me, coming from the Congress, are professionals.

I will tell you—and you have seen this in your life in the private sector and while you have been senator—while you are in it and you are tactically moving things forward, it is difficult to lift your head up and kind of play the strategic role that you have to do, and they are here to defend what the administration is doing in a very, very complicated time.

On the 123 agreements, I will say that the problem with the 123 agreements in my perception are two things. I voted for the UAE agreement when I was in the House. It was called, if you recall—I think, Senator Cardin, you were in the House with me—it was called the gold standard. The problem with having a gold standard is it needs to have two things. It needs to be replicable, and it actually needs to be the best.

The truth was it is not replicable, in my mind. The UAE changed that law on their own. They did not decide because of our influence. They wanted to have the agreement with us. They knew that was what we were going to require. They changed the law on their own. The 123 agreements are for us to be able to sell the United States technology into countries. Keep in mind that we have allies like France, and then we have the Russians who are perfectly willing to sell this technology to anybody, and no 123 agreement required.

So we have become, I would say, dangerously uncompetitive on the nuclear sphere when we cannot compete with countries like the French and the Russians, who do not require 123 agreements, and where we have, I think for the right reasons, very strict controlling laws that create the atmosphere for us to be able to do that.

So I am not surprised with the Republic of Korea, for example, with North Korea sitting on its northern border, that their insistence is going to be on reprocessing. They are going to want to know that they got what they got.

One of the reasons we pushed very hard to have nuclear fuel banks was to give people an alternative to their own reprocessing, to kind of internationalize, under the IAEA, a rubric of reprocessing and banking so that every little country was not doing their own and we could not find out what was going on.

So once again, I think you are absolutely right, these are enormously complicated circumstances. These 123 agreements are tough to do. We do not have the advantage of having our government sell them that help countries do things that we are not necessarily for, and I think that it is a tough environment for us.

The CHAIRMAN. Mr. Tobey?

Mr. TOBEY. Thank you, Mr. Chairman. This is an issue I have a great deal of interest in, and I agree completely with your concern, Secretary Tauscher's concern about the importance of trying to stop the spread of reprocessing.

My own view is that 123 agreements can be a useful tool, but they are something of a hammer. They are sort of a blunt-force object. That does not mean they should not be used. Hammers are useful, but they are not the only tool.

I think the most effective thing the U.S. Government could do today to address this issue would be first to go to Beijing and brief them comprehensively on the Mox program, which I used to run at the Department of Energy, and the cost overruns. That fuel fabrication facility is being built with Areva technology based on Areva processes. My guess is that the Chinese, who are undertaking this reprocessing for civil reasons, separate from their weapons program, would be so appalled by the prospect of what they are facing, especially also given the data on Rokkasho, which now is over $25 billion and counting, a 25-year project. They have had 23 delays in that project.

Reprocessing is economically indefensible. So to the extent that the Chinese are pursuing this as part of their civil program for fuel management or spent fuel management, they should not want any part of this, and we should just give them the facts to give them those reasons.

Now, their concern, the Chinese are concerned about the Japanese stocks of separated plutonium. The Japanese have recently expressed concern about the Chinese getting into massive reprocessing; and, of course, we have heard from the Koreans. They would all be better off if there was—I do not know if there could be a joint decision, but if there were three separate but coordinated decisions to forego this technology, their security and prosperity would be advanced.

The CHAIRMAN. I am going to let Senator Cardin—I know he has an incredible day in front of him—go ahead and ask his questions and make any comments. Again, thank you both.

Senator CARDIN. Well, thank you, Mr. Chairman. I really do enjoy the conversation that is taking place. It just leads to the comment I am going to make and try to get your input as to what is the best structure for us to try to promote in order to deal with these nuclear issues.

We do have tools. I mean, we do have the United Nations and the IAEA and the protocols and the potential for Security Council sanctions against those who violate those protocols. We do have treaties that have moved us in this direction. We had the 123 agreements that we had already been talking about. We have our bilateral relations, and we have now the National Security Summit.

So we have these vehicles, but let's get out of the weeds a little bit and talk about what would be the most effective type of protocol for the United States to try to promote globally to get a better global consistency.

You talked about reprocessing and knowledge on reprocessing. That is an excellent point. We talk about civil nuclear, that there is no need for the refinement, that there are ways you can get your

nuclear materials. There are different ways that this can be handled so that a gold standard really is a gold standard.

And I agree with you, Secretary Tauscher, the gold standards have not been—they are mischaracterized. So we really could, I think, develop international gold standards and not get into just the lowest common denominator that if we do not do this, then it will go to a French company or a Russian company, so that we can really develop, I would think, sensible global standards on the use of nuclear materials for both civil and military use.

So how do we get there?

Mr. TOBEY. Well, this has obviously been an issue that we have been struggling with for a very long time. The U.S. has decided against reprocessing back to I guess the Carter administration, and it has been largely reaffirmed since then.

I think it actually is hard to address that in a comprehensive way. I think it is something you have to do in either an ad hoc fashion nation by nation, or perhaps with groups of nations in the Northeast Asian example. Each of these countries is pursuing this technology for their own reasons, and those reasons always vary a little bit. So it is hard to come up with a comprehensive plan.

Senator CARDIN. And that is what we have been doing. The challenge is you run into countries—and I will mention again Pakistan that has an internal need. They have, as they perceive it, a security need, and then they have a regional aspect where they can try to become more influential in the region by the use of their nuclear proliferation issues.

We limit our attentions in Pakistan to a bilateral basis. I am not sure we will ever get to the results we need. Maybe we will, I do not know, but it is a very complicated relationship, and it is multifaceted in that it is not just about their nuclear ambitions.

Mr. TOBEY. Senator, I think you are exactly right. It is hard to deal with them individually, but it does illustrate—obviously, India and China are relevant to that calculus as well. But it also does illustrate the point I was trying to make that, at least in my view, Pakistan's motivations are almost entirely security related. They are not talking about their spent fuel management. They are building nuclear weapons for their defense. Whereas in the China, Japan, the South Korea case, it has a security dimension to it, but at least what they state is that it is driven by civil nuclear programs and spent fuel management. So that is why I would argue you have to approach the problems differently, but I would agree that you probably need to deal with groups of nations, small groups.

Ms. TAUSCHER. I think Will is absolutely right, Senator, and I think you have alluded to this. This is about a regional approach. This is about Asia. This is about the five or six countries that we have talked about—India, Pakistan, China, Japan, and the Koreas—and there is this thread of security. That is why it is important to have all of them participate in the Nuclear Security Summit, and they have been very active. There is also this issue of their civil nuclear programs and, obviously, their weapons programs.

