

Background Overview of

*The Next Phase of U.S.-Russian Civil Nuclear Relations:
Opportunities, Risks and Choices*

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Civil nuclear relations between the United States and Russian Federation are undergoing seismic shifts. In particular, five developments are certain to force significant changes in their bilateral nuclear relationship:

- *U.S. Becomes a “Strategic Partner” with Russia.* In their joint declaration of April 6, 2008, Presidents Bush and Putin reaffirmed the creation of a “strategic partnership.” In the short term, this partnership will focus on further reducing U.S.-Russian nuclear arsenals, promoting the development of civil nuclear power globally, and facilitating Russian accession into the World Trade Organization. “Where we have differences,” their declaration proclaimed, “we will work to resolve them in a spirit of mutual respect.”¹
- *Bush Seeks U.S.-Russian Nuclear Cooperation Agreement.* So far, the U.S. and Russia have engaged in limited civil nuclear cooperation and trade in the absence of a formal U.S. nuclear cooperative agreement. President Bush is committed to changing this. On May 13, 2008, President Bush officially submitted to Congress the U.S.-Russia civil nuclear cooperation agreement.² State Department officials have reportedly described this agreement as necessary for any effort to establish an international nuclear fuel bank, or a multinational uranium enrichment center on Russian territory. Before entering into force, the agreement must sit before Congress for 90 days of continuous session.³ It is unclear how this agreement will fare. Two bills—H.R. 1400 (which has 326 co-sponsors and passed the House in a 397-to-16 vote in September 2007) and S. 970 (which has 73 co-sponsors)—would block any U.S.-Russian nuclear deal until the President certifies that Russian-Iranian nuclear, advanced conventional military, and missile cooperation has ended. A third bill—H.R.6574., which the House Committee on Foreign Affairs passed in late July 2008—would condition the deal’s implementation on similar Presidential certifications.
- *White House Lifts Objections to Russian-Iranian Nuclear Cooperation.* During Bush’s first term, the U.S. condemned Russian assistance to Iran’s Bushehr reactor, characterizing the facility as a

¹ *U.S.-Russia Strategic Framework Declaration*, Office of the Press Secretary, White House, April 6, 2008 <<http://www.whitehouse.gov/news/releases/2008/04/20080406-4.html>>.

² *Agreement between the Government of the United States of America and the Government of the Russian Federation for Cooperation in the Field of Peaceful Uses of Nuclear Energy* (U.S.-Russia “123 agreement”), signed May 6, 2008, and formally submitted to Congress on May 13, 2008 <<http://www.npec-web.org/US-Russia/20080506-USRussia-123Agreement.pdf>>. On June 21, 1973, the U.S. and U.S.S.R. concluded the *Agreement on Scientific and Technical Cooperation in the Field of Peaceful Uses of Atomic Energy*. This agreement is different from a 123 agreement. For this treaty’s full text, see http://untreaty.un.org/unts/60001_120000/7/39/00013949.pdf.

³ For more, see *Atomic Energy Act of 1954*, as amended, (42 U.S.C. § 2153) sec. 123 <<http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr0980/ml022200075-vol1.pdf#pagemode=bookmarks&page=57>>.

bomb-maker and cover for other illicit activities. In accordance with the *Iran Nonproliferation Act* of 2000 (P.L. 106-178), the Administration also withheld payments for Russia's work on the international space station (ISS) because of Moscow's continued assistance to Iran's nuclear-capable long-range missile program. The White House later changed course, and persuaded Congress to lift the ban on U.S. payments for Russian ISS-related work with the *Iran Nonproliferation Amendments Act* of 2005 (P.L. 109-112). The Administration also began to soften objections to Bushehr. In the joint declaration of April 2008, Presidents Bush and Putin described Russia's completion and fueling of Bushehr as a "welcome step" that would undercut Iran's argument for enriching uranium.

- *Commerce Department Eases Quotas on Russian Nuclear Fuel Imports.* Roughly half of the low enriched uranium (LEU) fuel consumed by U.S. civilian power reactors comes from excess Russian military stockpiles of high enriched uranium (HEU) that are downblended under the terms of a 1993 "HEU-LEU" agreement. Also known as "Megatons-to-Megawatts," this agreement is set to expire in 2013. In addition, to prevent Russia from dumping stocks of commercially-produced LEU, the Department of Commerce began restricting Russian LEU imports in 1992. On February 1, 2008, the DoC began easing these restrictions.⁴ Later this year, the Supreme Court may decide a case on uranium trade that will determine whether any LEU imports (from Europe, Russia or elsewhere) will still be restricted.⁵ There is pending legislation, H.R. 4929 and S. 2531, to uphold these restrictions.
- *DoE Proposes to Develop Advanced Nuclear Reactors and Fuels with Russia.* The Department of Energy (DoE) has proposed to help fund Russia's development of an advanced high temperature gas-cooled reactor, to develop fast reactors with Russia, and to promote a multinational uranium enrichment center in Russia, as well as spent nuclear fuel recycling.⁶ The DoE envisions such U.S.-Russian collaboration as part of America's Global Nuclear Energy Partnership (GNEP), a government-run nuclear research and development program which the DoE says it hopes to commercialize in "15 or so years,"⁷ and which would reverse a 30-year U.S. nonproliferation policy against civil spent-fuel recycling. Such collaboration is contingent upon a substantial increase in Congressional funding of GNEP.

These five developments point to dramatic changes in U.S.-Russian civil nuclear relations. During the 1990s, Washington used "donor-recipient" assistance on nuclear-arsenal security issues to engage Moscow. Now, the Bush Administration is attempting to move the bilateral civil nuclear relationship toward a more co-equal "strategic partnership."

This background paper aims to clarify what this new partnership will entail. It proceeds in two sections. The first examines key concerns that are likely to complicate civil nuclear relations between the

⁴ "United States and Russian Uranium Agreement Reached," Press Release, Office of Public Affairs, U.S. Department of Commerce, February 1, 2008 <http://www.commerce.gov/NewsRoom/PressReleases_FactSheets/PROD01_005136>.

