Nuclear Security in Russia –
and Current State of Cooperation

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Meeting on U.S.-Russian Nuclear Security Cooperation
26 September 2014, U.S. Institute of Peace
belfercenter.org/mta

The threat to U.S. national security

- Nuclear terrorism remains a serious risk
  - Consequences so devastating that even a small probability is enough to drive action to reduce it
  - Al Qaeda pursued nuclear weapons actively – incl. conducting explosive tests for the bomb program in the Afghan desert
  - No strong, publicly available evidence yet of ISIL work on nuclear weapons – and, wanting to protect its territory, it may be deterrable
  - But ISIL has global ambitions; ability to organize long-term projects; $100s of millions to spend; recruits from all over; territory for plotting

- Nuclear material remains the best handle we have on preventing nuclear terrorism
  - ~20 publicly documented cases of smuggling of HEU, Pu
  - Most appear to have originated in Russia
Moscow building with enough HEU for a bomb, 1994

- Problems then were visible, obvious
- Problems today are invisible, insidious

Nuclear security in Russia:
The good news

- Nuclear security in Russia is *dramatically* better than in the mid-1990s
  - No more gaping holes in fences
  - No more HEU and Pu left out on the tables at night
  - No more doors with no HEU or Pu detector (some exceptions)
  - No more staff not being paid for months at a time
  - No more guards leaving their posts to forage for food
  - U.S.-financed major security and accounting upgrades completed at vast majority of sites
  - Russia requires facilities to be protected against a range of possible outsider and insider threats
  - Improved regulations in place in many areas
  - Many facilities now have enough money to implement effective security (not all)
  - Broader effort to strengthen security culture
Nuclear security in Russia: the bad news

- Some significant vulnerabilities remain
  - Weaknesses in protection against insider threats (more later)
  - Weaknesses in protection against outsider threats (more later)
  - Regulation and enforcement needs to be strengthened
- Significant threats remain (especially insider threats)
- Sustainability is a serious concern
  - Some facilities with little money or incentive to sustain effective security
- Security culture remains problematic
  - Widespread complacency, dismissal of threat, taking security short-cuts
- Nuclear weapons, HEU, and Pu are in far too many places
  - Example: U.S. has 1 operating HEU pulse reactor, Russia has 15

Nuclear security in Russia: the bad news: insider protection

- Material accounting inadequate to detect protracted thefts, or thefts from old, stored material
  - Uncertainties in accounting mean thefts could be lost in the noise
  - No requirement for trend analysis to detect protracted thefts
  - Thousands of stored containers not re-measured to see if the nuclear material is still there
- Some exits may not be covered by portal monitors
- Inconsistent application of two-person rule
  - Rules don't require that people who come in together stay together
  - Rules sometimes violated
- Tamper-indicating devices could be defeated
  - Many could potentially be defeated without detection using readily available tools
Nuclear security in Russia: the bad news: insider threats

- Widespread insider corruption and theft in Russia — some of which has penetrated the nuclear industry
  - 2008: Former Minister of Atomic Energy jailed for stealing $31M
  - 2012: Director and two deputy directors of Siberian Chemical Combine (large HEU and Pu processing facility) arrested for (non-nuclear) corruption
  - 2010: General in command of nuclear weapon storage site relieved of duty, accused of corruption — press accounts suggest millions in theft
  - 2008: MVD colonel inspecting nuclear security arrested for soliciting bribes to overlook security violations

Nuclear security in Russia: the bad news: outsider protection

- Continued reliance at some sites on conscript MVD guard forces
  - Shifting over time — more contract forces in some places, more longer-serving volunteers among the MVD
  - Conscripts are poorly paid, modest morale, modest training
  - Incidents of patrolling with no ammunition in weapons
- Still issues with inadequate clear zones, detection, and delay at some sites
- Uncertainties about regularity and realism of testing such as force-on-force exercises
U.S.-Russian nuclear security cooperation: what’s done