But I think that it is going to take United States leadership to basically try to understand how to deal with the cross currents of

this tumultuous area. In both cases we have countries, India and Pakistan and the two Koreas, that are at odds with each other constantly. The fact that they have nuclear weapons—the Republic of Korea does not, the North Koreans do—only heightens the incidence of concern.

So I think it is really about putting together—it would be wonderful to have this committee put together an effort to talk about creating some kind of summit in that region and put together some simple principles where you started to work to get people to understand the dangers of reprocessing, why reprocessing, in a world where there is fuel banking, is not perhaps necessary in the next few years, making sure that those efforts on fuel banking solve their civil nuclear issues, deal with the security pieces over here in a security kind of way, not necessarily in the Nuclear Security Summit, which is really anti-terrorism, but specific to the kinds of efforts that many of these countries have of antagonism and try to find a way to take down the tensions. I think that would be an enormous effort for national security.

Senator CARDIN. I want to get to the issue of enrichment for one moment. I can envision that we are going to be approached by a Gulf state saying, look, we think we need a civil nuclear program, and because of our region it is important that we have the ability to enrich internally. What can the U.S. position be on a country that wants to enrich when it seems to many of us that the fewer places you have enrichment, the safer this world is going to be?

Mr. TOBEY. My own view is that we should try to discourage the spread of enrichment reprocessing programs wherever they occur. Northeast Asia is a great example of it. If China moves ahead, there are going to be pressures on South Korea to have reprocessing. They have argued openly, well, you allowed Japan to do it, so why can't we? If South Korea gets reprocessing, then it is inconceivable that we could have an agreement, as unlikely as it may be, that North Korea would ever give up their reprocessing. So that puzzle just never gets solved unless you begin to move in the other direction.

Senator CARDIN. We attempted at one time—the Chairman was active on this—to look at 123 agreements and say, look, we understand there is world technology. We are the best. And if you really are committed to the most efficient civil nuclear program and want the most advantageous relationship with the United States, then our standard is that you do not need to have an enrichment program, and whatever we agree to, we would like it to be enforceable, by the way.

Could that work, or is it too far down the road?

Ms. TAUSCHER. So as I left as Undersecretary, I actually wrote a memo about this because I spent 15 years on Wall Street as a small child, so I am kind of somebody that looks at negotiations as how do you make two sides whole, how do you have a deal that sustains itself, and how do you move forward?

What concerns me is that our 123 agreements are used to do two things. One is to have this hammer and say do not enrich, and the other is to say Buy America. The problem is we should have two separate agreements. One is this nonproliferation agreement that is really a diplomatic agreement where we are putting together our

best advice on how to eliminate the proliferation risks, especially regionally, and to try to get as many countries to sign up to this as possible. I think that is a huge diplomatic effort that we could do.

The second is more of a DOE commercial agreement, whether we are going to sell technology or not. So I think that one of the reasons why 123 agreements have had a checkered past and very little success recently is because we are trying to get these enrichment decisions made on a commercial agreement. I would separate them, and I do not know if we are going to have success on the commercial agreements anymore, but I would surely spend a lot of time on these anti-enrichment pieces. If we put that effort together and the State Department would run it, I think they would do a terrific job.

Senator CARDIN. That is an excellent point, because the way that these agreements are being lobbied on Capitol Hill very much underscores the point that you are raising.

The CHAIRMAN. I would just follow up. I think that is a great point. I would say in the audience today taking notes, we have people from the nuclear industry. That would be my guess. And the fact is I could not be more supportive of our nuclear industry. I want them to do well and I want our country to be leading in technology, and yet we find ourselves sort of at loggerheads and countering our nuclear industry folks over these agreements, which really it is not about them. We want them to be doing the business, but it is about the fact that we do not want to see proliferation taking place. I think that is an excellent point. I do not know if that is doable, but to really try to separate those so we end up being aligned with our commercial interests here in nuclear technology and wanting us to be the best and the most dynamic in the world, and at the same time trying to negotiate on a different track. That is interesting and certainly something we are going to take away from this.

You know, I will say, you talked about Asia and the fact that we are allowing enrichment to take place. Again, not to beat a dead horse but we have done the same with Iran where, in essence, we are allowing them to enrich, which was one of the greatest problems I had with the DOE, and allowing them to develop technology to enrich even faster during the lifetime of this agreement. So we are going to have those pressures. Other countries are going to be coming in, no question. I mean, there is no commercial need whatsoever for Iran to be doing this. It makes absolutely no sense, and everyone understands that. I mean, 3rd grade students could understand that. So it is self-evident that this is being done for a particular purpose.

So let me step back away from enrichment. As you look at the world today and you go out and you try to keep nuclear arsenals from proliferating, as they are at a rapid pace today, what is it you can really say to a country that has the know-how and understands the threats that exist in the world and understand what a deterrence it is to have a nuclear weapon? What is it you really can use, especially with what has happened over the last several years, to convince a country that feels threatened that it is not in their best interest to develop a nuclear weapon today? Seriously. I mean, give me your argument as a diplomat in this area.

Ms. TAUSCHER. I think one of the best arguments we have, Senator, is we have extended our deterrent to NATO allies and others——

The CHAIRMAN. And I should have said except for our NATO allies. Obviously, there is an argument there. But I am talking about people outside our umbrella, okay?

Ms. TAUSCHER. Right, and what I am suggesting is probably heretical, and probably my phone is going to buzz off the hook this afternoon, but to the extent—look, we pretty much have identified who we think tripwires to getting their own nuclear arsenal, if they can, if conditions in their region or if something happens where they consider themselves to be in ultimate danger and they feel like they need a nuclear deterrent to kind of keep people back.

I would suggest that we consider, because we have a huge arsenal, that we would find ways to deal regionally with deterrence, and we would say that we could expand the countries that we actually offer the nuclear umbrella to, to prevent other countries from coming in with their own arsenals. I do not think we can do that for the world. I do not think we can do that far afield from us. But there certainly are places, including in the Middle East, where it may make some sense because of the volatility of that area, where we said do not do it on your own; for these kinds of conditions, we will back you up.

I think that the nuclear arsenal that we have is safe, reliable, and one that people can find confidence in. I do not believe that any other country should become a nuclear weapons state. I think we are, unfortunately, in such a turbulent time that that worries me more than anything else, that people feel this is the thing.

