Introduction

• This presentation describes key nuclear arms control issues as of early 2016:
  • What the Obama Administration has achieved
  • What has hindered further nuclear reductions
  • Issues for future negotiations
What the Obama Administration has Achieved
Main Achievements

• New START signing and implementation
• Nuclear Security Summit process
• Joint Comprehensive Plan of Action regarding Iran nuclear program
New Strategic Arms Reduction Treaty (New START)
New START

• Signed in April 2010 in Prague
• Entered into force in February 2011
Main Treaty Provisions

- U.S. and Russia limited to no more than
  - 700 deployed strategic delivery vehicles
  - 800 deployed and non-deployed launchers
  - 1550 deployed strategic warheads
- Limits to be implemented by February 2018
- Verification measures include data exchanges, notifications, on-site inspections
Deployed Strategic Delivery Vehicle (SDV) Limit

- **700** deployed SDVs
  - Intercontinental ballistic missiles (ICBMs)
  - Submarine-launched ballistic missiles (SLBMs)
  - Nuclear-capable bombers

- “Deployed” missiles are in silos or launch tubes on submarines
Deployed/Non-Deployed Limit

- 800 deployed and non-deployed ICBM/SLBM launchers and bombers
- “Non-deployed” launchers are ICBM silos or launch tubes on submarines that contain no missile
Deployed Warhead Limit

- **1550** warheads on deployed SDVs
  - All warheads, nuclear or otherwise, on deployed ICBMs/SLBMs count
- Each deployed nuclear-capable bomber counted as one warhead
  - Arms control has historically given bombers more lenient counting rules
Treaty Implementation

- Since treaty entered into force in 2011:
  - 10 data exchange updates
  - Over 10,200 notifications exchanged
- As of late-January 2016 each side had conducted 18 of 18 inspections permitted during treaty year 5 (began February 2015)
## New START Numbers, October 2015

<table>
<thead>
<tr>
<th>New START Limit</th>
<th>U.S.</th>
<th>Russia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deployed SDVs (700)</td>
<td>762</td>
<td>526</td>
</tr>
<tr>
<td>Deployed warheads (1550)</td>
<td>1538</td>
<td>1648</td>
</tr>
</tbody>
</table>

(Limits take full effect in February 2018)
Expected U.S. Force When New START Fully Implemented

<table>
<thead>
<tr>
<th></th>
<th>New START Limits</th>
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<tbody>
<tr>
<td></td>
<td>700</td>
</tr>
<tr>
<td></td>
<td>1550</td>
</tr>
<tr>
<td>SDVs</td>
<td></td>
</tr>
<tr>
<td>Warheads</td>
<td></td>
</tr>
<tr>
<td>ICBM systems</td>
<td>400</td>
</tr>
<tr>
<td></td>
<td>400</td>
</tr>
<tr>
<td>SLBM systems</td>
<td>240</td>
</tr>
<tr>
<td></td>
<td>1090</td>
</tr>
<tr>
<td>Bombers</td>
<td>60</td>
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<td></td>
<td>60</td>
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</tbody>
</table>
Nuclear Security Summit (NSS) Process
History

- Obama initiated NSS to improve security of nuclear materials
- Summits held
  - 2010 – Washington
  - 2012 – Seoul
  - 2014 – The Hague
NSS Goals

• Reduce amount of dangerous nuclear material: highly enriched uranium (HEU) and plutonium
• Improve security of nuclear and other radioactive material
• Enhance international cooperation on nuclear security
Achievements

• 53 countries participated
• 12 of 22 NSS participating countries that had HEU are now HEU-free
  • Several others secured or removed some HEU
• 35 countries signed joint statement binding them to strengthen nuclear security
• Measures to counter nuclear smuggling
What’s Next for NSS Process?

- Fourth and final NSS to be held in Washington March 31-April 1, 2016
- Will likely seek to create global nuclear security architecture, formalizing the role of bodies including:
  - International Atomic Energy Agency (IAEA)
  - Global Initiative to Combat Nuclear Terrorism
  - Global Partnership Against the Spread of Weapons and Materials of Mass Destruction
Joint Comprehensive Plan of Action (JCPOA)
JCPOA

- Signed July 2015 in Vienna
- Took effect in October 2015
- Iran nuclear commitments met; sanctions suspended in January 2016
Main Iranian Commitments

• Reduce stockpile of low-enriched uranium (LEU) to less than 300 kg, for 15 years
• Enrichment capped at 5060 centrifuges and 3.67% for 10-15 years
• Modify Arak reactor so that it cannot produce weapons-grade plutonium
• Not engage in activities associated with nuclear weapons development
Impact of JCPOA

• Lengthens breakout time via uranium path to at least 1 year for at least 10 years
• Blocks plutonium path to nuclear weapons
• Provides unprecedented access to and monitoring of Iran’s nuclear program
• Prevents a nuclear-armed Iran for at least 15 years and perhaps indefinitely
U.S. Commitments

