ARTICLES

U.S. Nuclear Posture: One Step Forward, Two Steps Back

Steve Fetter[1]

I would like to comment on the direction of U.S. nuclear weapons policy. Although the Bush administration typically is secretive about such matters, quite a bit is known as a result of the leak of the Nuclear Posture Review (NPR) about a year ago.[2] The NPR's recommendations mirror those found in a report published by National Institute for Public Policy just before the administration took office,[3] which should not be surprising as several senior administration officials participated in the NIPP report, including Stephen Hadley (deputy national security advisor), Robert Joseph (special assistant to the president for counterproliferation), Linton Brooks (administrator of the National Nuclear Security Administration), and William Schneider (chairman of the Defense Science Board).

On the positive side, the administration stated early on that Russia should be viewed as an ally rather than as an adversary or a potential adversary, and that the U.S.-Russian nuclear relationship should be restructured accordingly. The administration supported significant reductions in nuclear forces and signed the Strategic Offensive Reductions Treaty (SORT) last May, which will reduce the number of deployed strategic warheads to 2,200 by 2012.

This treaty has some curious features, however. The limit of 2,200 warheads takes effect on December 31, 2012, which is the same day that the treaty expires. In addition, the Treaty contains no verification or transparency measures. If the two sides agree they presumably could use the procedures in the START Treaty (which is set to expire in 2009) to verify compliance with the new limits, but these procedures would have to be extended significantly. The administration has also stated that, in contrast with START, submarines in overhaul will not be counted under the limits; if we include these, the limit would be closer to 2500 strategic warheads.

A major disappointment was the refusal of the Bush administration to agree to dismantle some or all of the thousands of nuclear warheads that will be removed from deployment as a result of SORT. The United States and Russia had agreed during the Clinton administration to do this as part of START III, and the nuclear weapons laboratories had done much technical work on verifying warhead dismantling. Although the number of deployed strategic weapons will decline from about 6,000 today to 2,200 under SORT, the total number of U.S. warheads, including nonstrategic and reserve warheads, could remain as high as 10,000. The total number of Russian warheads could be as high as 20,000. Many of the reserve strategic warheads could be rapidly redeployed on ballistic missiles and bombers. Indeed, the NPR refers to this breakout

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[1] School of Public Affairs, University of Maryland, College Park, MD 20742-1821, sfetter@umd.edu

[2] Excerpts of the Nuclear Posture Review, dated 8 January 2002, are available at http://www.globalsecurity.org/wmd/library/policy/dod/npr.htm.

[3] Keith B. Payne, Rationale and Requirements for U.S. Nuclear Forces and Arms Control, Vol. I: Executive Report (National Institute for Public Policy, January 2001); available at http://www.nipp.org/Adobe/volume%201%20complete.pdf.

potential as a “responsive force,” which could be used to more double the size of the U.S. strategic force.

The administration has claimed that the size of the U.S. nuclear arsenal is no longer linked to the size of the Russian force; that this is a “capability-based” rather than a “threat-based” force. I confess that I have no idea what this means, but I do know that it is impossible to justify the size and posture of U.S. deployed and responsive forces except by reference to Russia, inasmuch as no other country possesses more than a few percent of U.S. holdings of nuclear warheads.

The administration also claims that it has moved beyond the SIOP—the single, integrated operational plan—and its focus on large attacks against Russia, but the NPR describes targeting policy with language that has been used for over 30 years:

> “to hold at risk what opponents value, including their instruments of political control and military power, and to deny opponents their war aims. The types of targets to be held at risk for deterrence purposes include leadership and military capabilities, particularly WMD, military command facilities and other centers of control and infrastructure that support military forces.”

In addition, the U.S. continues to maintain two-thirds of its submarines at sea and all of its intercontinental ballistic missiles (ICBMs) on alert. A fraction of the submarine-launched ballistic missiles and virtually all of the ICBMs can be launched within a few minutes of a decision to do so. The NPR makes clear that these operational practices will continue. The administration’s nuclear war plans are likely little more than a scaled-down version of the SIOP under the last Bush administration, with options for prompt counterforce attacks against Russian nuclear forces, command and control, and leadership targets.