As you said, there are plenty of bad guys, including the dictator in North Korea, that have watched what has happened over 20 years and have said, well, I do not feel like feeding my people, I do not feel like being a good leader; I want to preserve my regime. So if I have nuclear weapons, no matter how bad I am, I am safer than anybody else. That is the wrong indication that we should be letting people believe.

So I think that it is going to take a lot of smart minds, including yours, to sit down and understand this. That is one of the reasons why I hope that the new administration will do a nuclear posture review, because I think these kinds of strategic questions need to be answered, not only about the use and the construct of the complex and investment strategy, but also how are we going to use the existing arsenal to prevent other countries, especially allies, from getting into the nuclear weapons business.

The CHAIRMAN. I think that is a good point, and I will go back to the point you made in your opening statement. I think for us to be able to stress a deterrent for others, they have got to see us actually taken seriously, us keeping up and investing in our deterrent in an appropriate way. They are not seeing that either. They see us here really not dealing with our fiscal issues in general. They understand over time the pressures that that places on these kinds of things, but I think that is a very good point.

Mr. Tobey?

Mr. TOBEY. Mr. Chairman, I agree completely with the importance of extended deterrence, and therefore one of the many reasons why it is important to modernize our capabilities.

I would also add a point about the nonproliferation treaty. It is really a bundle of bargains, and there is one bargain that people always talk about, but there were two others, one that is probably less relevant now. The first bargain was between the United States and the Soviet Union not to extend the competition of the Cold War to other states. The second one is the one that always gets talked about, which was between nuclear weapons states and non-nuclear weapons states, so that the nuclear weapons states agreed to engage in disarmament and to spread technology. But the third bargain really was among non-nuclear weapons states, because they were the ones who benefit the most.

The states that are most threatened by an Iranian nuclear weapons program are not really the United States; they are the neighbors of Iran. So for states to understand and act in a way that they understand that a nuclear weapons competition will leave them poorer and less secure is the ultimate persuasive goal. Now, that does not work in every case. Obviously, in Southwest Asia and Northeast Asia, it is not working. But it has worked in lots of other places, Africa and South America.

So the goal is, I think, to try and spread that message.

The CHAIRMAN. Yes, and I think the competing issue with the Iran situation was they were not immediately concerned about the nuclear capabilities, but they were immediately concerned about the $100 to $150 billion that was going to come into their hands and cause them to wreak more havoc on a conventional basis today.

But, look, this testimony has been outstanding. I thank you both for being here. If it is agreeable to you, we are going to leave the record open until the close of business Friday, and if you all could respond, I am sure there will be numbers of questions from members.

We appreciate both of you for taking the time and preparing for this, and certainly your contribution has been large in this second panel. So thank you, and we look forward to seeing you again.

Ms. TAUSCHER. It is an honor to appear. Thank you, Senator.

The CHAIRMAN. Thank you. Thank you so much.

Mr. TOBEY. Thank you.

The CHAIRMAN. And with that, the Foreign Relations Committee is adjourned. Thank you.

[Whereupon, at 12:19 p.m., the hearing was adjourned.]

Additional Material Submitted for the Record

RESPONSES TO ADDITIONAL QUESTIONS SUBMITTED TO UNDER SECRETARY OF STATE HON. ROSE GOTTEMOELLER BY SENATOR MARCO RUBIO

Question 1. How is Russia a committed partner on arms control and nuclear nonproliferation given its support of Iran's ballistic missile activities and violations of the INF Treaty?

Answer. We work with Russia on security issues that affect our core national security priorities, including arms control and nuclear nonproliferation priorities such

as the New START Treaty, implementation of the JCPOA with Iran, and the removal of chemical weapons from Syria.

We routinely engage with Russia regarding possible efforts by Russian entities to supply sensitive equipment or technology that could be used to support ballistic missile programs of concern, including those in Iran, and work bilaterally to resolve activities of proliferation concern. In cases where our concerns are not addressed, we continue to use our unilateral sanctions authorities against Russian entities supporting Iran's missile development efforts, consistent with U.S. law.

Still, we are very concerned about the Russian Federation's disregard for some of its arms control and nonproliferation obligations and commitments, including the INF Treaty. Russia's INF violation has eroded the decades-long positive contribution of this Treaty to European security. Our goal is for Russia to return to full, verifiable compliance with the Treaty. At the same time, the United States will ensure that Russia gains no significant military advantage if it persists in its current path.

Question 2. Is Russia still committed to ensuring the security of its nuclear materials?

Answer. While Russia has stated publicly that it will not attend the 2016 Nuclear Security Summit, our nuclear security relationship with Russia remains an important one. Russia attended the prior three Summits, and agreed to abide by the commitments to nuclear security contained in past Communiques and the 2010 Summit Work Plan. There is no indication that Russia is going back on any commitments made in the course of its participation in the Summit process.

Question 3. Given that Russia ended both the Nunn-Lugar program and refuses to participate in this summit, why are we so sure that Russia remains committed to nuclear security?

Answer. The United States and Russia both face the threat of nuclear terrorism, and both see it as a matter of national interest to prevent this threat from becoming a reality. Under the Nunn-Lugar program, the United States and Russia successfully implemented security upgrades at Russia's nuclear weapons storage sites, deactivated more than 7,500 nuclear warheads, and improved security for fissile materials. As these activities were transitioned to Russian implementing agencies, Russia has publicly stated its commitment to fund these and other nuclear security efforts.

We remain disappointed that Russia has chosen to reduce our bilateral cooperation on some areas of nuclear security in recent years. As the countries with the largest stockpiles of weapon-usable nuclear materials, the United States and Russia have a special obligation to ensure we meet the highest standards of nuclear security. Russia has pledged to fully fund all necessary security measures to protect its nuclear materials, and the United States will continue to monitor developments. We will continue to pursue meaningful ways to encourage Russia to meet its nuclear security commitments, particularly in fora where they remain engaged, such as the Global Initiative to Combat Nuclear Terrorism (GICNT). We also continue to cooperate with Russia on the removal of highly enriched uranium (HEU) from countries around the world. For example, Russia recently aided in the removal of all HEU from Uzbekistan.

Question 4. What is the status of your discussions with the Russians about an arms control agreement including nuclear reductions as President Obama outlined in his June 2013 speech in Berlin?

Answer. There are no negotiations ongoing with the Russian Federation regarding further nuclear reductions below the New START Treaty limits. Further reductions of deployed strategic nuclear weapons through an arms control agreement with Russia, as President Obama outlined in his June 2013 speech in Berlin, require a willing partner and a conducive strategic environment. We have not seen evidence of either at this time.

