Russian Nuclear Forces in Ten Years with and without START II

Pavel Podvig
October 1999
PONARS Policy Memo 92
Moscow Institute of Physics and Technology

In recent months the United States and Russia have made an attempt to revive the arms control dialogue. But instead of bringing a solution to the problems that hold up nuclear disarmament, this attempt has done nothing but expose the huge gap between the positions of the two countries on the most contentious issues, missile defense and START II ratification.

The United States began the recent round of consultations with the firm intention of seeking an agreement on changing the ABM Treaty. Russia responded with strong opposition to the idea of treaty modification. That was a retreat from the position expressed in the June 21, 1999, Cologne presidential statement, which stated that Russia and the United States would consider "possible proposals for further increasing the viability of this treaty." In fact, after the Cologne statement the Russian military, faced with the possibility of Yeltsin's signing a treaty-modifying agreement without their consent, stepped up their rhetoric against ABM-Treaty modification. It is no longer limited to "adequate measures" that Russia would have to take in response to the US abrogating the ABM treaty, but also includes the possibility of Russia declaring itself free of START I obligations. The START II ratification process was all but brought to a halt. It is quite likely that the United States will eventually make a decision to deploy a National Missile Defense. Russia seems resolved to counter such a decision with some "adequate measures," principally suspending strategic arms reductions at the START I level. This possibility has been considered during the START II debate, but was usually discounted as unrealistic since the Russian strategic forces will decline to levels much lower than those of START I (or START II), regardless. Russia, however, seems to be willing to take the risks associated with such a decision. This paper is an attempt to analyze the capabilities that Russia would have should it decide to stay at the START I level.

The Strategic Forces Development Program of 1998

As of the end of 1999, Russia has almost 6,000 strategic nuclear warheads, most of which are deployed on MIRVed land-based missiles that will have to be eliminated if the START II treaty enters into force. Most of these weapon systems were deployed during the 1980s, so they will soon reach the end of their operational lives.

In July 1998 the Security Council approved a strategic forces development program. The details of the program have never been made public, but it is not that difficult to reconstruct it, since the choice of options that Russia has is quite limited. Although the outcome of the START II ratification debate is still unclear, the strategic force development program is apparently based on the assumption that the treaty will eventually enter into force. Accordingly, it includes no measures that would extend the service lives of the currently deployed MIRVed ICBMs, nor does it include preparations for development of a new multiple-warhead land-based missile. Instead, the emphasis is put on development of START II-compliant systems.

The main strategic system that will be produced in Russia is the SS-27 Topol-M single-warhead ICBM. The development of this missile is several years behind schedule, mainly due to lack of financing, so predictions about production rates are rather unreliable. The first two missiles entered into service at the end of 1997, and eight more were added a year later. Ten more are expected to be deployed by the end of 1999. According to the government plan, the production rate will gradually increase from the current ten missiles a year to the level of 40&endash;50 missiles annually. We assume that Russia will be able to produce about 300 Topol-M missiles by the end of 2008.

Another strategic system under development is a new missile submarine. The keel of the lead ship of a new class, Yuri Dolgoruki, was laid at the end of 1996. According to the initial plan, the submarines of that class would accommodate the R-39UTTH missile, which was developed as a follow-on to the R-39 SLBM (SS-N-20). The same missile was to be deployed on Typhoon submarines that soon will be left without missiles because the currently deployed SS-N-20 SLBMs have reached the end of their operational lives and their production was discontinued. However, after a series of test failures the development of the R-39UTTH missile was cancelled and the decision was made to begin development of a new SLBM that is to be deployed on the new submarines of the Yuri Dolgoruki class. The construction of the submarine was suspended since it has to be designed to accommodate the new missile.

This decision apparently leaves Typhoons without missiles to be deployed on them. Three of the six Typhoon submarines have already been decommissioned and the other three will most likely be decommissioned in a year or two. In addition, the decision to begin development of a new SLBM means that the new submarine will not enter service until at least 2007&endash;2008. In an optimistic scenario, the new submarine will be introduced in time to replace Delta IV ships as they will be reaching the end of their service lives.

Russian strategic aviation has survived attacks calling for its elimination and is showing signs of revival. The program approved in 1998 apparently calls for continuing development of a new air-launched cruise missile that will be deployed on strategic bombers. Development of a new strategic bomber is not necessary, since the currently deployed Tu-95MS and Tu-160 were built in the late 1980s-early 1990s and could probably stay in service until at least 2010. In recent months the Russian government decided to resume negotiations with Ukraine about buying the Tu-160 and Tu-95MS

bombers that were left there when the Soviet Union dissolved. Although it is not clear how many of the 19 bombers could be recovered, the military would like to transfer 8 Tu-160 and 3 Tu-95MS planes. In addition to that, strategic aviation could get as many as six Tu-160 bombers, the construction of which was suspended in 1992.