⁵ Robert Barnes, "High Court to Hear Uranium Case; Bethesda's USEC Argues to Impose Anti-Dumping Duties on French Firm," *Washington Post*, April 22, 2008, p. D1 <<http://www.washingtonpost.com/wp-dyn/content/article/2008/04/21/AR2008042102987.html>>.

⁶ For example, see *A Bilateral Action Plan to Enhance Global and Bilateral Nuclear Energy Cooperation*, report of the U.S.-Russian Civil Nuclear Energy Working Group, December 8, 2006, transmitted to President Bush and President Putin on December 15, 2006; and "U.S. and Russia Sign Plan for Russian Plutonium Disposition," press release, U.S. Department of Energy, November 19, 2007 <<http://energy.gov/news/5742.htm>>.

⁷ This figure comes from *Global Nuclear Energy Partnership Strategic Plan*, GNEP-167312, Rev. 0, Office of Fuel Cycle Management, Office of Nuclear Energy, U.S. Department of Energy, January 2008, p. 6-10 <<http://www.gnep.gov/pdfs/gnepStrategicPlanJanuary2007.pdf>>.

U.S. and Russia. The second and final section identifies questions that need yet to be answered to fully realize the strategic partnership.

I. Key Concerns

Russian-Iranian Nuclear, Defense and Missile Cooperation

During the 1990s, Russian-Iranian nuclear cooperation precluded civil nuclear relations between Washington and Moscow from expanding beyond the “donor-recipient” nuclear assistance model. U.S. intelligence agencies had long suspected Iran, a signatory of the Nuclear Nonproliferation Treaty (NPT), of pursuing undeclared weapons-related nuclear activities. The Bush 41 and Clinton Administrations therefore decided against negotiating with the Kremlin for an agreement to permit bilateral civil nuclear cooperation—that is, a “123 agreement” after Section 123 of the *Atomic Energy Act*, which describes the legal requirements for such an agreement—until Russia had ended all assistance to Iran’s nuclear, advanced conventional military and long-range missile programs.⁸

In April 1995, the Clinton Administration took the unprecedented step of directly sharing U.S. intelligence on Iran’s suspected nuclear weapons program with the Kremlin in the hopes of persuading Russia to end nuclear assistance to Iran.⁹ Russian-Iranian nuclear cooperation neither ended then, nor after the International Atomic Energy Agency (IAEA) had discovered nearly two decades-worth of undeclared Iranian nuclear materials and activities in 2003; nor after the IAEA Board of Governors had passed a resolution finding Iran to be in “noncompliance” with its NPT-required IAEA safeguards obligations in 2005; nor after the U.N. Security Council had passed three resolutions against Iran’s noncompliance.

There are other concerns. In March 2007, the Office of the Director of National Intelligence concluded in a letter to the State Department: “We assess that individual Russian entities continue to provide assistance to Iran’s ballistic missile programs. We judge that Russian-entity assistance, along with assistance from entities in China and North Korea, has helped Iran move toward self-sufficiency in the production of ballistic missiles.”¹⁰ At the same time, Russia has firmly protested America’s NATO-endorsed efforts to build a limited ballistic missile defense (BMD) system in Eastern Europe to protect the U.S. and Europe from missiles principally from Iran.

With regard to NATO, Moscow also objects to plans to expand NATO membership to include the Ukraine and Georgia. Russia supports the separatist Georgian provinces of South Ossetia and Abkhazia, and began deploying additional troops and arms into the breakaway regions for “peace-keeping” purposes

⁸ Stephen Greenhouse, “Russia and China Pressed Not to Sell A-Plants to Iran,” *The New York Times*, January 25, 1995, p. A6.

⁹ For example, see Stephen Greenhouse, “U.S. Gives Russia Secret Data on Iran to Discourage Atom Deal,” *The New York Times*, April 3, 1995, p. A9; Stephen Erlanger, “Russia Says Sale of Atom Reactors to Iran is Still On,” *The New York Times*, April 4, 1995, p. A1; Greenhouse, “U.S. Keeps On Urging Russia On Iran Deal,” *The New York Times*, April 9, 1995, p. 1; Eric Schmitt, “Republicans Warn Russia That Deal With Iran Threatens Aid,” *The New York Times*, May 8, 1995, p. A7; and Michael R. Gordon, “Russia Plans to Sell Reactors to Iran Despite U.S. Protests,” *The New York Times*, March 7, 1998, p. 3.

¹⁰ See Letter on Russia’s civil space launch and military ballistic missile cooperation with Iran from Kathleen Turner, Director of the Office of Legislative Affairs, Office of the Director of National Intelligence, to Jeffrey T. Bergner, Assistant Secretary of State for Legislative Affairs, March 1, 2007 <<http://www.npec-web.org/US-Russia/20070301-ODNI-RussiaAssistsIranMissileProgram.pdf>>.

in late April 2008.¹¹ Georgia views the Kremlin's deployments as provocative, and a Georgian State Minister has described the situation with Russia as "very close" to war.¹²

Despite these and other longstanding concerns, National Security Advisor Stephen Hadley revealed to reporters on July 2, 2007, that White House and Kremlin officials had initialed a U.S.-Russian nuclear cooperative agreement.¹³ Congressional reaction to this announcement was swift. House Committee on Foreign Affairs chair Tom Lantos (D-CA) and Ranking Member Ileana Ros-Lehtinen (R-FL) sent a letter to Secretary of State Condoleezza Rice on August 3, 2007, requesting that the Executive Branch delay formally submitting the U.S.-Russian nuclear cooperative agreement until after the Committee finishes thoroughly reviewing the agreement and its impact on U.S. foreign policy and nonproliferation objectives. Lantos and Ros-Lehtinen's letter describes the U.S.-Russian nuclear cooperative agreement as controversial in light of Russia's reluctance to strongly sanction Iran's efforts to enrich uranium and acquire nuclear weapons-making capabilities.¹⁴

