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**RECOMMENDATION: A PHASED APPROACH  
FOR IMPROVING NUCLEAR SAFETY  
AND U.S.-RUSSIAN RELATIONS**

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Which of the 10 options examined in the previous chapter show the most promise? And how should they be incorporated into a strategy for improving nuclear safety? In our view, a successful strategy for limiting nuclear dangers requires both operational changes in the U.S. and Russian nuclear postures and improvements in the level of trust and cooperation between the two nations. This should be a mutually reinforcing process in which near-term improvements in nuclear safety build confidence and trust between Russia and the United States, thereby enabling more extensive steps in the medium and long term. These dynamics lead us to recommend a phased approach.

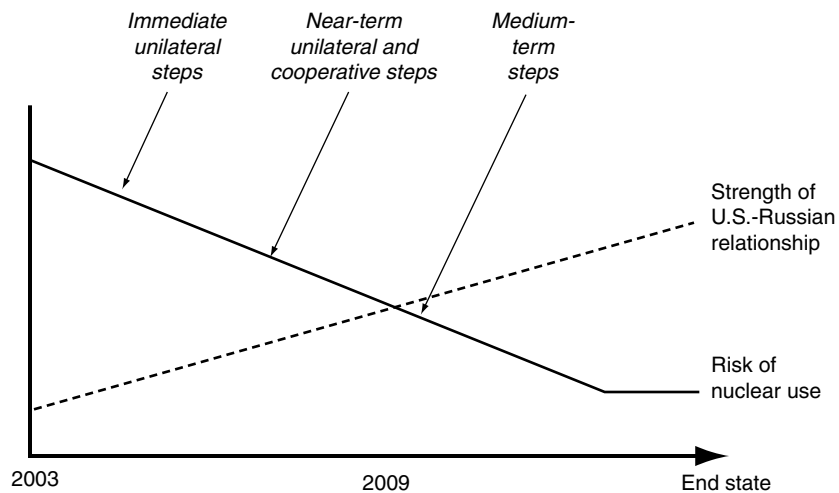
Our long-term vision is a U.S.-Russian relationship in which neither country views the other as a nuclear threat. The current relationship between Britain and France is an illustration of this end state. Both are nuclear powers with divergent views on some issues, yet neither would consider using nuclear weapons or even military force against the other to settle a dispute.

Reaching this long-term goal will be difficult, but that is no reason for complacency about nuclear safety issues. As discussed throughout this report, the danger of accidental or unauthorized launch remains a serious problem despite improvements in U.S.-Russian relations. This danger has been heightened by the deterioration of Russia's early-warning system, Russia's economic difficulties, and the continuing U.S. reliance on a damage limitation nuclear strategy. Due to

the serious nature of this problem, we recommend that the United States take immediate actions to begin the process of improving nuclear safety as part of what we call a “Nuclear Safety Initiative.”

The initiative would begin with a series of unilateral U.S. actions taken to demonstrate both U.S. commitment to reducing nuclear dangers and U.S. interest in a new nuclear relationship with Russia. At the same time, the United States would commit itself to further actions aimed at increasing nuclear safety that would require some time to implement. The hope is that Russia will respond with unilateral actions of its own, but this is not a requirement, at least in the first phase, because the U.S. intention would be to demonstrate that nuclear weapons are diminishing as a factor in its relations with Russia. Unilateral actions would be followed by negotiations between the United States and Russia on further steps that could be taken in the near term to improve nuclear safety. The expectation is that the near-term steps will lead to more-extensive and far-reaching steps to reduce nuclear danger in the medium and long term.

Figure 5.1 graphically illustrates our approach. Starting from today, a series of immediate, unilateral actions are taken to improve nuclear



**Figure 5.1—Phased Approach for Improving Nuclear Safety and U.S.-Russian Relations**

safety. At the same time, the United States commits itself to undertake further near-term actions over the next two to three years that would take additional time to implement. This leads to both a reduction in nuclear risk and a strengthening of U.S.-Russian relations by reinforcing the notion put forth by President Bush that U.S. weapons are no longer intended for Russia. Building on the initial steps, additional actions requiring both nations' consent in the medium term (five to seven years from today) could further reduce nuclear risks and further improve U.S.-Russian relations. If relations continue to evolve in a positive direction in other dimensions as well—including increased trade and cooperation against terrorism—it may be possible to consider additional nuclear safety measures that seem too difficult or risky today.