Although these plans may sound impressive, Russia will not be able to match US strategic forces. Indeed, Russia will have serious problems reaching the limit set forth in the START II treaty. The number of strategic warheads that Russia could deploy in 2008 is about 1,300 (on 300 Topol-M ICBMs, seven Delta IV submarines, and about 80 bombers). This means that Russia will have problems reaching not only the START II levels of 3,000&endash;3,500 warheads, but also the lower level of 2,000 warheads that was set as a target for the follow-on START III treaty.

What if START II is Not Ratified?

The situation will be different if Russia does not ratify START II. This would allow Russia to keep its MIRVed land-based missiles. Although most of these missiles will reach the end of their service life by 2005, there are exceptions that would allow Russia to sustain its land-based missile force at levels higher than those allowed by the START II Treaty. (The sea-based missile force and strategic aviation will not be affected by the outcome of START II ratification.)

The system that Russia will be able to keep if START II does not enter into force is the latest modification of the heavy SS-18 missile, known as R-36M2 or RS-20V. Deployment of these missiles began in 1988 in silos in Kazakhstan. The last missiles were shipped to Russia from Ukraine in 1992 after the breakup of the Soviet Union.

Although the exact number of the R-36M2 missiles has never been made public, some sources report that 58 of these missiles are deployed. The total number of available missiles is certainly higher, since all of the 104 SS-18 missiles withdrawn from Kazakhstan were R-36M2s. If necessary, some of them could be deployed on Russian territory to replace the previous modification of SS-18&endash;R-36MUTTH.

Among other options that would be available for Russia if it does not ratify the START II Treaty is the deployment of about 30 SS-19 missiles that were withdrawn from Ukraine. These missiles--unlike the SS-18 R-36M2 deployed in Kazakhstan--were never fueled, so they could stay in service for almost twenty years from the time they are deployed. The SS-19 option has another advantage--SS-19 missiles were produced in Russia (at the Khrunichev plant in Moscow), while SS-18s were made in Ukraine.

Our estimates show that if Russia makes a decision to keep its MIRVed land-based missile force, it could deploy at least 90 SS-18 R36M2 missiles (each carrying 10 warheads), and about 30 SS-19 missiles (6 warheads each), all of which could stay in service until at least 2010. In addition, Russia could test the SS-27 Topol-M missile in a

three-warhead configuration, which would further increase the number of ICBM warheads and bring the total number of strategic weapons to the level of 3,000 warheads.

It should be noted that in the short run this option would not require any major efforts or investment beyond those Russia is currently planning. Extension of missile service lives could be done relatively easily, and the Soviet Union had experience doing so. All other programs, such as development of new SLBMs and construction of submarines and bombers, will not be affected.

The biggest problem with this option is that to keep the number of warheads at the level of 3,000, Russia will need a new MIRVed land-based missile that would replace the SS-18 when the latter reaches the end of its operational life. The prospect of Russia developing and deploying such a missile may seem unrealistic today, given the state of the economy. However, Russia has some relatively inexpensive options that could be realized in the timeframe of five years. One of them would be development of a missile based on the SS-24 and SS-N-20 design (these missiles share the first stage, production of which was transferred to Russia after the Soviet breakup). Another, probably more realistic possibility would be to step up the production of three-warhead Topol-M missiles. In the end, Russia could probably sustain its strategic forces at the level of 3,000 warheads after the year 2008, although an increase of this number is rather unlikely.

Conclusions

Now that the United States seems more determined than ever to go ahead with National Missile Defense development, the ratification of START II is getting less and less likely. In spite of that, Russia seems to be ready to abide by the treaty terms, at least while the United States stays within the limits of the ABM Treaty.

If the United States eventually makes an NMD development decision, it would almost certainly violate the ABM Treaty and prompt a response from Russia. Our analysis shows that although the set of options available to Russia is really limited by its difficult economic conditions, it could keep its forces at the level of about 3,000 warheads. There is no doubt that should the United States abrogate the ABM Treaty, Russia will respond by MIRVing its SS-27 Topol-M missiles, and may start development of a new MIRVed missile.

Russia's withdrawal from the START I Treaty seems unlikely, since virtually all measures that Russia could take are START I-compliant. Besides, such a step would require a determined political decision of the kind Russia's leadership does not seem capable of making.