Question 5. Do you and the administration continue to stand by the written pledge you made to me on December 16, 2014 that any further reductions to the U.S. nuclear stockpile should only occur as part of an arms control agreement subject to the advice and consent of the Senate?

Answer. I affirm the contents of the letter remain accurate.

Question 6. Given your new planned appointment as deputy secretary general of NATO, what is your view on providing lethal military assistance to Ukraine to defend its territory against Russia?

Answer. Ukraine has the right to defend itself, which is why the United States has provided significant non-lethal security assistance to Ukraine to help its forces defend their country's sovereignty. I have been pleased to share with Ukrainian counterparts the details of our new $335 million security assistance package to support Ukraine. However, the United States continues to believe that there is no military resolution to the conflict caused by Russian aggression and remains committed to supporting full implementation of the Minsk agreements.

NATO has condemned Russia's illegal and illegitimate attempted annexation of Crimea and Russia's ongoing efforts to destabilize portions of eastern Ukraine. At the 2014 Wales Summit, Allies "launched additional efforts to support the reform and transformation of the security and defense sectors and promote greater interoperability between Ukraine's and NATO forces," and to enhance Ukraine's ability to provide for its own security. NATO also endorsed sanctions placed by the EU, G7 and others on Russia for its activities in Ukraine. Since Wales, NATO has established six Ukraine Trust Funds: Logistics and Standardization; Command, Control, Communications and Computers (C4); Cyber Defense; Military Career Management; Medical Rehabilitation; and Explosive Ordnance Disposal/Counter-IED.

I am a strong supporter of these efforts and believe that together, through our bilateral efforts and the efforts of NATO, we are helping Ukraine to both defend itself and transform its military. Let me also note, that while I have been nominated for the position of Deputy Secretary of General of NATO, the Secretary General has not taken his final decision in regards to the position.

Question 7. Do you agree with General Breedlove's assessment that Russia poses a "long-term existential threat" to the U.S. and its allies?

Answer. Russia's significant strategic nuclear capabilities have long posed an existential threat to the United States and its allies and those capabilities will continue to pose that threat for the foreseeable future. That threat is, of course, mutual, and the Russian Federation knows that. We will continue to defend the United States and our allies against any and all threats.

Question 8. Would you agree that Russia is no longer a partner in dealing with global security challenges, but is actively seeking to undermine the United States and our allies?

Answer. The picture is mixed, as is often the case when dealing with international security challenges. We do work with Russia on security issues that affect our core national security priorities, such as those taking place in Syria, North Korea, and Iran. We were able to cooperate on the removal and destruction of Syria's chemical weapons stockpiles and the continuing implementation of the JCPOA. We also continue our mutual implementation of the New START Treaty. The Treaty and its verification mechanisms continue to provide limits on, and access to, Russian strategic nuclear forces and contribute to predictability, transparency and stability.

Such engagements, however, do not alter our position on other issues where we condemn Russia's conduct, notably its involvement in Ukraine, where Russia continues its direct support of combined Russian-separatist forces in eastern Ukraine and its ongoing attempted annexation of Crimea. Our commitment to Ukraine's sovereignty and territorial integrity is steadfast.

We have repeatedly conveyed our concerns about Russia's destabilizing actions in the international security realm to Russian officials. Our relationship with Russia, therefore, cannot be "business as usual" as long as Russia does not fully implement its Minsk commitments, continues to occupy Crimea, and continues to undermine European security and international norms and principles.

Furthermore, we will continue to insist that Russia return to compliance with the Intermediate-Range Nuclear Forces (INF) Treaty and ameliorate all other compliance concerns. We also continue to remind Russia that compliance concerns undermine trust and predictability, and continuing these actions will not enhance Russia's security, as the United States will take the necessary steps to protect our security, as well as that of our allies. As we press the Russians on compliance issues, we inform and update our allies on our efforts.

Together with our allies, we are responding effectively to these challenges. Our solidarity with our European allies on sanctions has raised the costs to Russia for its aggression and forced Moscow to the negotiating table. Sanctions will remain in place until Russia fully implements its Minsk commitments. Crimea-related sanctions will remain in place until Russia returns this piece of Ukrainian land.

We also continue to engage with the Russian people, and to leave the door open for future cooperation if the Russian government seeks to return as a constructive member of the community of nations, in compliance with its international obligations and commitments.

Question 9. If you spoke accurately to the Denver Post, how could it be true—as you said to the committee on March 17, 2016—that the Intelligence Community did not know "any information" about such testing prior to at least December 22, 2010, when New START ratification occurred? Or was your statement to the committee incorrect?

You have been recommended by President Obama for the role of Deputy Secretary General of NATO, at a time when the Alliance faces tremendous challenges from the resurgence of grave Russian threats in Europe—including in connection with Russia's invasion of Ukraine, as well as its provocative nuclear force posture, continued occupation of Georgia, INF Treaty violations, and ongoing compliance problems under the Open Skies Treaty. This makes the issue of your handling of Russia issues, including the problem of Russian INF Treaty violations, particularly important.

In this connection, I note that the unclassified version of the State Department's 2010 report on Adherence to and Compliance with Arms Control, Nonproliferation, and Disarmament Agreements and Commitments—the production of which you oversaw, and which came out before New START ratification—states about the INF Treaty only that no compliance issues had been "raised" since the last meeting of the Special Verification Commission in October 2003. The 2011 version of the report says the same thing. This seemingly reassuring statement would be consistent, however, with the United States actually having concerns about Russian compliance with the INF Treaty but not raising them. Indeed, you told the Denver Post that you first "called them" (the Russians) on this issue only in May 2013.

Answer. During the March 17, 2016, hearing before this committee, I explained that prior to the ratification in December 2010 of the New START Treaty, "the Intelligence Community was not aware of any Russian activity inconsistent with the INF Treaty." I, and others in the administration, have made this fact clear in briefings and hearings. We have also been clear that, upon becoming aware of activity inconsistent with the INF Treaty, the administration notified Congress, including this committee.

Information regarding the INF non-compliant system's testing history, the intelligence reporting associated with this program, our compliance determinations, and information about our work with allies have been made available to Congress many times through appropriate channels. This administration believes that it is extremely important that this timeline is properly described and understood. Continued misunderstandings and misstatements about the timeline could serve to confuse the discussion of this issue with our allies and inadvertently obscure the nature of the Russian violation.

We are happy to once again provide clarifying information associated with the timeline in the appropriate setting.

Question 10. You noted during the testimony that the U.S. has begun discussions with Russia on the INF Treaty violation, what is the nature of those discussions?

