

## **FINAL REPORT**

### **Naval Postgraduate School's Project on Advanced Systems and Concepts for Countering Weapons of Mass Destruction (PASCC) Grant/Agreement No. N00244-15-1-0040**

**Committees on International Security and Arms Control (CISAC)  
U.S. National Academy of Sciences (NAS) and  
Russian Academy of Sciences (RAS)**

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## **Background**

The Committee on International Security and Arms Control (CISAC) was established in 1980 as a standing committee of the National Academy of Sciences (NAS) to bring together leading scholars in science, technology, and medicine with military, diplomatic, and policy experts initially to address critical problems of international security, particularly issues concerning nuclear weapons, and subsequently to address additional issues including biosecurity, cybersecurity, space security, and terrorism. CISAC engages influential counterparts through its formal dialogues in Russia, China, and India, and through projects and less formal interactions with key organizations in other countries. All of CISAC's work through the dialogues and the projects is based on technical security issues and is intended to lead to policy insights and options.

The NAS-Russian Academy of Sciences' (RAS) CISAC dialogue has operated continuously for over 35 years for the promotion of understanding between our nations. The remarks in the meetings are not for personal attribution. NAS CISAC participants provide direct briefings on the dialogues to government officials and bring what they learn from CISAC's dialogues into a variety of forums, including the Academy, advisory committees, other dialogues, and collaborations with other experts working on international security issues in the United States and Russia. CISAC's dialogues also lay the foundations for or enhance other activities with public products, such as NAS studies, joint NAS-RAS studies, and other projects.

## **Meeting, October 20-22, 2015 Moscow, Russian Federation**

### **Overview**

The NAS and RAS CISACs met in Moscow, October 20-21, 2015. CISAC staff also met on October 23 with the Ministry of Foreign Affairs and with staff members of the U.S. Embassy in Moscow.

Both Russians and Americans recognized the currently poor state of U.S.-Russian relations resulting largely from the crisis in Ukraine, and both sides noted that they had received encouragement from their governments to proceed with the CISAC dialogue because the long-standing relations between the committees allow the open channel of communication to continue.

The two groups discussed several topics: nuclear security (civilian and military), nuclear archeology, long-range precision conventional weapons and implications for strategic stability; nuclear materials security/nuclear terrorism; space security; means of supporting International Atomic Energy Agency (IAEA) safeguards; ballistic missile defense (BMD); the P5 Process; and, how the technical community can support the implementation of the Joint Comprehensive Plan of Action (JCPOA). The United States and the Russian Federation have taken very different approaches to these questions, and finding common ground is challenging. The groups agreed to

explore all of these topics further in the near term, except for nuclear security and nuclear archeology, which were postponed for later discussion.

There are indications of a significant disconnect or gap in understanding between U.S. and Russian perspectives with regard to real vs. perceived technical capabilities of planned weapons systems. The Russian General Staff and military planners remain concerned about U.S. conventional capabilities with strategic implications (current cruise missiles, particularly sea-launched, and conventional global strike capabilities under development) because they are seen collectively as destabilizing with respect to the Russian strategic deterrent or a direct threat to the leadership, potentially giving the United States the capability of a disarming or decapitating first strike. There is great desire on the Russian side to have venues to discuss strategic stability in the absence of government-to-government discussions (e.g., the suspension of the Presidential Bilateral Commission).

### **Nuclear Materials Security and Nuclear Terrorism**

There is shared concern about potential threats arising from The Islamic State of Iraq and the Levant (ISIL), which has money and other resources that make it a more credible threat for using weapons of mass destruction than other terrorist groups. There are also concerns about safety and security of nuclear weapons in the hands of some nation states, and about safety and security of nuclear energy facilities. NAS and RAS CISACs explored the possibility of holding a joint workshop on best practices and lessons learned with regard to nuclear security, including insider threats and threats of sabotage (internal or external). NAS proposed to work toward a joint workshop on nuclear security, but the RAS was not prepared to pursue this topic further at that time.

### **Identifying Ways for Russia and the United States to Better Assist IAEA Safeguards and Security**

The United States has sought to strengthen IAEA safeguards, including improved safeguards technology and the State-Level Concept, and measures beyond the existing Additional Protocol. There is also a need for specialized capabilities in support of the IAEA's role in the JCPOA. Russia has not been supportive of U.S. efforts at the IAEA, particularly on the State-Level Concept, emphasizing instead the risks posed that a state could use the IAEA as an arm of intelligence gathering, and this concern has pushed Rosatom's policy of reducing the human factor in the nuclear enterprises as a means of strengthening the nonproliferation regime. Rosatom says that deployment of next generation safe reactors that are part of a closed fuel cycle is a main goal. Many technical issues remain, however, before this goal can be achieved. Russia would be glad to pursue technical cooperation with the United States on this type of next generation reactors.

### **Technical Challenges to Security Posed by ISIL**

The stated objective of Russian involvement in Syria is to gain back specific territory for the Syrian government so as to establish sufficient security for a transition government in Syria.

Russian participants saw the potential for cooperation with the United States, using airpower against ground combatants who do not comply with traditional standards of warfare.

