## Halting Russian Aid to Iran's Nuclear and Ballistic Missile Programs

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#### **ABOUT THE AUTHORS**



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# Brief Analysis

This past weekend, Vice President Gore and the President's special envoy on Russian-Iranian proliferation issues, Ambassador Frank Wisner, arrived in Moscow to meet with Russian Premier Viktor Chernomyrdin and other senior officials. Topping the agenda was a subject of growing concern for U.S. policymakers: Russia's deepening involvement in the proliferation of nonconventional weapons, related technologies and missiles to Iran. In previous meetings, Gore, Wisner and others have expressed their concerns over Russia's ongoing assistance to Iran's civilian nuclear program, and intelligence indicating that state-owned firms are transferring to Iran technology and know-how related to the production of missiles. While the United States has had some success in its efforts to pare back Russian civilian nuclear cooperation with Iran, cooperation in the missile field has, until now, continued unabated.

Progress in the Nuclear Realm... In a January 1995 nuclear cooperation accord, Russia agreed to provide Iran with one VVER-1000 reactor to be built at Bushehr, low-enriched uranium fuel, and training for personnel to operate the reactor; an option to purchase a 50 MWt light water research reactor, a gas centrifuge enrichment plant, 2,000 tons of natural uranium, and training for 10-20 Iranians at the graduate and Ph.D. level); and to consider the transfer of low power (less than 1 MWt) training reactors, a nuclear desalination plant, and help developing a uranium mine. The fulfillment of this agreement would have greatly augmented Iran's overt nuclear infrastructure. However, the United States was able to convince Russia to suspend implementation of major parts of the accord. Moscow agreed, inter alia, not to provide the research reactor or the gas centrifuge enrichment plant (the components that posed the most immediate proliferation risk), and to stipulate that spent fuel from the power plant be returned to Russia. Work on the Bushehr reactor has gone forward and it is expected to be completed by the year 2000.

> While the type of reactor Russia is building for Iran at Bushehr is not ideal for producing fissile material for a weapons program, reactor grade plutonium can nonetheless be used to create a bomb (both France and the USSR used nuclear power plants to produce plutonium for their respective nuclear weapons programs). Pressurized water reactors are prodigious producers of plutonium, and though Russia has agreed to take back Iran's spent fuel, at any given time there is likely to be very large quantities of it in cooling pools in Iran, awaiting transport. A decision by Iran to violate its Nuclear Nonproliferation Treaty obligations by using the spent fuel for bomb building could thus

endow it with potentially large quantities of plutonium.

This past weekend, Russian Atomic Energy Minister Viktor Mikhailov tried to address some of these concerns by proposing to U.S. Energy Secretary Frederico Pena, who was in Moscow with Gore, that Russia and the United States work out a joint system for monitoring activities at the reactor. Tehran is unlikely to accept such a monitoring regime; indeed, a foreign ministry spokesman has already rejected the offer. Even if Iran were to accept it, however, such a scheme would not solve the problem posed by this reactor. Iran could use experience gained at Bushehr in a clandestine program, it could expel Russian and American inspectors at some later date, or it could use Bushehr to draw attention away from a clandestine effort located elsewhere. For these reasons, the United States is still trying to convince Russia to cease work on the reactor, despite its lack of success to date. The replacement of Atomic Energy Organization of Iran head Reza Amrollahi by former Oil Minister Gholamreza Aghazadeh earlier this month lends urgency to these efforts. Amrollahi was widely believed to be incompetent, and under his tutelage, Iran's nuclear weapons program is believed to have made little progress. Aghazadeh, by contrast, is a highly regarded technocrat and manager, whose appointment could reinvigorate the program.

...Problems in the Missile Arena: Iran has been trying since the mid-1980s to acquire a missile production capability, albeit with little success thus far. The Iranian missile program has been plagued by various bottlenecks, including a shortage of skilled personnel, special materials, technological expertise, and adequate financing. This may be changing, however, with Russia's emergence in the last year or two as a major benefactor of Iran's efforts to develop missiles with a range of 1,300-1,500 km.

Iran is reportedly building two liquid-fuel systems based on the North Korean Nodong-1 missile that incorporate Russian and Chinese technology. These missiles have been referred to in some press reports as the Shihab-3 and -4 (the former with a reported maximum range of 930 miles, the latter 1,240 miles). In April, Iran conducted a static ground test of the motor for one of these missiles, indicating that work has gone beyond the design stage. Russian entities reportedly involved in this effort include the Russian Space Agency, Rosvoorouzhenie (the state arms-export agency), the Bauman Institute, NPT Trud (a rocket-motor manufacturer), Polyus (a laser manufacturer), and the Russian Central Aerohydrodynamic Institute. These entities have reportedly provided help in the design of nose cones and guidance and propulsion systems, provided components (such as gyroscopes) from dismantled SS-4 ballistic missiles as well as blueprints of the missile, and are engaged in the construction of a wind tunnel for missile design purposes. Such assistance would clearly violate Missile Technology Control Regime (MTCR) guidelines. Iran is also believed to have a parallel solid- fuel missile program it is undertaking with Chinese help. This missile has been referred to in some press reports as the Zelzal-3 and it is reported to have a maximum range of about 1,500 km.

Even with Russian help, Iran would have difficulty overcoming shortcomings and integrating technologies from disparate sources to create hybrid missiles based-in the case of the liquid-fuel effort-on an unproven design (the Nodong-1 has been flight tested only once, but not at maximum range). Nonetheless, the introduction of Iranian missiles capable of reaching Israel, Egypt, and Central Europe would open a new and dangerous phase of the Middle East arms race, enhance Tehran's ability to threaten America's Israeli, Arab, and European allies, and constrain American power projection capabilities in the region. For this reason, Vice President Gore's statement in Moscow on Tuesday that he believes that "Russia is serious about wanting to rein-in any unauthorized missile technology exports" is reassuring, though it remains to be seen in the coming weeks what steps Russia will take in this regard.

Conclusions: The United States should take heart from its experience in dealing with Russian nuclear cooperation with Iran, where progress was made through persistent, quiet contacts at the highest levels of government. Success, however, will be judged by actions, and there is still unfinished business: the United States needs to continue its efforts to quash the Bushehr reactor deal, and to halt all cooperation in the missile field-and soon. The fact that Russia has no interest in transferring missile technology to Iran that might someday enable the latter to target

Moscow, and that Russia's activities in this area violate its MTCR commitments, gives reason for hope that a similar, discreet, high-level multilateral effort-that includes America's European, Arab, and Israeli allies-might succeed in convincing Moscow to abandon its current course. If, however, tangible progress is not made in the coming weeks, Washington should consider alternative means at its disposal-including sanctions against Russian firms involved in this trade.

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Policy #267

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