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National Missile Defense and Disarmament

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My name is David Wright. I'm a physicist and I work with the Union of Concerned Scientists and also the MIT Security Studies Program. I'm going to change gears here a little bit and, instead of talking about the Comprehensive Test Ban Treaty, talk about U.S. plans to build national missile defenses and what effect that could have on attempts to reduce nuclear weapons.

As you probably know, the U.S. is developing a national missile defense system. The goal of that system is to defend against limited missile attacks against the United States. These limited attacks are defined as either accidental or unauthorized launches from Russia, which some people argue would be a relatively small attack, an attack from China, or perhaps an attack by tens of missiles from a country like North Korea, Iran, or Iraq. The goal would be to deploy the first phase of the system by 2005 or 2006, with the full system deployed by maybe 2011 or 2012. President Clinton plans to decide this fall whether or not to take the initial steps to deploy this system, based on four criteria: (1) the status of the missile threat against the United States; (2) the monetary cost of the system; (3) whether or not the technology is ready to build such a system; and (4) what the strategic consequences of building a system would be, including some of the issues around the ABM treaty. Let me talk about each of these criteria.

The first one is the question of the missile threat to the United States. The Administration has said clearly that it's convinced there is enough of a threat to decide to build this system. So it has basically checked off the threat box.

The second one is the monetary cost of the system. The current cost estimate for the first phase is \$30 billion over 25 years, which includes deploying the system and operating it, and between \$50-60 billion for the full system over 25 years. That sounds like lot of money but again the Administration has basically checked that box as well, saying the economy is strong and it's not too much money to pay for U.S. security. So two of the criteria have already been met, according to the Administration.

The third one is the question of technology: does the technology exist for the system to work? One of the things that I want you to carry away from here is that when you ask, "Will the system work?" you have to ask "against what?" That question is crucial. There are two important aspects of the planned defense system. First, it is being designed so that it can only intercept missiles high in outer space, above the atmosphere. Second, unlike past systems, which used nuclear interceptors, this system must guide itself to actually hit the incoming warhead. This is called a "hit-to-kill" system. In this case, you must physically hit the incoming warhead with your interceptor. With the old nuclear system that the U.S. and Russia built many years ago, you only had to get within about 5 kilometers of the target and you could destroy it. So it's a much harder technical problem. Those two characteristics of this system make it very vulnerable to being defeated by an attacker.

The current development and testing program is mainly just to see if the system can do hit-to-kill, that is, if the system can guide itself to hit a warhead. Basically, the goal of the initial system to be deployed by 2005 is this: if the U.S. was attacked by a small number of warheads, and it knew which objects were the warheads, it would be able to guide the interceptors to hit the warheads. That is, in fact, what the Presidential Deployment Decision this fall will be based on, whether that first-step level of technology is ready. None of the tests prior to the Presidential Deployment Decision will test anything other than that. If you look at the details of the test series through 2005, when the first phase is supposed to be deployed, none of the scheduled tests through 2005 will test anything other than this sort of minimal level of technology. It is certainly true that it is a difficult technical feat to do that kind of thing - to hit a bullet with a bullet. You clearly need to be able to accomplish that minimum level of technical ability for the system to work. But my point is that this is simply not enough. It tells you essentially nothing about how the system would work against a real world attack because the attacker would do things to try and confuse the defense, to try and defeat the defense. The real technical issue for making a defense work against a real attack is not getting hit-to-kill to work. The real technical issue is trying to figure out how to deal with what are called countermeasures - the kind of things that an attacker can and would do to defeat your defense.

I recently took part in a technical study of countermeasures to the planned missile defense system that was done by a panel of 11 scientists. The main conclusion of that report is that you have to expect that technically simple but effective countermeasures would accompany any missile attack that an adversary would launch against you. What we looked at was the possibility of making countermeasures that require only technology that is simple compared to the technology that would be required to build a long-range missile in the first place. Another way of saying this is that if you assume an attacker has the technical capability to build a long-range missile and has the motivation to launch it in an attack against the United States, you also have to assume that same attacker would have the technology to build effective countermeasures and would have the motivation to put them on a missile before it launched the attack.

What we found in this study is that the missile defense the U.S. is developing simply would not work against realistic attacks, which you have to expect would include countermeasures. Recall that the deployment decision that President Clinton is supposed to make this fall is only looking at whether the system can work against attacks with no or very simple countermeasures. As a result, it means that the deployment decision being made by the United States this fall is based

on the wrong technical criteria. It is not the criteria that tells you whether or not the U.S. could build an effective defense against a real world threat. Despite that, political pressure in the United States is strong enough that it appears increasingly likely that, in fact, the decision will be made to take steps to start deploying the system.