• With IAEA verifying Iran has completed agreed nuclear measures and provisionally applied Additional Protocol, U.S. has:
  • Suspended nuclear-related sanctions via waivers and executive orders
  • Reserved right to impose new sanctions for terrorism, human rights and missile reasons
  • Maintained primary sanctions prohibiting U.S. companies from engaging with Iran
What Has Hindered Further Nuclear Reductions?
U.S. Views on Next Steps

- Obama in 2013 proposed further reductions to one-third below New START levels and cuts to non-strategic nuclear weapons
- But Russia links additional cuts to resolution of other issues
- Russian military action against Ukraine brought U.S.-Russia relations to low point
Russian Views

• Little enthusiasm for further reductions
• Link further cuts to resolution of Russian concerns on issues such as:
  • U.S. missile defense in Europe
  • U.S. non-strategic nuclear weapons in Europe
  • Advanced conventional weapons
  • Multilateralization of nuclear reductions
U.S. Missile Defense in Europe

- 4 ships with SM-3 missile interceptors based in Spain
- Supporting radar deployed in Turkey
- SM-3s deployed on land ("Aegis Ashore")
  - Romania (2015)
  - Poland (planned, 2018)
Missile Defense

• Russians link further nuclear reductions to resolution of missile defense concerns
  • Claim U.S. missile defense in Europe directed against Russia
• U.S. says its missile defense directed against rogue states such as Iran and poses no threat to Russia’s strategic missiles
U.S. Non-Strategic Nuclear Weapons (NSNW) in Europe

- U.S. believed to deploy some 200 B61 nuclear bombs in Europe
  - At 6 air bases in Italy, Belgium, Germany, Netherlands & Turkey
- Russians say B61s must be withdrawn before NSNW negotiations
Bilateral vs Multilateral

• U.S. believes there should be one more round of bilateral U.S.-Russia nuclear arms reductions
  • U.S. and Russian nuclear arsenals many times larger than any that of any third state
• Russia says next negotiation should bring in other nuclear weapons states
# World’s Nuclear Powers, 2015

<table>
<thead>
<tr>
<th>Country</th>
<th>Military Stockpile*</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S.</td>
<td>4700</td>
</tr>
<tr>
<td>Russia</td>
<td>4500</td>
</tr>
<tr>
<td>France</td>
<td>300</td>
</tr>
<tr>
<td>China</td>
<td>260</td>
</tr>
<tr>
<td>UK</td>
<td>215</td>
</tr>
<tr>
<td>Israel</td>
<td>80</td>
</tr>
<tr>
<td>Pakistan</td>
<td>120-130</td>
</tr>
<tr>
<td>India</td>
<td>110-120</td>
</tr>
<tr>
<td>North Korea</td>
<td>&lt;10</td>
</tr>
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</table>
Issues for Future Negotiations
Potential Items for Negotiation

- Further reductions in nuclear forces
- INF Treaty compliance
- Comprehensive Nuclear Test Ban Treaty
- Resolving questions on missile defense
- Advanced conventional weapons
- Multilateralization of arms control
Further Reductions in Nuclear Forces
Modernization Plans

• Russia modernizing strategic nuclear forces, including ICBMs, SLBMss, bombers and submarines
  • Now midway through program
• U.S. planning modernization, including submarines, ICBMs and bombers
  • U.S. modernization begins in earnest in 2020s; spending at highest levels 2021-2035
New Bilateral Negotiations Possible?

• Downturn in U.S.-Russia relations makes further bilateral negotiations difficult

• Some analysts believe Russia will seek new talks before New START expires in 2021
  • Will tight defense budgets in one or both create incentive to negotiate?

• Many issues if negotiations resume
Strategic Nuclear Reductions

• Should sides go beyond New START limits?
  • Obama in 2013 proposed one-third cut

• Revisit bomber weapon counting rule?
  • Bombers can carry more than one weapon

• Limit reserve strategic warheads?
  • U.S. willing if Russia ready to limit non-strategic nuclear weapons
Time to Include All Weapons?

• Many analysts believe next round should include all U.S., Russian nuclear weapons:
  • Deployed strategic warheads
  • Non-deployed (reserve) strategic warheads
  • Non-strategic (tactical) nuclear weapons
• U.S. allies, Congress want non-strategic nuclear weapons constrained
### Estimated U.S., Russia Nuclear Warhead Levels, 2015

<table>
<thead>
<tr>
<th>Category</th>
<th>U.S.</th>
<th>Russia</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Stockpile)</td>
<td>(~4700)</td>
<td>(~4500)</td>
</tr>
<tr>
<td>Deployed strategic *</td>
<td>~1900</td>
<td>~1780</td>
</tr>
<tr>
<td>Non-deployed (reserve) strategic</td>
<td>~2620</td>
<td>~700</td>
</tr>
<tr>
<td>Non-strategic (total)</td>
<td>~500</td>
<td>~2000</td>
</tr>
<tr>
<td>Retired warheads **</td>
<td>~2200</td>
<td>~3000</td>
</tr>
<tr>
<td>Total warheads</td>
<td>~7200</td>
<td>~7500</td>
</tr>
</tbody>
</table>