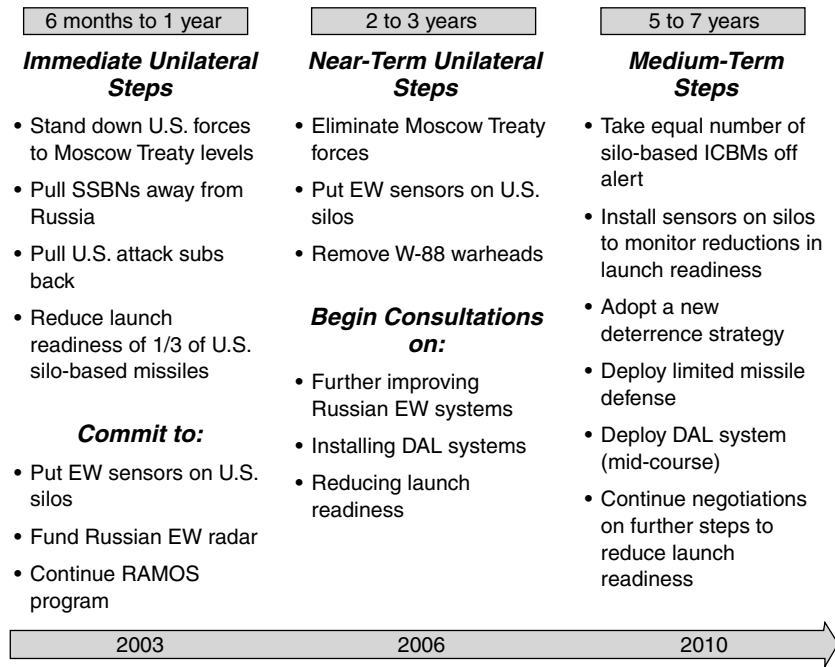
The timing suggested in Figure 5.1 is notional. From our vantage point today, it appears to be reasonable. But progress could be faster if conditions and leadership allow.

After evaluating all of the options detailed in Chapter Four, we organized the ones we believe to be the most promising according to four criteria: (1) How much will the option contribute to nuclear safety or improved relations? (2) How long will the option take to implement technically? (3) What previous steps (if any) need to be taken before the option can be implemented? (4) How much would U.S.-Russian relations need to improve before both countries felt comfortable implementing the option? Figure 5.2 illustrates our recommended approach for the first three phases of the Nuclear Safety Initiative.

## **IMMEDIATE STEPS**

The United States should take the following four immediate actions to improve nuclear safety: stand down U.S. nuclear forces to the levels specified in the Moscow Treaty, pull Trident ballistic missile submarines away from Russia, pull attack submarines away from Russia, and reduce the launch readiness of one-third of U.S. silo-based missiles. All four actions can be taken quickly and unilaterally by the United States.

At the same time, the United States should commit itself to several other steps that would take some time to implement, either because they are technically difficult or because Russian participation is re-



NOTE: SSBN = ballistic missile submarine; EW = early warning; DAL = destruct after launch; RAMOS = Russian-American Observational Satellite.

**Figure 5.2—Potential Steps for Improving Nuclear Safety, 2003–2010**

quired. The most important issue, in our view, is improving Russia’s access to reliable, accurate early-warning information. As a result, we believe the United States should commit to putting early-warning sensors on all its silos, funding Russian early-warning radar stations, and continuing the cooperative Russian-American Observational Satellite (RAMOS) program.<sup>1</sup> It is even more critical, in our view, that the United States try to persuade Russia to agree to joint early-warning sensors on silos. This would enhance the unilateral efforts that the United States had committed to in order to provide Russia

<sup>1</sup>After careful consideration, we decided against recommending the launch of additional Oco satellites. While they would provide some additional coverage, their limitations keep them from providing a permanent solution to Russia’s early-warning problems.

with greater information about the status of U.S. ICBM forces. The silo-based monitoring system could also become an important test-bed for exploring ways to monitor the launch readiness of nuclear forces.

Taken together, these actions and commitments will send an immediate signal to Russia that the United States is truly interested in nuclear safety and in establishing a new U.S.-Russian relationship in which nuclear weapons do not play an important role.

Our hope is that Russia will respond with unilateral actions of its own, standing down the forces that it plans to eliminate under the Moscow Treaty and promising to keep its ballistic missile and attack submarines away from U.S. coasts. Russia may also respond by becoming open to discussion about improving its early-warning systems.