In an effort to deter the White House from formally submitting a nuclear cooperative agreement to the Hill, the House of Representatives passed Chairman Lantos' *Iran Counter-Proliferation Act of 2007* (H.R. 1400). Section 405 of this bill bans formal U.S. nuclear cooperation with any state "that is assisting the nuclear program of Iran or transferring advanced conventional weapons or missiles" to it. Such an agreement can proceed only if the President determines that the government in question has suspended such assistance and "is committed to maintaining that suspension" until "Iran has ceased its efforts to design, develop, or acquire a nuclear explosive device or related materials or technology."¹⁵

Congress echoed these concerns again in 2008. Congressman Ed Markey (D-MA) sent a letter to President Bush on May 1, 2008, stating that submitting to Congress a U.S.-Russian nuclear cooperative agreement "without first addressing the numerous outstanding questions regarding Russia's assistance to Iran in the fields of nuclear energy and missile technology is a prescription for an unnecessarily divisive debate, which is in neither U.S. nor Russian interests."¹⁶ The Congressman explained: "[I]f Russian assistance to Iran's nuclear and missile programs is not openly acknowledged and properly challenged, our efforts to halt Iran's steady march towards a nuclear weapons capability become far less likely to

¹¹ Amie Ferris-Rotman, "Russia Sends Extra Troops to Georgian Rebel Region," *Reuters*, May 1, 2008 <<http://uk.reuters.com/article/worldNews/idUKL0115597120080501>>.

¹² Mark John, "Georgia Says 'Very Close' to War with Russia," *Reuters*, May 6, 2008 <<http://www.reuters.com/article/newsOne/idUSL0616183020080506>>

¹³ Press Briefing by National Security Advisor Stephen Hadley at the Colony Hotel, Kennebunkport, Maine, Office of the Press Secretary, White House, July 2, 2007 <<http://www.whitehouse.gov/news/releases/2007/07/20070702-1.html>>. See also Daniel Horner and Ann MacLachlan, "U.S.-Russia Nuclear Pact Initialed, but Faces Hurdles in Congress," *Nuclear Fuel*, July 16, 2007, pp. 6-8. Horner and MacLachlan report that the nuclear cooperative agreement was initialed by U.S. ambassador to Russia William Burns and Russian deputy director of the Federal Atomic Energy Agency Nikolai Spassky.

¹⁴ Letter from House Committee on Foreign Affairs chair Tom Lantos (D-CA) and ranking member Ileana Ros-Lehtinen (R-FL) to Secretary of State Condoleezza Rice requesting a delay in the formal submission to Congress of the *Agreement for Peaceful Civil Nuclear Cooperation between the United States and Russia*, August 3, 2007.

¹⁵ On April 8, 2008, the Senate Committee on Finance held a hearing on the Senate's version of the *Iran Counter-Proliferation Act of 2007* (S. 970). It has 73 cosponsors. Section 6 of S. 970 explicitly refers to U.S.-Russia civil nuclear cooperation, and bans such cooperation until the President certifies to Congress that either Russia has suspended all nuclear and nuclear-capable missile cooperation with Iran, or Iran "has completely, verifiably, and irreversibly dismantled all nuclear enrichment-related and reprocessing-related programs."

¹⁶ "Markey Tells Admin to Hold Off on Russia Nuke Deal," press release, Office of Congressman Edward Markey (D-MA), May 1, 2008 <<http://markey.house.gov/index.php?option=content&task=view&id=3336&Itemid=125>>.

succeed.” Markey’s letter added: “It certainly is a mistake to argue, as some Administration officials have already, that we must formalize a nuclear cooperation agreement with Russia to promote the Global Nuclear Energy Partnership program or to stand up an international nuclear fuel bank. Both efforts can proceed without such an agreement.”

Others in Congress felt the same way. House Committee on Energy and Commerce Chair John Dingell (D-MI) and House Energy Subcommittee on Oversight and Investigations Chair Bart Stupak (D-MI) warned President Bush on May 7, 2008, that “sending this [U.S.-Russia nuclear cooperative] Agreement to Congress before key questions are answered will most assuredly raise Congressional and public objections that could defeat the ultimate purpose of such an initiative, to improve and solidify our relations with Russia.”¹⁷ Dingell and Stupak’s letter identified three specific areas of concern: (1) risks of technology diversion to countries of proliferation concern; (2) uncertainties regarding the Global Nuclear Energy Partnership’s feasibility, cost and potential proliferation risks; and (3) Russian nuclear and missile assistance to Iran.

Also on May 7, 2008, Senators Norm Coleman (R-MN) and Evan Bayh (D-IN) sent a letter co-signed by 30 other Senators urging President Bush not to submit to Congress the U.S.-Russia nuclear cooperative agreement “until Russia has ended support for Iran’s ballistic missile program, provision of advanced conventional weapons, and assistance to Iran’s nuclear fuel cycle program, which advances their ability to develop nuclear weapons.”¹⁸ Coleman and Bayh’s letter added, “Russia must also first demonstrate that it is prepared to cooperate with us to increase meaningful economic pressure on Iran to end its defiance of the U.N. Security Council’s mandatory resolutions to suspend its enrichment of uranium.”

All of these Congressional notes failed to have their intended effect. On May 5, 2008, the White House issued Presidential Determination No. 2008-19, a memorandum to the Secretary of State and Secretary of Energy in which President Bush wrote: “I have determined that the performance of the Agreement will promote, and will not constitute an unreasonable risk to, the common defense and security I hereby approve the proposed Agreement and authorize the Secretary of State to arrange for its execution.”¹⁹ The next day, U.S. and Russian officials signed the U.S.-Russian nuclear cooperative agreement in Moscow.²⁰ This Presidential announcement made submission of the agreement to the Hill

¹⁷ Letter from House Energy and Commerce Committee chair John Dingell (D-MI) and House Energy Subcommittee chair Bart Stupak (D-MI) to President George W. Bush, May 7, 2008 <http://energycommerce.house.gov/Press_110/110-ltr.050708.POTUS.Russia.pdf>.