* Estimated actual number, not New START accountable number

** Retired warheads have been removed from stockpile and await dismantlement
Key NSNW Arms Control Issues

- Reduce/limit warheads or delivery systems?
  - Delivery systems have conventional roles
- Seek to apply global or regional limits?
  - NSNW portability an argument for global limits
- Verification challenges
Possible Confidence-Building Measures

• Transparency regarding numbers, types, locations and status of NSNW
• Codify “demating” (separation) of warheads from delivery systems
• Relocate/consolidate NSNW to sites away from NATO-Russia border
  • Asian states want no NSNW relocation to Asia
Single Limit on All Nukes?

• Some suggest next treaty limit all U.S. and Russian nuclear weapons
  • Could have sub-limit on deployed strategic warheads, the most readily usable
  • Retired weapons to be treated separately

• Example:
  • Overall limit of 2500 nuclear warheads
  • Sub-limit of 1000 deployed strategic warheads
INF Treaty Compliance
INF Treaty Issues

- U.S. says Russia violating treaty by testing prohibited ground-launched cruise missile
  - Few details made public
  - Russia denies any violation
Russian INF Counter-Charges

- U.S. using INF missiles as missile defense test targets
  - U.S. says treaty permits this
- U.S. arming unmanned aerial vehicles (UAVs)
  - U.S. says UAVs different from cruise missiles
- Putting Aegis Ashore in Romania, which could launch ground-launched cruise missiles
  - U.S. says not possible
INF Treaty Compliance

• Critical to bring Russia back into full compliance with INF Treaty
  • U.S. preparing countermeasures
  • If Russia remains non-compliant, little chance Senate would ratify any new treaty

• New Russian INF missile, if deployed, would target Europe and Asia, not U.S.
Possible INF Solution?

- Sides agree INF missiles can be used as missile defense targets and that UAVs are not cruise missiles
  - Would be attractive to both militaries
- U.S. offers transparency to show Aegis Ashore can not launch cruise missiles in return for Russian transparency to assure that Russia back in compliance
Comprehensive Nuclear Test Ban Treaty (CTBT)
CTBT Status

- CTBT, signed in 1996, would ban all nuclear tests worldwide
- Entry into force requires ratification by 44 “nuclear-capable” states
  - Only 36 have done so; 8 others, including U.S. and China, have not yet ratified
  - Little prospect Senate will ratify in near future
Reasons to Ratify

- Senate did not ratify CTBT in 1999 due to concerns about verifiability and reliability of U.S. nuclear stockpile
- Since then:
  - Verification means improved, including with International Monitoring System
  - Stockpile Stewardship Program provides confidence in U.S. weapons without testing
- CTBT would lock in U.S. nuclear knowledge advantage
Interim Steps on CTBT?

- Sept 24, 2016 is CTBT’s 20th anniversary
- Some suggest UN Security Council urge CTBT entry into force, make International Monitoring System permanent
- Others suggest U.S., Russia, UK, France, China, India and Pakistan affirm commitment not to test
  - Only North Korea has tested since 1998
Missile Defense (MD) Issues
Missile Defense Dilemma

- U.S. MD deployments over next decade will not threaten Russian strategic missiles
  - Number of interceptors with velocity to engage strategic missile warheads too low
  - SM-3 interceptors too slow
- But Russia insists on treaty to limit MD
  - Non-starter for U.S., Senate would not ratify
Transparency Agreement?

• Under transparency agreement, U.S. and Russia would exchange data on:
  • Current numbers of missile interceptors, launchers, radars, etc.
  • Projected numbers for next 10 years
• Would allow each to judge whether other’s missile defense posed problem
• Russia thus far not interested
Advanced Conventional Weapons
Limiting Advanced Conventional Weapons

- New START limits cover all warheads on ICBMs, SLBMs
  - Any future conventional warheads would thus be captured by treaty
- If either side develops hypersonic glide vehicle, numbers would be modest
  - Hypersonic glide vehicles might be limited in side agreement
Cruise Missiles

- Conventionally armed cruise missiles pose more difficult question
  - Key element of U.S. force projection
  - Russia catching up (Syria, 2015)
  - Verification challenges
- Start with U.S.-Russia discussion of cruise missiles’ impact on strategic balance?
Multilateralization
U.S., Russia and the Rest

• Nuclear arms reductions should not forever remain just a U.S.-Russia process
  • As U.S., Russian numbers come down, third countries will need to join in reducing
• But third countries now resist, noting U.S., Russian nuclear stockpiles much larger than any third-country arsenal
Involving Others

- Given differences in arsenal sizes, hard to negotiate limits
  - Russia, U.S. unready for equality with others
- Explore readiness of others (at least China, UK and France) to commit to no build-up as long as U.S. and Russia are reducing?
  - Might also provide basic data on arsenals
Sources