#### **NEAR-TERM STEPS**

The immediate steps could be followed by steps taken over the next two or three years. For these, near-term steps, the United States would fully implement its earlier commitments, such as eliminating all forces it had stood down, placing sensors on all of its silos, having Congress approve money for improving Russian early-warning radar satellite capabilities, and removing W-88 warheads.

The United States and Russia could also begin consultations or negotiations of varying degrees of formality covering a broad range of nuclear safety issues. The most important issues, in our view, are further steps to improve Russia's access to early-warning information and steps to reduce the launch readiness of nuclear forces. As noted in the discussion of Option 7 (see Chapter Four), reaching agreement on launch readiness reduction will be extremely complex and difficult. Any progress in this area is likely to be made in small steps, perhaps starting with silo-based missiles. Russia, because of its current dependence on land-based missiles, is very sensitive to any steps it believes will make its forces more vulnerable to attack. This does not mean that launch readiness reduction is impossible, but merely that a good deal of mutual trust will be needed to make it a reality, particularly for far-reaching proposals that affect all nuclear forces. The

United States and Russia should begin discussions on measures to reduce launch readiness at this time.

Another near-term step is that of beginning discussions on how to implement a destruct-after-launch (DAL) system. We recommend that a midcourse DAL system capable of disabling the reentry vehicles be considered. Although such a system is more complicated than a boost-phase system, it provides an additional 15 to 20 minutes of decision time, compared to the latter's 3 to 5 minutes. We are aware, however, that once discussions begin, the technical difficulties of setting up a DAL system (for example, reengineering reentry vehicles and changing the yield on nuclear weapons) may prove difficult to overcome.

### **MEDIUM-TERM STEPS**

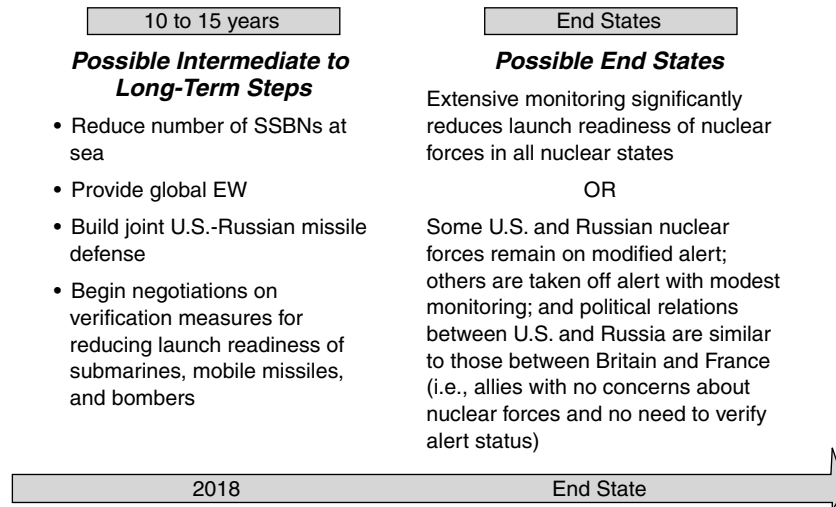
Within five to seven years (the medium term), additional steps to improve nuclear safety may be possible. By this time, the difficult negotiations on reduced launch readiness may begin to bear fruit. We believe that simple, straightforward steps are needed, ones that can then be expanded, if and when appropriate, to include more forces and more-difficult platforms. It is hoped that the U.S. willingness to immediately reduce the alert rate of 150 missiles as an immediate step will serve as an important impetus for getting this process started. To this end, the first step we recommend here is for Russia and the United States to place an equal number of silos (around one-third of the U.S. ICBM fleet, or 150 silos) off alert. For the United States, these will be in addition to the 150 silos it took off alert in the first phase, at the start of its efforts to improve nuclear safety. The sensors used to monitor the silos would be slightly modified versions of the early-warning sensors placed on the silos earlier (see Option 2 in Chapter Four). The second area in which consultations may have borne fruit by this time is a consensus that a DAL system will (or will not) improve nuclear safety and perhaps some agreement on the best way for each country to proceed.