Answer. This administration has been engaged in steady diplomacy over the last several years with the goal of bringing the Russian Federation back into full, verifiable compliance with the Treaty. This has been a very difficult discussion, as evidenced by the fact that Russia continues to deny the violation and has not yet made the political decision to return to compliance. We have made clear to Russia that should Moscow remain in violation of its obligations the United States will protect our security and the security of our Allies, and that Russian security will not be enhanced by continuing the violation. Throughout this time, we have made every effort to keep our Allies in Europe and Asia apprised of Russia's violation and our diplomatic efforts to resolve it.

For specifics with regard to U.S. engagement with Russia and our Allies and partners on Moscow's INF Treaty violation, I would refer you to the relevant portions of the Report on Noncompliance by the Russian Federation with its Obligations under the INF Treaty, required by Congress in response to Subsection 10(c) of the Ukraine Freedom Support Act of 2014 (P.L. 113–272), where this information is provided in detail. This report is provided in unclassified and classified versions every 90 days to Congress.

Question 11. What three violations did Russia accuse the U.S. of committing?

Answer. Russia has accused the United States of violating the INF Treaty in three areas:

- ballistic target missiles used to test missile defense systems;
- armed, unmanned aerial vehicles or UAVs; and,
- the Aegis Ashore missile defense system.

These accusations are baseless. The United States has always been and remains in full compliance with all of its INF Treaty obligations. On multiple occasions, we have explained to the Russian Federation how we are compliant in all three cases; however, it continues to make accusations in conflict with the facts.

Russia raised the first two of these allegations over 12 years ago in the INF Treaty's Special Verification Commission, or SVC. The United States fully and substantively addressed Russian concerns multiple times from 1999 to 2003. The Russian Federation stopped raising those two issues in the wake of our explanations of how our activities in those areas are Treaty compliant. Only after we announced our determination of Russia's violation of the INF Treaty in July 2014 did Russia raise those two issues again. In 2014, the Russian Federation for the first time alleged that the Aegis Ashore missile defense system was an INF Treaty violation. This allegation was made only after our declaration of Russia's violation, despite the fact that the United States had been openly pursuing deployment of Aegis Ashore for years.

Question 12. What have our NATO and other European allies said about Russia's violations?

Answer. We have consistently consulted with our Allies as we pursue a resolution to the Russian Federation's violation of the INF Treaty, including sharing available information with allies on the violating ground-launched cruise missile system in question. These consultations have been with counterparts in allied foreign affairs, defense, and intelligence organizations. Three broad themes have emerged in the responses from our Allies and partners. First, they strongly believe the INF Treaty contributes to security and stability in the region and should be preserved. Second, they would like to see a diplomatic resolution with Russia. Third, they would like to avoid an action-reaction cycle, which would only destabilize the security situation. Regarding the specifics on our diplomatic efforts with Allies and partners in Europe and Asia on this issue and their responses, we are happy to brief you in the appropriate setting.

For specifics with regard to U.S. engagement with Russia and our Allies and partners on Moscow's INF Treaty violation, I would refer you to the relevant portions of the Report on Noncompliance by the Russian Federation with its Obligations under the INF Treaty, required by Congress in response to Subsection 10(c) of the Ukraine Freedom Support Act of 2014 (P.L. 113–272), where this information is provided in detail. This report is provided in unclassified and classified versions every 90 days to Congress.

Question 13. Have they asked the U.S. to respond in order to maintain defense of Europe?

Answer. The administration's objective in this area is to ensure that the Russian Federation does not gain a significant military advantage from its INF Treaty violation. I am happy to discuss our engagement with our NATO Allies on this issue in the appropriate setting. For details on the military responses to Russia's INF Treaty violation and consultations concerning defending our European Allies, I would refer you to the Department of Defense.

Question 14. As you noted in your testimony to the committee, the Open Skies Treaty (OST) makes provision for the expansion of sensor suites flown aboard OST aircraft to include sensors beyond simply the wet film photography that has been done for many years. Specifically, Article IV(1) of the Treaty permits sensors to include optical panoramic and framing cameras, video cameras with real-time display, infra-red line-scanning devices; and sideways-looking synthetic aperture radar. It does not, however, require that all these sensors be flown, and indeed Article IV(3) of the Treaty specifically makes the question of which sensors are permissible within the outer limits defined by Article IV(4) a matter to be decided by the Open Skies Consultative Commission. This Commission, however, is a body which—under Article X(2) of the Treaty—operates "by consensus." This means that any party can veto any expansion of sensor capacities, making it in effect your choice as to whether or not Russia can fly such sensors over the United States. You told the committee that expanding the sensor package to accommodate Russia's recent request is "something we're going to want to do."

Is it correct to say that Open Skies flights are not the only way in which the United States can obtain overhead collection against Russian facilities we wish to learn about?

Answer. Yes, the United States can obtain overhead collection through a number of sources, including national technical means. Commercial satellites can collect unclassified imagery of Russian facilities, the best of which can be of comparable resolution to Open Skies imagery. However, this does not provide the same core value

as the Treaty, which enhances mutual understanding and confidence by giving all 34 States Parties—regardless of other collection capacities available to them—the ability to gather information through aerial imaging on military forces and activities of concern to them. Our Allies value the Treaty not only for the imagery it provides, which can be openly shared and discussed diplomatically to resolve or further discuss issues of concern, but also for its role as a confidence and security building measure, and its role in facilitating mutual predictability.

The Treaty is routinely used to monitor military activities, and contributes to monitoring of compliance with arms control and other commitments. Open Skies States Parties used the Treaty in a rapid response situation to monitor events in and around Ukraine in 2014. For example, the United States shared imagery gained from a German/U.S. mission on March 24, 2014, over Russia with OSCE participating States to substantiate claims of Russian military activities in southern Russia near Ukraine's border, despite Russian denials. Open Skies missions also demonstrated political and diplomatic support to Ukraine during this crisis, and have facilitated development of effective working-level relationships between U.S., Allied and Ukrainian personnel.

Question 15. And is it also correct to say that Open Skies flights add significantly more to Russia's ability to collect against us than they do to our ability to collect against Russia—and that this would be especially true if Open Skies collection is expanded to include more of the sensors set forth in Article IV(1) of the Treaty?