The fourth of the criteria for deciding whether or not to deploy is what I call "strategic consequences," but can also be called "strategic costs" or "security costs." We talked about monetary costs; what about security costs? Let me first start with the possible security costs with respect to Russia.

The United States acknowledges that deploying the system that it is developing—even the first phase of that system—would violate the ABM treaty. The U.S. argues that if it makes a decision to deploy, it would like to proceed cooperatively with Russia, and in fact has been engaging Russia for some time now to get Russia to agree to amendments to the ABM Treaty that would allow the system to be built. On the other hand, spokespeople for the U.S. Administration have also said that it will not let any country veto what the United States thinks it must do to increase its own security. What that clearly means is that the U.S. is sending a mixed signal to Russia, saying we'd like to proceed on this cooperatively, but if you're not willing to cooperate, then we'll go ahead and do it unilaterally. The Russians that I have talked to have been rather offended by the U.S. approach because they feel like they have been given an ultimatum.

The ultimate system being planned for deployment would have 250 ground-based interceptors. The U.S. government argues that with 250 interceptors the system would be limited enough that it should not be a concern for Russia for two main reasons: (1) the U.S. expects that the United States and Russia will keep, for the foreseeable future, large nuclear forces around, which would contain more than a 1000 or so long-range missiles; and (2) the U.S. says that it believes that Russia will continue to keep the missiles that it has on high-alert status. So basically, the United States is saying that as long as we have the status-quo and don't do anything dramatic like cutting nuclear weapons and taking weapons off high-alert, we don't think the Russians should be concerned about the missile defense system we're developing.

The concern is, of course, that if the United States builds a system like this, it will put in place barriers to making much deeper cuts in the nuclear arsenals of the two countries and implementing de-alerting measures that would take the nuclear weapons of the two countries off high-alert. That would mean that by building this defense system, it would create barriers to taking some of the steps that are most important for the long-term security of both the United States and Russia. Russian concern about U.S. defenses was clearly shown recently when it ratified the START II Treaty because it put conditions on that ratification, saying that it would not implement this treaty if the United States contravenes the ABM Treaty. Thus, Russia has made a very clear linkage between arms cuts and continued limits on anti-ballistic missile systems.

What are Russia's concerns? Russia says, on the one hand, the United States is planning only 250 interceptors. If Russia goes to lower and lower numbers of nuclear weapons, at some point 250 interceptors starts to look significant. On the other hand, the United States says it is only building a limited system, but how does Russia know the system will remain limited? The planned system

would put in place a worldwide network of sensors, including 9 large radars, a system of satellite based sensors, and would be limited only in the number of interceptors. So one of the points Russia has made is that once the sensors are in place for a worldwide system and the production lines are open for 250 interceptors, how does it know that the U.S. will not start building more interceptors? In particular, it notes that the U.S. is also planning to build a sea-based missile defense system, called Navy Theaterwide, which is intended for intermediate-range missiles but could also be used against long-range missiles. So one way for the U.S. to increase the number of interceptors would be to hook those sea-based interceptors into the sensor network that is being built as part of the ground-based system. In fact, there have been several reports-one authored by the Pentagon-that discusses using Navy Theaterwide interceptors in just this way. So this is not just a hypothetical suggestion.

Let me turn briefly to the security costs with respect to China. China is believed to have about two dozen long-range missiles that could hit the United States. The stated goal of the proposed missile defense system is to defend against tens of missiles from a country like North Korea, so it is intended to defend against a threat which is essentially the same size as China. In fact, the initial phase of the defense system would be deployed in Alaska because of the concern about a North Korean missile attack. That site happens to be well placed for an attack coming from China as well. Not surprisingly, Chinese scientists and others I've talked to look at this system and say it looks as though it's actually being built to defend against a Chinese attack. China is currently modernizing its nuclear forces and some people argue that it is going to build new missiles anyway. But one has to expect the pace and scale of China's modernization will be driven by U.S. decisions about whether or not to deploy a national missile defense system.

Moreover, if the United States proceeds with this defense system, it will clearly complicate relations between the U.S. and Russia and the U.S. and China, and this make cooperation on non-proliferation measures more difficult in the future.

The bottom line is that the U.S. needs to compare the potential security benefits of the NMD deployment with the potential security costs. Because of the availability of countermeasures that an attacker could put on its missiles, I believe that the benefits of the planned missile defense system against an actual missile attack would be small or non-existent. On the other hand, I am convinced that the potential security costs are quite large. My conclusion is that it makes no sense for the U.S. to decide to build the missile defense system it's developing.