¹⁸ “Coleman, Bayh urge President Not To Submit Russia Nuclear Cooperation Agreement to Congress,” Press Release, Office of Senator Norm Coleman (R-MN), May 7, 2008 <http://coleman.senate.gov/public/index.cfm?FuseAction=PressReleases.Detail&PressRelease_id=c56eb508-ce45-7b39-3981-f84371039886>. The letter was co-signed by Senators Jon Kyl (R-AZ), Ken Salazar (D-CO), Benjamin Cardin (D-MD), Ron Wyden (D-OR), Gordon Smith (R-OR), Thomas Carper (D-DE), Saxby Chambliss (R-GA), Maria Cantwell (D-WA), Tim Johnson (D-SD), Barbara Mikulski (D-MD), John Sununu (R-NH), Larry Craig (R-ID), David Vitter (R-LA), Pat Roberts (R-KS), Mel Martinez (R-FL), Sam Brownback (R-KS), Robert Bennett (R-UT), Jeff Sessions (R-AL), Olympia Snowe (R-ME), Jim DeMint (R-SC), Tom Harkin (D-IA), Bill Nelson (D-FL), Lisa Murkowski (R-AK), Robert Casey (D-PA), Elizabeth Dole (R-NC), Lindsey Graham (R-SC), John Thune (R-SD), Susan Collins (R-ME), John Cornyn (R-TX), and Joe Lieberman (D-CT).

¹⁹ “Memorandum for the Secretary of State and the Secretary of Energy,” Presidential Determination No. 2008-19, Office of the Press Secretary, White House, May 5, 2008 <<http://www.whitehouse.gov/news/releases/2008/05/20080506-4.html>>.

²⁰ “Fact Sheet on U.S.-Russia Agreement for Peaceful Nuclear Cooperation,” Bureau of Legislative Affairs, Department of State, May 6, 2008 <<http://www.npec-web.org/US-Russia/20080506-STATE-USRussia123-FactSheet.pdf>>. *See also*

all but inevitable: President Bush officially submitted to Congress the U.S.-Russia civil nuclear cooperation agreement, along with the required State Department-authored Nuclear Proliferation Assessment Statement (NPAS) on Russia, on May 13, 2008.²¹

Key actors in the House were not happy about either of the President's submissions. The House Committee on Energy and Commerce sent a letter on May 22, 2008, asking the U.S. Government Accountability Office (GAO) to review the State Department's Nuclear Proliferation Assessment Statement on Russia.²² In particular, the Committee requested from the GAO: "(1) a detailed review of the process by which the NPAS was researched and written; (2) an assessment of whether all relevant information from classified and unclassified sources was considered and fairly assessed; and (3) an assessment of whether the NPAS conclusions are fully supported and whether there is contradictory information that was omitted which could invalidate, modify, or impair the conclusions or basis for recommendation to approve the 123 agreement."

As for the 123 agreement itself and the White House's formal submission of it to the Hill, key House Republicans urged President Bush on June 5, 2008, to withdraw it. House Foreign Affairs Committee ranking member Ileana Ros-Lehtinen and thirteen other Republican Congressman sent a letter asking President Bush that focused on the Administration's request for Congress to extend the President's waiver authority under the *Iran, North Korea and Syria Nonproliferation Act* or INKSNA (P. L. 106-178, as amended; 50 U.S.C. 1701 note) to allow NASA to buy space-launch vehicles from Russia.²³ The Republican House members wrote: "[W]e believe the Administration has a clear choice to make: either withdraw from consideration by Congress the nuclear cooperation agreement with Russia or issue a certification to Congress under pertinent U.S. laws, with accompanying detailed report, that Russia has suspended all nuclear assistance to Iran and ceased to transfer to it advanced conventional weapons and missiles to the other rogue regimes listed under INKSNA."

However, the White House, has ignored this request because it sees no inconsistency in its actions. "The *Iran, North Korea, Syria Nonproliferation Act* contains a different legal standard than that in the *Atomic Energy Act* of 1954, which is the relevant provision of law with respect to a 123 agreement," said

"President Bush Pleased by Signing of U.S.-Russian Agreement for Cooperation," Office of the Press Secretary, White House, May 6, 2008 <<http://www.whitehouse.gov/news/releases/2008/05/20080506-5.html>>.

²¹ For a recent analysis in support of the U.S.-Russia civil nuclear cooperation agreement, see Robert Einhorn, Rose Gottemoeller, Fred McGoldrick, Daniel Poneman, and Jon Wolfsthal, *The U.S.-Russia Civil Nuclear Agreement: A Framework for Cooperation* (Washington, DC: Center for Strategic and International Studies, May 28, 2008) <<http://www.csis.org/media/csis/pubs/080522-einhorn-u.s.-russia-web.pdf>>.

²² Letter from House Energy and Commerce Committee chair John Dingell (D-MI) and House Energy Subcommittee chair Bart Stupak (D-MI) to the Government Accountability Office on the Department of State's Nuclear Proliferation Assessment Statement on Russia, May 22, 2008 <http://energycommerce.house.gov/Press_110/110-ltr.052208.GAO.123.ltr.pdf>.

²³ Letter from House Committee on Foreign Affairs ranking member Ileana Ros-Lehtinen (R-FL) and thirteen other Republican Congressman to President Bush on the U.S.-Russia 123 agreement and the *Iran, North Korea and Syria Nonproliferation Act*, June 5, 2008 <<http://www.npec-web.org/US-Russia/20080605-HouseGOP-LetterRussia123.pdf>>. This letter was signed by Representative Thaddeus McCotter (R-MI), Eric Cantor (R-VA), Edward Royce (R-CA), Mike Pence (R-IN), Elton Gallegly (R-CA), Donald Manzullo (R-IL), Dan Burton (R-IN), Steve Chabot (R-OH), Chris Smith (R-NJ), John Boozman (R-AR), Bob Inglis (R-SC), Luis G. Fortuno (R-Puerto Rico), and J. Gresham Barrett (R-SC).