Answer. The information Russia obtains from Open Skies is of only incremental value when considered in the context of Russia's other means of intelligence gathering. The 30 centimeter resolution limit on Open Skies wet film and electro-optical imagery is similar to that available in commercial satellite imagery, which is available at up to 25 centimeter resolution. The Open Skies Treaty also provides procedures for use during overflights to improve confidence regarding what is being collected: a U.S. team conducts an inspection of the aircraft and sensor before each mission, flies on each mission over the United States to monitor the sensor performance, and receives a copy of the imagery after each Russian mission over the United States. The U.S. team also approves each flight route in advance, and provides warning to sensitive locations within the flight path. The Treaty does not prevent or preclude an observed State Party from undertaking mitigation measures such as shrouding facilities, halting sensitive activities, or taking other precautions on the ground. This will continue to be the case if additional sensor types are certified as provided for in Article IV(1) of the Treaty.

It is also important to note that Russia is the only State Party that conducts Open Skies missions over the United States, conducting 4-9 missions annually in recent years. By contrast, States Parties plan as many as 42 Treaty missions over Russia in total each year. The United States schedules up to 16 of these missions, and according to Treaty provisions, we have the right to purchase imagery from all other Treaty missions flown over Russia.

Question 16. As you told the committee on March 17, Russia continues a longstanding pattern of denying U.S. Open Skies overflight requests in ways not permitted by the Treaty. It is also, by your own account, continuing to violate the INF Treaty. It also remains in violation of its 1994 commitments to guarantee the territorial integrity of Ukraine.

- Under these circumstances, what benefit do you see in making concessions to Russian demands in the Open Skies Consultative Commission when you have the easy and perfectly legal option of refusing them?

Answer. Russia's restrictions on Open Skies flights are concerning. However, throughout the history of the Treaty, the United States has flown the vast majority of its missions over Russia in accordance with Treaty requirements. We continue to confront Russia in the OSCC for behavior that we find problematic. We are working to resolve compliance and implementation concerns, while at the same time providing for the viability of the Treaty over the long term.

Question 17. As you told the committee on March 17, the U.S. has begun rolling back our flexibility in implementing the Treaty with regard to Russian overflights of the U.S, what flexibility were we showing above the requirements of the Treaty?

Answer. In some instances States Parties have requested reasonable accommodations for circumstances not clearly spelled out in the Treaty. The United States is taking a strict implementation approach to any possible accommodations vis-à-vis Russia, and taking a hard look at any ambiguous Treaty provisions.

An example of our strict approach to implementation includes the response to a request from Russia related to its planned 2015 Open Skies mission over the United

States using its short-range An-30B aircraft. Russia requested three intermediate refueling stops in order to reach the designated U.S. point of entry for Open Skies missions, in line with similar flexibility offered by Russia to NATO Allies in the past. However, the relevant Treaty procedures only require States Parties to provide one intermediate refueling stop. Consistent with the U.S. strict approach to implementation vis-à-vis Russia, we declined Russia's request for three intermediate stops.

Question 18. And why would we provide any flexibility when Russia is already in violation of the Open Skies Treaty.

Answer. As a general matter, the U.S. policy is not to provide additional flexibility vis-à-vis Russia beyond what is required by the Treaty. We have not determined Russia to be in violation of the Open Skies Treaty. However, we are assessing compliance concerns raised by Russia's conduct, and we are actively working with other States Parties to address these concerns.

RESPONSES TO ADDITIONAL QUESTIONS SUBMITTED TO UNDER SECRETARY OF STATE HON. ROSE GOTTEMOELLER BY SENATOR JOHN BARRASSO

Question 1. Are you currently negotiating any legally binding agreements with Russia providing for further reductions in nuclear weapons?

Answer. No.

Question 2. Are you currently negotiating any non-legally binding agreements with Russia providing for further reductions in nuclear weapons?

Answer. No.

Question 3. We have known for years now that Russia has been violating the INF Treaty. In prepared remarks to a joint hearing of the House Armed Services and Foreign Affairs Committees in December 2014, you said you were "actively reviewing potential economic measures in response to Russia's violation." In response to a question on the matter, you said you were exploring "economic countermeasures" in response to the violation. At a similar hearing in December 2015, you said "we continue to consider economic measures with regard to the INF Treaty." In his April 2009 speech in Prague committing to rid the world of nuclear weapons, President Obama said that in order for the nonproliferation regime to work, "Violations must be punished."

- What specific "economic countermeasures" have you been exploring in response to Russia's violations?

Answer. Economic options are one potential part of a response to demonstrate to Russia the costs associated with its violation. Important considerations for determining any economic measures in this instance are that they should be related to the violation, supported by allies, and distinct from the current sanctions related to other Russian actions. We are happy to have the appropriate officials discuss further details of U.S. policies in this area in the appropriate setting.

Question 4. When will the United States impose sanctions on Russia to punish its violation of the INF Treaty?

Answer. Economic options are one potential part of a response to demonstrate to Russia the costs associated with its violation. Important considerations for determining any economic countermeasures are that they should be related to the violation, supported by allies, and distinct from the current sanctions related to other Russian actions. We are happy to have the appropriate officials discuss further details of U.S. policies in this area in the appropriate setting.

Question 5. **[REDACTED]**

Answer. During the December hearing, I misunderstood the nature of a question regarding this system and apologize for any confusion this may have caused. I provided the House Armed Services and House Foreign Affairs Committees with a response to a question for the record which explained this issue to the extent possible for the open hearing record. Additionally, the committees provided me the opportunity to be able to discuss this issue in detail during the closed session that immediately followed the open session. It was helpful to discuss this topic in that environment, given the sensitivity of this issue.

The administration, through the work of the Intelligence Community, regularly provides Congress with authoritative assessments of what the United States knows and does not know regarding Russian nuclear weapons systems. This sharing of in-

formation is done regularly to keep staff and members abreast of these issues, to better inform our diplomacy and policymaking in the administration, and to aid in the legislative process.

For additional information regarding this subject, we are happy to provide a briefing to appropriately cleared staff in a closed setting.

Question 6. There is a significant asymmetry between the U.S. and Russian tactical nuclear arsenals. The former head of the NNSA has said Russia may have as many as ten times more tactical nuclear weapons than we do.

During Senate consideration of the Moscow Treaty, the Chairman of this Committee at the time, Senator Biden, lamented that that treaty did not address tactical nuclear weapons. In addition, he specifically argued that it was time for an "arms-control agreement on tactical nuclear weapons." After ratification of the Moscow Treaty, he said "getting a handle on Russian tactical nuclear weapons must be a top arms control and non-proliferation objective of the United States Government."

As a condition for the ratification for New START, the Senate directed President Obama to certify that he would initiate "negotiations with the Russian Federation on an agreement to address the disparity between the non-strategic (tactical) nuclear weapons stockpiles of the Russian Federation and of the United States." He made that certification on February 2, 2011.