<table>
<thead>
<tr>
<th>Category</th>
<th>Upgrades Complete?</th>
<th>Sustainability Work Ongoing?</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>MoD: warhead sites, naval fuel</td>
<td>✔</td>
<td>✗</td>
<td>No agreement left</td>
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<tr>
<td>Rosatom weapons complex</td>
<td>almost</td>
<td>✔</td>
<td>Most sensitive now</td>
</tr>
<tr>
<td>Rosatom civilian</td>
<td>✔</td>
<td>✔</td>
<td>Sustainable?</td>
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<tr>
<td>Non-Rosatom civilian</td>
<td>✔</td>
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<td>Sustainable?</td>
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<tr>
<td>Regulation, training, culture</td>
<td>ongoing</td>
<td>✔</td>
<td>More to be done</td>
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<tr>
<td>Reducing locations</td>
<td>beginning</td>
<td></td>
<td>Inherently sustainable</td>
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</tbody>
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- Even where upgrades “complete,” further improvements (especially insider protection) often highly desirable
- At sites where all work is completed, little to no U.S. access or knowledge of how well security is being sustained

Elements of an effective nuclear security program -- and what we have influenced

- Where U.S. programs have had a large influence:
  - Installation of modern security and accounting equipment
  - Availability of effective training
- Where U.S. programs have had a modest influence:
  - Better regulation (helped with stronger rules, but implementation an issue)
  - Stronger security culture (created broad program, but issues remain)
  - Consolidating to fewer locations (MCC, GTRI, some in other MPC&A)
- Where Russia needs to act for itself:
  - Providing professional, well-trained, well-motivated guard forces
  - Strengthening the authority and resources of regulators
  - Providing the money to sustain security for the long haul

Fundamentally, Russia needs to make a strategic decision that better nuclear security is needed, and deserves priority
U.S.-Russian nuclear security cooperation: changing times

- CTR ended in June 2013, replaced by MNEPR
  - Work delayed, access limited, MoD work ended completely
- Large-scale equipment upgrades largely complete
  - Even without Ukraine, new approaches would be needed
  - Planned focus shifting to sustainability, regulation, culture, best practices…
- Rough political waters in both Washington and Moscow
  - Washington: broad concern about cooperation post-Ukraine; belief work is largely complete; belief Russia should pay for this itself
  - Moscow: opposition to anything that smacks of U.S. assistance to a “weak” Russia (but sites still eager for, express strong needs for, continued cooperation)
  - Rosatom review, no Rosatom contracts for work beyond 12/2014

Access matters

- Strong U.S. national interest in having good knowledge of the state of security for the world’s largest nuclear stockpile
- On-the-ground visits provide a rich source of information
  - Can observe actual implementation
  - Can interact with working level staff informally
  - Majority of our knowledge of the key issues in nuclear security in Russia comes from such on-the-ground visits
- Access has always been politically difficult, is becoming more so
  - Extended period with no access as MNEPR was being negotiated, new MNEPR arrangements worked out
  - Access now more limited – may come to an end
  - Russians take a “pay per view” approach – access ends for sites where no substantial funding of work is any longer underway
Other areas of cooperation to reduce nuclear terrorism, proliferation risks

- **GTRI**
  - Russia critical partner in removing HEU from Soviet-supplied countries
  - Most remaining HEU-fueled reactors targeted for conversion are in Russia

- **Second Line of Defense**
  - U.S.-Russia split the cost of installing detectors at all official ports and border crossings in Russia
  - Need to fix the holes blown in this ring by the Russia-Belarus-Kazakhstan customs union

- **Intelligence on nuclear terrorism and smuggling**
  - Both sides would benefit from broader sharing, cooperation

- **Helping other countries, building global initiatives**
  - P5+1; 6-party talks; arms reductions; Global Initiative; Global Partnership; PSI; strengthening IAEA; beefing up export controls...