For background on the Administration's request for a Presidential waiver authority extension, see Carl Behrens and Mary Beth Nikitin, *Extending NASA's Exemption from the Iran, North Korea, and Syria Nonproliferation Act*, Report RL34477 (Washington, DC: Congressional Research Service, May 8, 2008) <<http://www.npec-web.org/US-Russia/20080508-CRS-NasaRussiaIRNA-RL34477.pdf>>.

John C. Rood, the acting Assistant Secretary of State for Arms Control and International Security, at a House Foreign Affairs Committee hearing on the U.S.-Russian civil nuclear cooperation agreement on June 12, 2008.²⁴

A Richer Russia and Nuclear Threat Reduction Programs

During the 1990s, the Department of Defense's Nunn-Lugar Cooperative Threat Reduction (CTR) program, the Department of Energy's CTR-related Defense Nuclear Nonproliferation (DNN) initiatives, and other forms of "donor-recipient" nuclear collaboration were premised, in part, on Russia's insolvency and more accommodating foreign policy.

These premises no longer hold. First, Russia's increased production of oil and gas, coupled with the rising price of hydrocarbons on international markets, has led to several years of record surpluses for the Russian government. In turn, Russia has accumulated in excess of \$480 billion in foreign reserves,²⁵ and a "stabilization fund" (which the Russian Ministry of Finance recently split into a reserve fund and a welfare fund) worth more than \$150 billion.²⁶ Second, Russian foreign policy has become less accommodating. Putin's moves towards autocracy, Moscow's vacillation on how to deal with Iran's nuclear noncompliance, the Kremlin's vocal opposition to U.S.-E.U. ballistic missile defense initiatives, and Russia's difficult relations with Georgia, Ukraine and other neighbors, are only the most obvious examples of foreign-policy friction.

It is clear that U.S. nuclear-assistance collaboration with Russia has yielded benefits for the U.S. CTR collaboration has deactivated 7,260 Cold War-era nuclear warheads; destroyed 671 former Soviet intercontinental ballistic missiles (ICBMs); and eliminated 496 ICBM silos, 119 ICBM mobile launchers, and 30 nuclear-armed submarines.²⁷

Some U.S.-Russian nuclear threat reduction programs may also be indirectly supporting Russian nuclear programs, however. Responding to inquiries from House Homeland Security Committee chairman Bennie Thompson (D-MS), the Government Accountability Office (GAO) reported that funds for a U.S. Department of Energy program to provide "peaceful" employment for former Soviet nuclear-weapons scientists were instead going to help recruit and train a totally new generation of Russian nuclear scientists.²⁸

²⁴ See *Russia, Iran, and Nuclear Weapons: Implications of the Proposed U.S.-Russia Agreement*, hearing before the House Committee on Foreign Affairs, June 12, 2008 <http://foreignaffairs.house.gov/hearing_notice.asp?id=1002>. Archived video of the hearing is available at <http://international.edgeboss.net/real/international/fc06122008.smi>.

²⁵ Shu-Ching Jean Chen, "Foreign Reserves Worldwide at All-Time High," *Forbes*, February 15, 2008 <http://www.forbes.com/2008/02/15/foreign-reserves-record-markets-econ-cx_jc_0215markets03.html>.

²⁶ "Russian Finance Ministry Divides Stabilization Fund into Two," *RIA Novosti*, January 30, 2008 <<http://en.rian.ru/russia/20080131/98101247.html>>.

²⁷ "The Nunn-Lugar Scorecard," website of Sen. Richard Lugar (R-IN), accessed February 1, 2008 <<http://lugar.senate.gov/nunnlugar/scorecard.html>>.

²⁸ US Government Accountability Office, *Nuclear Nonproliferation: DOE's Program to Assist Weapons Scientists in Russia and Other Countries Needs to Be Reassessed*, report to the Chairman of the House Committee on Homeland Security, GAO-08-189, December 12, 2007 <<http://www.gao.gov/new.items/d08189.pdf>>.

In late January 2008, the House Committee on Energy and Commerce Subcommittee on Oversight and Investigations held a hearing that drew attention to the GAO report's findings.²⁹ In addition, the House Energy and Commerce Committee recently publicized evidence suggesting that these DoE programs are funding Russian institutes that are directly assisting Iran's noncompliant nuclear program.³⁰

In the coming years, a key challenge for the Executive and Legislative Branches will be to develop U.S.-Russian nuclear assistance and threat reduction programs that evade these pitfalls, and account for the changing political and financial realities of the bilateral relationship.³¹

Protecting America's Nuclear Fuel Market

Concerns about climate change and U.S. dependency on foreign oil have led the White House to call for increased domestic use of nuclear energy. U.S. nuclear utilities, though, are already facing increased uranium fuel prices.³² This uranium price-supply squeeze was not supposed to happen.

In 1998, the United States Enrichment Corporation (USEC) announced it would add to its gaseous-diffusion enrichment facility in Paducah, Kentucky, by building a gas-centrifuge enrichment facility in Piketon, Ohio, with a capacity of 3.8 million separative work units (SWUs). In addition, the Louisiana Energy Services (LES) of URENCO, a British-Dutch-German consortium that provides enrichment services in Europe, is building a gas-centrifuge enrichment plant near Eunice, New Mexico, that aims to produce 3 million SWUs.³³ Together, these new plants were supposed to help satisfy U.S. demand for nuclear fuel.