- Please provide a status update on these negotiations.

Answer. Condition 12 of the December 22, 2010, Senate Resolution of Advice and Consent to the Ratification of the New START Treaty provides that the President shall certify to the Senate that "the United States will seek to initiate... negotiations with the Russian Federation to address the disparity between the non-strategic (tactical) stockpiles of the Russian Federation and of the United States...." On April 8, 2010, the United States announced publicly its desire to pursue an agreement with Russia to reduce nonstrategic nuclear weapons.

After signing the New START Treaty in Prague, the President said that the Treaty "will set the stage for further cuts. And going forward, we hope to pursue discussion with Russia on reducing both our strategic and tactical weapons, including non-deployed weapons." The United States remains committed to pursuing future negotiations with Russia on reductions in nuclear weapons and reciprocal measures to increase transparency on nonstrategic nuclear weapons.

At the Chicago NATO Summit on May 20, 2012, NATO stated it was prepared to consider further reducing its requirement for nonstrategic nuclear weapons assigned to the Alliance in the context of reciprocal steps by Russia, taking into account the greater Russian stockpiles of nonstrategic nuclear weapons stationed in the Euro-Atlantic area. The administration remains committed to consulting closely with NATO Allies and will take into account NATO requirements and basing arrangements the context of any discussions on future nuclear arms reductions.

However, arms control requires a willing partner and a conducive strategic environment. Russia has deflected efforts to pursue nonstrategic nuclear weapons arms control by insisting on preconditions for negotiations. These preconditions are unacceptable to the United States and NATO.

For further information, I refer you to the administration's Annual Report on Nonstrategic (Tactical) Nuclear Weapons. The most recent version was completed in January 2016 and delivered to Congress.

Question 7. Russia is essentially a serial violator of arms control treaties. In the last START treaty, Russia violated verification provisions on the counting of ballistic missile warheads, monitoring of mobile ballistic missiles and telemetry. When President Obama completed New START, there were a number of compliance issues outstanding on the original START. Russia has also been violating the INF Treaty.

- Is Russia currently in compliance with its arms control, nonproliferation, and disarmament agreements and commitments? If not, please list the agreements and commitments Russia is currently in noncompliance.

Answer. In addition to Russia's violation of the INF Treaty, Russia remains in violation of the Conventional Armed Forces in Europe (CFE) Treaty, after unilaterally "suspending" its implementation of CFE in 2007. The Treaty does not provide for such an action. Russia's action has had a serious impact on military transparency and confidence in Europe. The United States and NATO Allies made several diplomatic efforts to bring Russia back into compliance after 2007, and in 2011 the United States ceased implementing CFE vis-à-vis Russia as a legal countermeasure. This action was taken in solidarity with our 21 NATO Allies who are also CFE States Parties as well as Georgia and Moldova, who joined us in ceasing implementation of CFE vis-à-vis Russia.

It remains unclear whether Russia has fulfilled its Article II obligations under the Biological Weapons Convention (BWC), as Russia has not adequately declared whether previous BW work has been completely destroyed or diverted to peaceful purposes. Also, we cannot confirm that Russia has met its obligations for declaring all chemical weapons stockpiles, chemical weapons production facilities, and chemical weapons development facilities under the Chemical Weapons Convention (CWC).

In addition, we continue to have concerns about conduct by Russia that raises questions about its adherence to obligations under the Open Skies Treaty—namely, the denial or restriction of flights over parts of its territory, including central Moscow, Kaliningrad, and near its border with Georgia. These issues continue to be raised with Russia, bilaterally and through the Open Skies Consultative Commission (OSCC).

Question 8. What violations of the verification and inspection procedures have occurred by Russia under New START?

Answer. Russia is in compliance with its obligations under the New START Treaty. For further information, I refer you to the administration's Annual Report on Implementation of the New START Treaty. The most recent version was completed in January 2016 and delivered to the Senate.

RESPONSES TO ADDITIONAL QUESTIONS SUBMITTED TO ASSISTANT SECRETARY OF STATE HON. THOMAS COUNTRYMAN BY SENATOR MARCO RUBIO

Question 1. Why did we recently purchase heavy water from Iran's Arak reactor?

Answer. The purchase of 32 metric tons of Iranian heavy water by the U.S. Department of Energy's Isotope Program will fulfill a significant amount of the domestic heavy water need for research and industrial applications, and for which there is no domestic source. This transaction provides U.S. industry with a critical product, while also providing a final disposition for excess heavy water that was exported from Iran prior to Implementation Day as contemplated in the Joint Comprehensive Plan of Action.

Question 2. What are plans for the heavy water? What was the purchase price and was that price consistent with market value for heavy water?

Answer. The U.S. Department of Energy (DOE) announced that its Isotope Program is purchasing heavy water for both domestic industrial and research applications, including for DOE uses. The heavy water will fulfill a substantial portion of domestic demand this year for U.S. industry and domestic research applications. DOE expects to resell the purchased heavy water at commercial prices to domestic commercial and research buyers. One recipient of the heavy water will be the Oak Ridge National Laboratory to use in its Spallation Neutron Source (SNS), which is a facility used in materials research and macromolecular and biological systems. SNS will use the heavy water to increase the intensity of its beam and therefore the efficiency of the facility. The Isotope Program plans to pay approximately $8.6 million dollars for the heavy water, a price that reflects the realities of the current market.

Question 3. Were other countries in the P5+1 or other likeminded countries willing to purchase the heavy water and if so, why did the United States make the purchase?

Answer. As part of the Joint Comprehensive Plan of Action (JCPOA), Iran committed to limit its stockpile of nuclear-grade heavy water to 130 metric tons. To reach Implementation Day on January 16, 2016, Iran brought its heavy water stockpile under the 130 metric ton cap by exporting its excess heavy water to Oman in anticipation of a sale on the international market. The purchase of 32 metric tons of this heavy water by the U.S. Department of Energy's Isotope Program will fulfill a significant amount of the domestic heavy water need for research and industrial applications, and for which there is no domestic source. This transaction provides U.S. industry with a critical product, while also providing a final disposition for excess heavy water exported from Iran as contemplated in the JCPOA. It is possible that other countries with a need for heavy water may choose to purchase Iranian heavy water as well and we understand certain countries have already expressed interest in doing so.

Question 4. What are we doing beyond the Nuclear Security Summit to keep nuclear or radiological materials away from ISIL?