A key feature of the Bush NPR is that it implicitly assumes that the U.S. nuclear posture is largely, if not entirely, decoupled from the nuclear policies of other states—that there is no feedback loop in which other countries react to U.S. nuclear policies. Administration officials sometimes say that they simply are doing what is in the best interests of the United States, regardless of what the leaders or citizens of other countries prefer. This sounds good, but the failure to take into account the reactions of other states is the classic “fallacy of the last move.” This has caused the Bush administration to miss key opportunities and, in some cases, to take actions that are likely to increase threats to the security of the United States over the long run.

At present, the only major threat to the security of United States—certainly the only thing that threatens the very survival of our society—is the Russian nuclear arsenal. Yet we continue to deploy U.S. nuclear forces in ways that magnify this threat. We keep a large fraction of our forces on high alert and target them against Russia’s nuclear forces. The ability of the United States to preemptively destroy Russia’s forces is higher than it has been since the 1960s. Russia knows this. Although Russian military planners think a U.S. attack is highly unlikely, they do not ignore the possibility. Indeed, they continuously guard against the possibility of preemptive attack by maintaining a large number of ICBMs, and reportedly even submarines in port, on alert, ready to launch on warning of an attack. Thus, our daily survival relies on the integrity of Russian attack warning systems, command and control systems, and the integrity of the chain of command. The danger of this posture was revealed in 1994 when the launch of a harmless Norwegian sounding rocket triggered a Russian nuclear alert.

This is a crazy situation. Russia maintains a huge, alert, and lethal force because the United States maintains a huge, alert, and lethal force. No other potential threat could justify such a posture by either country, now or for the foreseeable future. Neither country believes that an attack by the other is plausible, aside from the fact that the other maintains a huge, alert, and lethal force. The security of both countries would be improved through reductions in alert status and other steps to reduce the counterforce capability of remaining deployed forces. Unfortunately, the discussion of dealerting in the leaked portions of the Bush NPR refers only to safeguards on U.S. nuclear forces and does not even acknowledge the coupling between U.S. and Russian postures.

The fallacy of the last move is also evident in the administration's push for a national missile defense (NMD) system. If other countries do not react to the deployment of U.S. NMD, then the system might improve U.S. security. But other countries *will* react, likely in ways that will result in a net decrease in our security.

Deployment of a U.S. NMD system will increase pressure on Russia to be able to launch its nuclear forces on warning of an attack, to ensure that a retaliatory strike could penetrate the defense. Today, in the absence of NMD, Russia might rely in peacetime on the one or two subs it has a sea, or the dozen or so mobile missiles on patrol. But if the U.S. deploys an NMD system with a hundred or more interceptors, that would not suffice.

Deployment of a U.S. NMD system would almost certainly cause China to field a larger ICBM force than it otherwise would—perhaps much larger. Today, China relies on a dozen or so ICBMs, which are reportedly unarmed and unfueled. The force is being modernized, but at a very slow pace. Based on statements by Bush administration officials, China has good reason to believe that a US NMD will be oriented against China. For example, shortly before becoming deputy national security adviser, Stephen Hadley argued that "the United States should have no need to deploy an NMD system against China. But if China continues to insist that it is free to use force against Taiwan, continues to deploy more ballistic missiles aimed at Taiwan and the United States, and continues to threaten to use those missiles against both, then the United States may simply have no choice."[4]

The demonstrated readiness of the Bush administration to use force and reluctance of the US to accept any limits on unilateral action will also influence Russian and Chinese nuclear planning, in ways that are unlikely to benefit the United States. But the greatest deficiency in the Bush nuclear posture, and the most glaring example of the "fallacy of last move," is the broadening of U.S. nuclear threats to other potential adversaries, who are not armed with nuclear weapons, in situations ranging from deterring or responding to chemical and biological attacks to destroying deep underground bunkers and other tactical uses.

The Bush NPR cites the need "to develop concepts for follow-on nuclear weapons better suited to the nation's needs," and mentions new initiatives to attack mobile and relocatable targets; earth-penetrating warheads to destroy hard and deeply-buried targets; warheads to defeat stocks of chemical and biological agents; modifications to existing weapons to "provide additional yield flexibility," and new warheads that reduce collateral damage." It calls for a

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[4] Stephen J. Hadley, "A Call to Deploy," ***Washington Quarterly***, Vol. 23, No. 3 (Summer 2000), p. 106.