²⁹ *Combating Nuclear Proliferation: The Effectiveness of the Department of Energy's Initiatives for Proliferation Prevention (IPP) Program*, hearing of the House Committee on Energy and Commerce's Subcommittee on Oversight and Investigations, January 23, 2008. For more, see http://energycommerce.house.gov/cmte_mtgs/110-oi-hrg.012308.NuclearProliferation.shtml. See also "Nuclear Nonproliferation: DOE Needs to Reassess Its Program to Assist Weapons Scientists in Russia and Other Countries," prepared statement of Robert A. Robinson, Managing Director of Natural Resources and Environment, US Government Accountability Office (GAO), before the House Committee on Energy and Commerce's Subcommittee on Oversight and Investigations, GAO-08-434T, January 23, 2008 <<http://www.gao.gov/new.items/d08434t.pdf>>

³⁰ For example, see Letter from House Committee on Energy and Commerce chair John Dingell (D-MI) and House Subcommittee on Oversight and Investigations Bart Stupak (D-MI) to Secretary of Energy Samuel Bodman requesting answers to questions on the Department of Energy's Initiatives for Proliferation Prevention, February 6, 2008. See also Memorandum from William C. Ostendorff, Principal Deputy Administrator, National Nuclear Security Administration, to the Secretary of Energy, in response to remaining questions from the House Energy and Commerce Committee's February 2008 Letter, February 26, 2008.

³¹ For contrasting views on CTR and threat-reduction related programs, see Kenneth N. Luongo and William E. Hoehn, III, "Reform and Expansion of Cooperative Threat Reduction," *Arms Control Today*, June 2003 <http://www.armscontrol.org/act/2003_06/luongohoehn_june03.asp>; and Justin Bernier, "The Death of Disarmament in Russia?," *Parameters*, Vol. 34, No. 2 (Summer 2004), pp. 84-103 <<http://www.carlisle.army.mil/usawc/Parameters/04summer/contents.htm>>; and Shawn Macomber, "Cooperative Threat Reductio Ad Absurdum," *The American Spectator*, October 4, 2004 <http://www.spectator.org/dsp_article.asp?art_id=7194>.

³² See Shawn McCarthy, "Nuclear Plans May Stall on Uranium Shortage," *Globe & Mail*, March 22, 2007 <<http://www.theglobeandmail.com/servlet/story/LAC.20070322.RNUCLEAR22/TPStory/Business>>. See also "Lack of Fuel May Limit US Nuclear Power Expansion," News Office, MIT, March 21, 2007 <<http://web.mit.edu/newsoffice/2007/fuel-supply.html>>.

³³ "Washington Group Gets Urenco LES Plant Contract," *Reuters*, August 6, 2007 <<http://www.reuters.com/article/companyNewsAndPR/idUSN0642356420070806>>.

What was also supposed to assure this outcome was the imposition of uranium fuel trade controls. In September 1992, the Department of Commerce (DoC) established a ban against Russian dumping of low enriched uranium (LEU) fuel into the U.S. The concern at the time was that Russia would flood the U.S. nuclear fuel market with below-market LEU blended down from weapons-grade high enriched uranium (HEU).

Instead, Russia was allowed to export LEU into the U.S. only under the terms of the so-called 1993 HEU-LEU agreement. Under this agreement, which is also known as the “Megatons-to-Megawatts” program, Russia agreed—over a twenty-year period—to downblend 500 metric tons of excess Soviet-era military-origin HEU into civil LEU fuel, which in turn would be sold to U.S. nuclear utilities. By 2013, when the current HEU-LEU agreement is set to expire, Russia will have earned as much as \$12 billion from LEU sales.

Restrictions on Russian LEU imports outside of the Megatons-to-Megawatts program stayed in place for over fifteen years. On February 1, 2008, the DoC began lifting these restrictions.³⁴ This decision comes at a time when roughly half of the nuclear fuel that U.S. nuclear utilities are consuming is coming from Russian LEU imported under terms of the HEU-LEU agreement.

The DoC’s decision has drawn cheers from U.S. nuclear utilities, which would prefer to buy the very cheapest fuel, and jeers from U.S. nuclear fuel-makers, who want to maintain or expand their share of the U.S. nuclear fuel market. USEC—which is the exclusive seller of Russian-origin nuclear fuel obtained via the DoE’s Megatons-to-Megawatts program—issued a statement that urged the Executive and Legislative Branches to ensure enforcement of the yearly import quotas on Russian LEU fuel.³⁵ Sen. Pete Domenici (R-NM), in whose state URENCO is building a new enrichment facility, also raised concerns about whether the U.S. would prove willing to enforce import quotas, and suggested that he may introduce legislation to protect the interests of U.S. nuclear fuel-makers—in particular, an amendment to link post-2013 Russian access to U.S. nuclear fuel markets to Moscow’s continued downblending of excess Soviet-era HEU stockpiles.³⁶

A key national and energy security issue for the White House and Congress will be to determine how dependent U.S. nuclear utilities should allow themselves to be on Russian LEU fuel in the future.

Global Nuclear Energy Partnership: Will It Be Developed Commercially and, If So, When?

Although the U.S. and Russia have expressed a desire to promote civil nuclear power globally, they differ sharply on which governments should receive nuclear assistance. For instance, the Russians have long refused to end nuclear cooperation with Iran, despite protests from Washington.

Moreover, Russia has offered nuclear cooperation agreements not only to Algeria, Egypt, India and Libya,³⁷ but also to hydrocarbon-rich Saudi Arabia,³⁸ an American ally which Secretary of State

³⁴ “United States and Russian Uranium Agreement Reached,” Office of Public Affairs, US Department of Commerce, *op. cit.*

³⁵ “USEC Inc. Statement on Signing of Russian Suspension Agreement Amendment,” USEC News Release, February 1, 2008 <http://www.usec.com/v2001_02/Content/News/NewsTemplate.asp?page=/v2001_02/Content/News/NewsFiles/02-01-08.htm>.

³⁶ “Statement of the Senator on Russian Suspension Agreement on Uranium,” Office of Senator Pete Domenici (R-NM), February 1, 2008 <<http://domenici.senate.gov/news/record.cfm?id=291948>>.