During this medium-term period, the United States might also take two unilateral actions to continue improving nuclear safety. First, if the United States and Russia have achieved a greater level of trust, the United States may be able to adopt a new deterrence posture, one that involves moving away from a nuclear posture based on

rapid counterforce attacks against Russia and placing greater emphasis on a nuclear doctrine that is more flexible and not as time sensitive. Second, by the 2007–2009 timeframe, the United States may be ready to begin deploying a limited national missile defense—a step that could improve nuclear safety, but only if it were effective against a limited number of Russian missiles and did not adversely affect relations with Russia.

### POSSIBLE INTERMEDIATE- TO LONG-TERM STEPS

Implementation of the options will be affected by the direction of U.S.-Russian relations and other geostrategic issues that might affect the two nations’ nuclear postures. Given the uncertainty, we cannot recommend specific intermediate- to long-term steps (next 10 to 20 years) for improving nuclear safety. However, to reach an end state in which launch readiness is significantly reduced, a series of steps will have to be taken. Figure 5.3 provides a general framework for nuclear safety steps that could be implemented during the second decade of the 21st century. The important point is that any steps taken in the



NOTE: SSBN = ballistic missile submarine; EW = early warning; DAL = destruct after launch.

Figure 5.3—Potential Steps for Improving Nuclear Safety, Beyond 2010

next decade will have to build on progress made during the current decade.

As noted previously, negotiations to reduce launch readiness are likely to continue for an extended period of time. If silo monitoring and reduction of launch readiness are successful, Russia and the United States might contemplate including other systems, such as mobile missiles and submarines, in future plans. To further induce Russia to agree to additional reductions in launch readiness, the United States could trim the overall size of its at-the-ready deterrent by reducing the number of Trident submarines it keeps at sea.

Two other joint steps are possible in the intermediate to long term. First, if the United States and Russia prove successful at working together on early-warning issues, they could consider setting up a global early-warning system. The United States and Russia might be able to jointly provide information to an early-warning center in any country that wants it. This could be particularly helpful in South Asia, where China, India, and Pakistan lack any real early-warning system and where the potential for accidental or unauthorized use of nuclear weapons is high. The United States also might consider working with Russia on a joint missile defense system.

### **POSSIBLE END STATES**

If nuclear safety continues to be an important objective over the long term, two end points are possible for U.S. and Russian nuclear forces. The first is a world in which all nuclear powers keep their nuclear forces at extremely reduced levels of launch readiness. In this world, all nuclear forces would be extensively monitored to ensure that no nation could quickly raise the alert level of its forces and thereby gain an advantage. Obviously, this world would require that the United States and Russia reach agreement with all of the other nuclear powers, which is why it seems unlikely to come about.

The second possibility is a world in which the United States and Russia keep a small number of their forces on a modified level of alert and their remaining forces off alert. This arrangement would serve as a minimal deterrent to attack by another nuclear-armed state. However, this world requires that U.S.-Russian relations resemble those of Britain and France today. In other words, neither

country would be concerned about the size and posture of the other's forces, and no monitoring or verification would be required. Like France and Britain, the United States and Russia would each be capable of launching a nuclear attack on the other, but for all practical purposes such an attack would be unthinkable. In terms of nuclear safety, the danger posed by the U.S. and Russian forces would be greatly reduced from what it is today.

## CONCLUSION

The phased approach to the Nuclear Safety Initiative that we recommend here is based on the premise that nuclear safety, U.S.-Russian relations, and U.S. security more broadly are inextricably linked. Progress in one area will improve the situation in another. Given the improving relations between Russia and the United States and the emerging security context for the United States, there is now a historic opportunity to address one of the more vexing problems left from the Cold War: how to reduce the risk of accidental or unauthorized nuclear use to as close to zero as possible.

President Bush has signaled a strong desire to pursue a "new strategic framework" that will remove nuclear weapons as part of the equation for U.S.-Russian relations. With a series of bold unilateral moves, he could demonstrate his seriousness and, at the same time, improve nuclear safety by reducing Russian anxiety about U.S. capabilities and intentions. These moves could have a positive effect on U.S.-Russian relations, one that could set the path to further improve nuclear safety and to enhance U.S. security in other important areas, such as nonproliferation and counterterrorism.

Nuclear safety cannot be improved, however, without a sustained, coordinated effort. That effort must start with Presidential commitment and leadership. Moreover, the complexities involved suggest that the U.S. and Russian militaries will have to work closely together to achieve success.