“revitalized nuclear weapons complex able to design, develop, manufacture, and certify new warheads in response to new national requirements.”

The Bush administration’s analysis focuses exclusively on the potential benefits of these initiatives for US action: enhancing our nuclear capabilities will bolster our ability to deter other countries from threatening our interests; and if deterrence fails, new nuclear weapons will give the US new military options. But the deterrent value of an expanded nuclear threat is marginal. Adversaries already know that the United States is armed with nuclear weapons; they must consider the possibility that, if they hurt us badly enough, the United States would respond with nuclear weapons. At the same time, adversaries also know that the use of nuclear weapons by the United States would be widely viewed as disproportionate, and so attempts to enhance the credibility of U.S. nuclear threats are inherently limited by the stakes. In many cases the stakes simply would not be high enough to make U.S. nuclear threats credible, no matter what types of warheads are in its nuclear arsenal.

And what if deterrence fails and a country used chemical or biological weapons against U.S. troops or U.S. cities despite threats of nuclear retaliation. Would the United States respond with nuclear weapons? I hope not, because most likely a nuclear response would not make military or political sense. Nuclear attacks against cities would almost certainly be regarded as immoral and illegal unless it could be shown that this was a proportional response and the only way to prevent additional catastrophic attacks against civilians.

The tactical military value of nuclear weapons is very limited, also. Deep underground bunkers are very difficult to destroy, even with nuclear weapons. The radioactive fallout from earth-penetrating nuclear weapons would create enormous military-operational and political problems for the United States, even if it did not create a humanitarian disaster. It is much simpler to attack the entrances and communications and power lines into these bunkers with conventional weapons. Nuclear weapons can be used to advantage on the battlefield only against large targets such as ports, or against large concentrations of military forces, such as carrier battle groups or large numbers of tanks. Every time in the last 50 years that the tactical use of nuclear weapons has been considered seriously—in Korea, in Vietnam, in Iraq—the United States has concluded it would be disadvantageous, and that our military objectives were better achieved with conventional forces. The use of nuclear weapons in any but the most dire circumstances would turn world opinion against the United States and destroy U.S. leadership and alliances.

The benefits of these initiatives to increase the usability of nuclear weapons are marginal, and are based on the premise that the United States will be the only country to threaten the use of nuclear weapons. But moves by the United States to enhance the usefulness and usability of nuclear weapons and to thereby expand U.S. nuclear threats are likely to increase pressures on other countries to acquire nuclear weapons—particularly countries that find themselves on the expanding U.S. target list. The public explanation by Secretary of Defense Rumsfeld for the difference in U.S. policy toward Iraq and North Korea—that we will attack Iraq because it might acquire nuclear weapons but we will not attack North Korea because it already has a nuclear weapon—sets a very unfortunate example for other countries that contemplate coming into conflict with the United States.

This message applies beyond U.S. adversaries. After all, if the United States, by far and away the strongest military power, needs nuclear weapons to counter non-nuclear threats, then why does not every other country have even more need for nuclear weapons, particularly countries facing far more dire security threats or those that are not covered by U.S. security guarantees?

Nuclear weapons are, fundamentally, the great equalizer. As former Secretary of Defense Les Aspin said more than ten years ago, we are now the "equalizee."[5] U.S. conventional military power is completely unchallenged, and is likely to remain so for the foreseeable future—except for nuclear weapons. No potential adversary or combination of adversaries will master anytime soon the combination of technologies required for modern warfare as it is now being practiced in Iraq and Afghanistan: real-time intelligence information being fed directly into systems for targeting and destroying a vast range of targets; pilotless aircraft loitering over areas waiting to attack particular individuals. But a large number of countries could, at least in principle, destroy one or several large U.S. cities with nuclear weapons.

The most significant security threat to our society and to most of our allies is nuclear weapons. The taboo on the use of nuclear weapon which has held since 1945 benefits the United States as much or more than any other country. Our nuclear posture should be based first and foremost on protecting and enhancing that taboo, and on the spread of nuclear weapons to additional states. Developing new nuclear weapons designed for tactical use moves in the opposite direction.

As Pakistan and North Korea demonstrated, nuclear weapons are not that difficult to acquire. Iraq may have been thwarted, but what about Iran? Many countries could build nuclear weapons in a few years or less if they decided to so, despite our best efforts to prevent it. Nonproliferation is largely a voluntary and cooperative game; for most part, we are able to act effectively against proliferators only to the extent that we can marshal widespread international support.