³⁷ On Algeria, *see* ISA Consulting, “Algeria’s Nuclear Secrecy,” *Energy Publisher*, July 31, 2007 <<http://www.energypublisher.com/article.asp?id=10507>>. On Egypt, *see* “Russia, Egypt to Sign Nuclear Energy Agreement

Condoleezza Rice herself has said may not even need a civil nuclear energy program.³⁹ Here, America and Russia's differences raise the issue of how the international expansion of civil nuclear energy—especially in politically volatile regions like the Middle East—should be managed.⁴⁰

Since the mid-1970s, the U.S. has also actively sought to limit the international commercial spread of plutonium fuels and mixed plutonium- and uranium-oxide (MOX) fuels. In late November 2007, the Department of Energy announced a deal, in which the U.S. would pay Russia \$400 million dollars to convert excess Russian plutonium into MOX fuel, and irradiate this fuel in Russian breeder reactors that would apparently be configured not to breed more plutonium.⁴¹ Some nonproliferation analysts worry that deals like this will make international commerce in plutonium-based fuels more acceptable, and even provide political cover to push forward with U.S. efforts to promote new plutonium initiatives, such as the DoE's project to contract French companies to complete a MOX fabrication plant at Savannah River.⁴²

Proponents of U.S.-Russian civil nuclear cooperation view such bilateral cooperation as an opportunity not only to establish a multinational uranium enrichment center on Russian territory or an international nuclear fuel bank; but also to further long-term programs for global expansion of civil nuclear energy—in particular, Russia's Global Nuclear Infrastructure Initiative (GNII) and America's Global Nuclear Energy Partnership (GNEP).⁴³ Proponents claim that bilateral cooperation on GNEP/GNII programs may enable:

- both countries to develop together, and deploy domestically and internationally, a new generation of advanced nuclear reactors;

Soon: Lavrov," *RIA Novosti*, December 14, 2007 <<http://en.rian.ru/world/20071214/92503259.html>>. On India, see Vladimir Radyuhin, "Russia Still Hopes for Nuclear Pact," *The Hindu*, December 21, 2007 <<http://www.thehindu.com/2007/12/21/stories/2007122150190100.htm>>. And on Libya, see "Russia, Libya in Nuclear Talks," *AFP*, December 24, 2007 <<http://www.thetimes.co.za/News/Article.aspx?id=668601>>; and "Lavrov Talks Business with Libya," *AFP*, December 25, 2007 <http://www.times.spb.ru/index.php?story_id=24595&action_id=2>.

³⁸ On Saudi Arabia, see "Russia Could Help Saudi in Atomic Energy-Putin," *Reuters*, February 12, 2007 <<http://www.alertnet.org/thenews/newsdesk/L1239787.htm>>.

³⁹ See Arshad Mohammed, "Rice Questions Why Saudis Might Need Nuclear Energy," *Reuters*, December 15, 2006 <<http://www.alertnet.org/thenews/newsdesk/N15381274.htm>>; and "Secretary of State Condoleezza Rice's Interview with *Reuters*," U.S. Department of State, December 16, 2006 <<http://www.state.gov/secretary/rm/2006/77908.htm>>.

⁴⁰ For example, see Dan Murphy, "Middle East Racing to Nuclear Power," *Christian Science Monitor*, November 1, 2007 <<http://www.csmonitor.com/2007/1101/p01s03-wome.html>>.

On a related note, France has already offered civil nuclear cooperation to China, Morocco, Tunisia, Algeria and Libya, and is now wooing Egypt, Saudi Arabia, Qatar, and the United Arab Emirates. See James Mackenzie, "France to Lend Egypt Nuclear Hand," *Reuters*, December 29, 2007 <<http://www.arabianbusiness.com/507080-france-to-lend-egypt-nuclear-hand>>. See also Tamara Walid, "Nuclear Power: A Gift or a Curse?," *Arabian Business*, January 4, 2008 <<http://www.arabianbusiness.com/507458-nuclear-power-a-gift-or-a-curse?ln=en>>.

⁴¹ "US and Russia Sign Plan for Russian Plutonium Disposition," press release, Department of Energy, November 19, 2007 <<http://www.energy.gov/news/5742.htm>>.

⁴² For example, see Edwin Lyman and Frank N. von Hippel, "Reprocessing Revisited: The International Dimensions of the Global Nuclear Energy Partnership," *Arms Control Today*, April 2008 <http://www.armscontrol.org/act/2008_04/LymanVonHippel.asp>.

⁴³ For more on GNEP, visit <http://www.gnep.energy.gov/>. In a fact sheet, the White House claims: "Under the Global Nuclear Energy Partnership, America will work with nations that have advanced civilian nuclear energy programs—such as France, China, Japan, and Russia.... to provide the cheap and safe energy growing economies need, while reducing the risk of nuclear proliferation and avoiding greenhouse gas emissions." See "Fact Sheet: Expanding the Safe Use of Nuclear Power," Office of the Press Secretary, White House, June 21, 2007 <<http://www.whitehouse.gov/news/releases/2007/06/20070621.html>>.

- Russia *someday* to import, store and perhaps even reprocess U.S.-origin spent nuclear fuel; and
- both countries to establish national or multinational fuel-making centers that would produce, among other things, supposedly more “proliferation resistant” MOX fuels.

Still, Bush’s GNEP program is many years away—the DoE says at least “15 or so years” —from being ready for commercialization.⁴⁴ Such unproven programs for nuclear expansion also may exacerbate problems of nuclear proliferation by encouraging worldwide commerce in and stockpiling of weapons-ready or near-weapons-ready plutonium and MOX.