### **Conventional Long-Range Precision Weapons**

It was observed that currently there are no new arms control talks, and until the issues regarding Russia's sense of strategic stability are addressed, and until the United States and Russia resolve the issues regarding INF Treaty violations, neither side will be interested in resuming them. A U.S. participant said that we need to use the time between now and the end of the Treaty between the United States of America and the Russian Federation on Measures for the Further Reduction and Limitation of Strategic Offensive Arms (New START) agreement to prepare for the next round of discussions by focusing on strategic stability and resolving differences on both sides. For example, Russia is concerned about U.S. conventional weapons and the possibility of a disarming first strike. When U.S. experts talk about "conventional strike," Russian experts often hear specifically "prompt global strike," which is planned to be a limited program with a small number of weapons precisely because it is designed to counter terrorist threats, not strategic rivals. Prior to the resumption of arms control discussions, U.S. and Russian technical experts should resolve these differences as a means of addressing strategic stability questions.

### **Security and Stability in Space**

Space security is intimately linked to the overall security relationship between the two countries. Issues about which the two sides could agree to cooperate include: space debris, situational awareness, cyber security, regulation, international standards, and military use of space. In particular, the issue of long-term sustainability of space activities is actively discussed among those in Russia responsible for safety and security of space operations. The Russian Federation policy is noted to have zero tolerance for dangerous objects in space as well as for harmful radio interference in space.

### **Technical Issues Related to the JCPOA**

The JCPOA was a breakthrough, resolving a substantial proliferation problem without war, however a great deal of work remains regarding implementation of the deal, making U.S.-Russian cooperation even more important. This cooperation can take several forms. The two countries could support the IAEA through providing inspectors and other technical support. They could attempt to demonstrate that it would be far more expensive for Iran to retain domestic enrichment capabilities for its relatively small nuclear energy program than to purchase fuel on the open market.

Likewise, U.S. and Russian experts could also work together on monitoring Iran's missile program, which is important for the sanctions regime. This was deemed important to discuss not only because of the concerns about missile threats and how they may or may not affect missile defense systems (in particular the European Phased Adaptive Approach), but also because of the complexity of "overlapping sanctions" that are geared toward various aspects of Iran's nuclear and military programs as well as its foreign policy actions.

## **The P5 Process and the Non-Proliferation Treaty (NPT) Agenda**

The P5 considered a proposal to convene scientific and technical experts organized under their academies of sciences or other appropriate organizations to support the P5 Process under the NPT. The states involved had not decided whether to pursue this idea.

### **Meetings, September 19-23, 2016 Moscow, Russian Federation**

September 19-23, 2016, a small group from NAS CISAC convened and participated in a series of preparatory meetings with Russian colleagues in Moscow. In particular, discussions were held on the following topics: ballistic missile defense, space security, and full-scope strategic stability.

For the last several years, Russia has with increasing urgency highlighted that strategic stability depends not only on the balance of strategic nuclear weapons, but also on a much wider array of military capabilities that Russia perceives as having strategic implications because of the nature of the technologies and the United States' presumed lead and advantage in developing and utilizing them. Further, Russian officials and even Russian analysts have raised concerns about U.S. and NATO programs. Often these concerns are more about the concepts and how the programs could evolve in a hypothetical future. Conventional prompt global strike is a good example. It is a small U.S. program that objectively could have little strategic significance with respect to Russia in its current form. Russia has objected to the program because the concept is perceived as threatening.

Conversely, the United States argues that Russia should evaluate these programs based on their current and near-term projected capabilities even as some in the U.S. government gain support for the programs by saying that they will address anticipated future threats, such as intercontinental ballistic missile threats from North Korea and Iran, when at least the latter is many years away. Many in the United States have discounted Russia's arguments that systems in development, such as ballistic missile defense and conventional prompt global strike threaten strategic stability. Almost uniformly, American policy makers and analysts regard Russian arguments as unfounded. But some American experts have argued that it seems that Russian policy makers and analysts may genuinely hold these views, and it would be a mistake to reach negotiations for an extension or follow-on to New START without having better understood the arguments on both sides and thought through the implications.

The NAS-RAS CISAC dialogue has helped determine how best to organize substantive future dialogues with the most appropriate technical experience. Essential to these planning efforts were discussions held in September 2016 with senior officials at the Ministry of Foreign Affairs, the U.S. State Department, the Russian Academy of Sciences Presidium and institutes, and other groups as topically appropriate.

## **Meeting Sponsors**

Major funding for both of these sets of meetings was provided by a grant to NAS CISAC by the Naval Postgraduate School's Program on Advanced Systems and Concepts for Combating Weapons of Mass Destruction (PASCC). Additional funds were provided by the Carnegie Corporation of New York, the Defense Threat Reduction Agency's nuclear treaty verification office, and the NAS Council as part of its continued commitment to the work of CISAC.

## **Points of Contact**

Rita S. Guenther, Ph.D.  
Senior Program Officer, CISAC  
National Academy of Sciences  
(202) 334-2359  
rguenther@nas.edu

Micah Lowenthal, Ph.D.  
Director, CISAC  
National Academy of Sciences  
(202) 334-3074  
mlowenthal@nas.edu