We must recognize that nonproliferation regime is a vast web of formal international agreements and informal cooperation. Despite a few notable failures, it has been highly successful and has greatly benefited the security of the United States. Cooperation among states with nuclear capability is vital to control the flow of nuclear materials and combat nuclear terrorism. This web of agreements and this level of cooperation cannot remain intact for long if the United States claims for itself alone the right to use nuclear weapons first, even against non-nuclear weapon states, and to develop and test a new generation of weapons for this purpose.

We are the most powerful nation on earth, but we are not invulnerable. Our security relies on assistance of allies and the protection of international restraints. In the long run, our interests are best served by an international system that is as law-like as possible, one in which the use of nuclear weapons by anyone or any country is beyond the pale.

Prof. Steve Fetter

School of Public Affairs, University of Maryland

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[5] Les Aspin, "Three Propositions for a New Era Nuclear Policy," commencement address at the Massachusetts Institute of Technology, 1 June 1992.

College Park, MD 20742-1821

301-405-6355; 403-8107 (FAX); 422-6857 (H)

Associate Director, Joint Global Change Research Institute

8400 Baltimore Ave., Suite 201, College Park, MD 20740

301-314-6712; 314-6760 (FAX)

http://www.puaf.umd.edu/faculty/papers/fetter.htm,

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http://globalchange.umd.edu , http://globalchange.umd.edu

Seattle Won a Park in a Battle With a Missile System

Greg Dash

Discovery Park has approximately 644 acres of meadow, walks and trees on a high bluff overlooking Puget Sound and the Olympic Mountains. It is Seattle's largest and newest park, established on June 1, 1972.

But a few years earlier, it seemed destined to become a missile base, where radars and intercept missiles would be prepared to detect and destroy intercontinental ballistic missiles. The struggle to change that destiny took the dedicated efforts of citizens organizations, political leaders and scientists.

On Sept. 18, 1967 Defense Secretary Robert McNamara announced that the U.S. would build a light anti ballistic missile (ABM) system as a deterrent against an expected Chinese missile attack in mid-1970's. The "Sentinel" ABM system would consist initially of ten radar and missile sites along the northern tier of states. It would be adequate to defend against a light attack by a small number of simple missiles, but it could not defend the country against a massive attack such as USSR could launch, An ABM defense against the USSR was impractical, and perhaps unnecessary in view of the effectiveness of the policy of Mutual Assured Destruction, whereby each country held the other's cities in hostage. Skeptics thought that Sentinel might actually be the thin end of a wedge, a start for a much larger, eventually anti-Soviet system. Indeed, John Foster, Director of Defense Research and Engineering, testified that while politically the system was designed to protect against a Chinese attack, it would actually have some degree of effectiveness against Soviet missiles. And on the day after the announcement Senator Henry Jackson hailed the decision as a step toward a massive ABM system.

When more details of the ABM system were described, Fort Lawton in Seattle was mentioned as a possible choice for its westernmost base.

The fort was an army base originally intended for a coastal gun battery, but never activated. This came as a shock, for Seattle had been looking forward to acquiring all or a substantial part of Fort Lawton for a city park. Mayor Dorm Braman said that it was disappointing news, but if the system needed Fort Lawton to make Seattle safer, it would be worth the loss.

However, a Pentagon spokesman replied that "The missile hardware has to go in at Fort Lawton if it is to defend Seattle properly".

To a few scientists at the University of Washington, the case was not so obvious. Their opposition rested on two principles. The first was a conviction that missile defense was unwise. The second was that, if an ABM base was to be built in the Northwest, Fort Lawton would not be a necessary or desirable location.

The issue of missile defense had been debated within high level Defense Department advisory committees and in public for several years. The considered judgment of non governmental defense experts was that there was no foreseeable technology for an effective antimissile system. Therefore, an ABM system built with currently available technology would be ineffective and wasteful. Furthermore it could actually increase the risk of war. At that time, we and the USSR opposed each other with thousands of intercontinental missiles. The sure knowledge that an exchange would destroy both countries led to a state of mutual deterrence. But if one country could ward off an attack, or even if it prepared to defend against it, that would threaten the other's security. So if the Sentinel system were built, although it might be only a thin defense against a Chinese attack, it could give rise to Soviet fears that it would lead to a larger and more advanced anti Soviet ABM, and that would compromise the Soviet defense. In response to the threat, the Soviets were likely to increase the number of its missiles targeting the U.S., to be sure that an adequate number would get through.