In the short term, U.S.-Russian civil nuclear cooperation will likely not yield much, if any, immediate bilateral nuclear commerce, especially since U.S. suppliers will not export their nuclear goods to Russia until the Russian government overcomes the many difficulties it has faced in establishing a full legal regime to address issues of nuclear insurance and liability.⁴⁵ Although Russia has signed and ratified the *Vienna Convention on Civil Liability for Nuclear Damage*, private nuclear firms in the U.S. have told the U.S. government that that they will not risk their own capital and make commercial sales to Russia until Moscow ratifies the *Convention on Supplementary Compensation for Nuclear Damage*.⁴⁶

II. Questions

It remains unclear how smoothly the transition to the next “co-equal” phase of U.S.-Russian civil nuclear relations will be. This will depend critically on the answers to the following five sets of questions, which track the five new developments noted in the introduction:

- *U.S.-Russian Strategic Partnership*: Is any U.S.-Russian “strategic partnership” viable if Washington’s current disputes with Moscow over America’s NATO-approved deployment of missile defenses in Eastern Europe, and NATO’s plans to expand its membership to Georgia and the Ukraine persist? Can the strategic partnership continue to ignore Russia’s continued assistance to Iran’s nuclear and nuclear-capable missile programs? How critical is Russian cooperation to the commercial

⁴⁴ See Committee on Review of DOE’s Nuclear Energy Research and Development Program, National Research Council, *Review of DOE’s Nuclear Energy Research and Development Program* (Washington, DC: National Academies Press, 2007), esp. “Minority Opinion: Dissenting Statements of Gilinsky and Macfarlane,” pp. A1-A6 <<http://www.nationalacademies.org/morenews/20071029.html>>.

⁴⁵ For an article summarizing the status of Russian nuclear liability insurance law from a Russian perspective, see Alexander Alexandrovich Matveev, “The Russian Approach to Nuclear Liability,” *International Journal of Nuclear Law*, Vol. 1, No. 3 (August 21, 2006), pp. 270-286. Matveev works in the legal department of Russia’s foreign ministry. See also *Need for Foreign Liability Insurance* (Glastonbury, CT: American Nuclear Insurers, March 2006) <<http://www.amnucins.com/library/Need%20for%20Foreign%20Nuclear%20Liability%20Insurance.pdf>>; and Jack Spencer, “Russia 123 Agreement: Not Ready for Primetime,” Web Memo No. 1926 (Washington, DC: Heritage Foundation, May 15, 2008), esp. pp. 2-3 <http://www.heritage.org/Research/EnergyandEnvironment/upload/wm_1926.pdf>.

⁴⁶ See Letter Sent to the Departments of State, Energy and Defense by Harmon, Wilmot & Brown, LLP, on Behalf of the Contractors International Group on Nuclear Liability (CIGNL), December 18, 2003, which appears as Appendix II to Henry Sokolski, “The U.S.-Russia Nuclear Cooperation Agreement: The Case for Conditioning,” prepared statement for *Russia, Iran, and Nuclear Weapons: Implications of the Proposed U.S.-Russia Agreement*, hearing before the House Committee on Foreign Affairs, June 12, 2008 <<http://www.npec-web.org/Testimonies/20080612-Sokolski-HCFA-USRussia-PreparedTestimony.pdf>>.

For more on the *Convention on Supplementary Compensation for Nuclear Damage* of 1997, see International Atomic Energy Agency, INFCIRC/567, July 22, 1998.

<<http://www.iaea.org/Publications/Documents/Infcircs/1998/infcirc567.shtml>>.

development of nuclear power globally? How much can Moscow continue to compete strategically and commercially against the interests of the U.S. and its allies without causing a rupture in the U.S.-Russian strategic partnership?

- *U.S.-Russian Civil Nuclear Cooperation:* How urgent is implementation of a formal U.S.-Russian nuclear cooperative agreement? Will delaying or conditioning such cooperation prevent the timely realization of critical objectives (e.g., nonproliferation initiatives)? Will implementation of a formal U.S.-Russian nuclear cooperative agreement require Congress to appropriate more funds than would otherwise be the case (e.g., for joint Global Nuclear Energy Partnership programs)? If so, how much? Also, what Iranian nuclear and defense programs are Russian scientists actually assisting? Will the Senate pass or not enact S. 970 or other legislation similar to H.R. 1400 that would ban formal nuclear cooperation with Russia until Moscow ends assistance to Iran’s nuclear, advanced conventional military, and missile programs? What diplomatic risks might arise by conditioning the deal with regard to U.S.-E.U. missile defense, NATO expansion or other non-nuclear issues?
- *The Future of U.S.-Russian “Donor-Recipient” Nuclear Assistance:* Should Washington adjust donor-recipient nuclear collaboration programs—such as the Department of Defense’s Cooperative Threat Reduction and the Department of Energy’s Defense Nuclear Nonproliferation initiatives—to account for Russia’s new hydrocarbon-driven wealth and sometimes less-than-accommodating foreign and military nuclear policies? What precautions and adjustments should the U.S. take to ensure that programs related to nuclear assistance do not in any way aid Russia in increasing its nuclear weapons-making capability, or fund Russian efforts to assist the nuclear programs of problem states like Iran?
- *Securing America’s Nuclear Fuel Market:* How dependent should U.S. nuclear utilities allow themselves to become on Russian low enriched uranium (LEU) imports? Do proposed arrangements to allow more Russian LEU imports outside of the “Megatons-to-Megawatts” program raise any energy security concerns? Should Washington require Moscow to continue blending-down high enriched uranium (HEU) after the “Megatons-to-Megawatts” program expires in 2013 as a condition for modifying the antidumping restrictions that have restricted the import of Russian LEU fuel? How much military HEU should the U.S. be blending down for American civilian reactors? Should the U.S. favor Russia building an enrichment plant in the U.S.? How might the implementation of this agreement affect the economic viability of the United States Enrichment Corporation, the URENCO production effort in New Mexico, and other domestic nuclear fuel-making projects?
- *U.S.-Russian Global Promotion of Civil Nuclear Energy:* To the extent that Washington does not wish nuclear technologies to spread indiscriminately, how can it clarify what the U.S., Russia and other nuclear suppliers should—and should not—be doing to promote civil nuclear energy globally? Will America’s Global Nuclear Energy Partnership and Russia’s Global Nuclear Infrastructure Initiative arrest or unwittingly encourage the spread of weapons-making capabilities to conflict-ridden regions such as the Middle and Far East? Should the U.S. alter decades of policy against encouraging and participating in commerce of plutonium-based fuels?