Answer. The State Department leads the U.S. government's diplomatic efforts to help foreign partners to counter nuclear smuggling and to keep nuclear and radioactive materials out of the hands of terrorists and criminals. The has negotiated politically-binding Joint Action Plans to counter nuclear and radioactive materials smuggling with 14 countries, including with Iraq in 2014. Under this Joint Action Plan, Iraq committed to strengthen its capabilities to prevent, detect, and respond to incidents of nuclear smuggling and to strengthen its ability to find and recover nuclear and radioactive materials out of regulatory control. The United States is actively supporting Iraq in these efforts. These Joint Action Plans demonstrate our commitment to work together to counter nuclear and radioactive materials smuggling and to create a framework for ongoing collaboration to strengthen capabilities in this area.

The State Department also works closely with U.S. interagency partners to provide capacity-building programs to assist partner countries worldwide in securing nuclear materials. For example, State, the Department of Energy, and the Federal Bureau of Investigation are actively working with partner governments to address insider threats, to keep nuclear and radioactive materials within regulatory control, and to strengthen investigative and prosecutorial capabilities for instances in which materials fall out of regulatory control. The United States also co-chairs the Global Initiative to Combat Nuclear Terrorism, which is an important multilateral mechanism for promoting best practices for preventing, detecting, and responding to terrorist acquisition of nuclear and radioactive materials.

Question 5. What is our plan for securing Pakistan's growing stockpile of nuclear material?

Answer. Securing nuclear material is a national responsibility. The Government of Pakistan is well aware of the range of potential threats to its nuclear arsenal and has a professional and dedicated security force.

However, we are concerned by the increased security challenges that accompany growing stockpiles and continue to urge all states with nuclear weapons to exercise restraint regarding nuclear and missile capabilities. We would be glad to further discuss issues relating to Pakistan's nuclear weapons program in a classified setting.

Pakistan is engaged with the international community on nuclear security issues, including the International Atomic Energy Agency, the Global Initiative to Combat Nuclear Terrorism, and the Nuclear Security Summit process. Pakistan also recently ratified the 2005 Amendment to the Convention on the Physical Protection of Nuclear Material.

Question 6. What work have we done to protect Pakistan's nuclear material from the threat by outsiders and insiders?

Answer. Securing nuclear material is a national responsibility.

The Security, Strategic Stability, and Nonproliferation (SSS&NP) working group under the Strategic Dialogue includes discussion of issues such as international efforts to enhance nuclear security. The SSS&NP dialogue remains an invaluable forum and we look forward to the next round of discussions in May.

The United States and Pakistan both participate in nuclear security-related fora such as the Global Initiative to Combat Nuclear Terrorism (GICNT), the Nuclear Security Summit process, and the International Atomic Energy Agency (IAEA)-hosted meetings of Nuclear Security Support Centers (NSSC). Through such fora, participating countries share best practices related to nuclear security.

We would be glad to further discuss issues relating to Pakistan's nuclear weapons program in a classified setting.

Question 7. During your testimony before the Committee on March 17, you noted that the "calls upon" language with regard to Iran's ballistic missiles is not a lesser standard than the previous outright ban on Iran's development of ballistic missiles.

- Why did the administration cave to Russia, China, and Iran in accepting a lesser standard?

Answer. Unfortunately, Iran has consistently ignored Security Council resolutions requiring it not to conduct ballistic missile activity for years. Thus, the prohibitions on Iran's access to missile technology and expertise are the most important and effective restrictions on Iran's missile program, and they remain in full effect. U.N. Security Council Resolution 2231 (2015) maintains all legally binding requirements on states to deny Iran access to missile technology and expertise, and the international community continues to rely on these provisions to limit Iran's missile program.

Under UNSCR 2231, transfers of items to Iran that are contained on the Missile Technology Control Regime (MTCR) Technical Annex require approval in advance of the Security Council. As a permanent member of the Council, we have the ability to veto any such transfer. The MTCR Technical Annex was also the basis for the missile-related restrictions under previous UNSCRs targeting Iran (UNSCRs 1737, 1747 and 1929). Iranian ballistic missile launches are inconsistent with UNSCR 2231, which is a clear and unanimous expression of the Council's position on Iran's ballistic missile programs.

Question 8. Why has the U.N. not acted to sanction Iran for its continued ballistic missile development?

Answer. We have long been concerned about Iran's ballistic missile program. Iran's efforts to develop increasingly capable ballistic missile systems remain one of our most significant nonproliferation challenges and a very real threat to regional and international security. We continue to rely on a wide range of multilateral and unilateral tools to address Iran's ballistic missile development efforts.

The prohibitions on Iran's access to missile technology and expertise are the most important and effective restrictions on Iran's missile program, and they remain in full effect. U.N. Security Council Resolution 2231 (2015) maintains all legally binding requirements on states to deny Iran access to missile technology and expertise, and the international community continues to rely on these provisions to limit Iran's missile program.

We will continue working with allies to raise Iran's actions inconsistent with UNSCR 2231 at the U.N. Security Council, as we are doing in response to the most recent launches. Raising the issue at the Security Council shines a spotlight on Iran's provocative ballistic missile launches in defiance of UNSCR 2231 and increases the political cost to Iran of its behavior. We will continue to use the Security Council to discuss such missile launches, consistent with monitoring the implementation of UNSCR 2231, so that the Council can discuss appropriate responses. In addition to the provisions of U.N. Security Council resolutions, we also rely on a variety of other tools to counter Iran's missile activities.

For example, on January 17, 2016, we designated three entities and eight individuals involved in a network that procured materials and equipment for Iran's ballistic missile program. These designations effectively cut these individuals and entities off from the U.S. financial system, and any non-U.S. person who engages with these designees may also be subject to U.S. secondary sanctions.

Question 9. During your testimony before the Committee on March 17, you noted that Iran's ballistic missile development should be viewed in the context of regional ballistic missile developments.

- Is the administration laying the ground work for acceptance of Iran's ballistic missile activities in a JCPOA world?

Answer. No. The focus of the Joint Comprehensive Plan of Action (JCPOA) is Iran's nuclear program. The JCPOA was not predicated on a change in Iran's broader regional behavior, nor do we necessarily expect one. What has changed quite significantly is Iran's nuclear program. We will continue our efforts, in close coordination with regional and international partners, to counter Iran's ?support for terrorism, its destabilizing regional activities, its illicit arms transfers, its ballistic missile program, its human rights abuses, and the rest of our long list of concerns with regard to Iran's policies in the region. But because of the JCPOA, we will be able to tackle all of those issues and confront Iran directly where and when we need to, without the specter of an Iranian nuclear weapon.