Along with the national debate, these arguments were discussed in University of Washington seminars. Newell Mack, a Physiology graduate student, had been so concerned by signs that national policy seemed to be leading toward missile defense, that he had convinced members of a graduate seminar on Conflict Studies in the University of Washington to study the issue. He was joined in leading the discussions by Philip Ekstrom, a Physics graduate student.

The meetings had begun with one or two sessions on the technical aspects of missile defense, when the Sentinel ABM was announced, and Fort Lawton was mentioned as a possible choice for the key site for the West Coast. As a bonus, it was said to protect Seattle.

The seminar members were disappointed in the national decision, but they felt that perhaps not all was lost; Fort Lawton might be saved for a park if the Pentagon spokesman was wrong, and that Seattle's defense could be based somewhat outside of the city. To determine that, one would have to know the technical characteristics of the Sentinel system. Fortunately, the details had been published, in an issue of *Aviation Week*.

Each installation would have a large Perimeter Acquisition Radar, to detect an ICBM attack at long range, while the missiles were on their inertial trajectories well above the Earth's atmosphere. The PAR would alert the system to fire Spartan interceptor missiles, which would target the incoming ICBMs while they were still in space. The Spartans, guided to their targets by the PAR, would be able to destroy them with their 1 megaton nuclear warheads even if they didn't make contact. The PAR radars would be protected by a "last ditch defense", a battery of short range high acceleration Sprint missiles, which could intercept and destroy ICBMs penetrating the Spartan

shield. In fact, it might be necessary to hold fire until the ICBMs entered the atmosphere, so that air resistance could discriminate between actual missiles and decoys. The Sprints carried 'small' nuclear warheads, about a kiloton.

Philip Ekstrom, with help from Physics Prof. Edward Stern, calculated the "footprint" of the protected zone. Ekstrom's calculation had as input data the speed and range of the Sprints, and the probable trajectories of the attacking ICBMs. The physics problem was a bit like finding the area that can be kept dry by an umbrella in a driving rain. The footprint turned out to be so large that the ABM base could be placed well outside of Seattle, and yet include the city in its protected area. His colleague. Physics Prof. Greg Dash described the good news in a March 31 *Seattle Times* story; Fort Lawton could be saved for a park, and Seattle could have both missiles and picnics. Dash pointed out that the PAR site for the Northwest would be the key detection unit for the entire West Coast. If it were placed at Fort Lawton, Seattle would become a prime target. An enemy intending to attack San Francisco or Los Angeles would have to take out Seattle's radar unit in order to assure that its missiles could get through. Furthermore, having 1 kiloton warheads explode at close range could be suicidal, with fallout from airbursts.

The news gave a great boost to the public campaign, which became known as The Battle of Fort Lawton. The campaign had remarkably wide support, with twenty-five citizen and professional organizations, such as the Seattle chapters of the American Institute of Architects, the Federation of American Scientists, the Magnolia Community Club, the League of Women Voters, and The Mountaineers. They were joined into one group, Citizens for Fort Lawton Park, headed by Donald Voorhees, a prominent Seattle lawyer, who was a leader in Seattle's improvement activities. Strong support came from Senators Henry Jackson and Warren Magnuson, and Congressmen Thomas Pelly and Brock Adams, Mayor Braman and other city officials, *The Seattle Times* editor Herb Robinson and reporter Svein Gilje. The campaign was carried out in letters to newspapers, editorials, radio interviews, and personal contacts between the senators and General Starbird, for over a year. Yet the Army Defense Command and Sentinel's General Starbird continued to claim that Seattle's defense required the in-city location.

As the criticism increased, Defense Department officials tried to explain that the dangers were overdrawn, but their arguments were unconvincing. In an October interview John Foster scoffed at the scientists' concern at having nuclear weapons based in the city. Foster claimed that the explosion of a Spartan warhead outside the atmosphere would be hardly noticeable, and its fallout would be filtered by the atmosphere over a long period. The Sprint's one kiloton warhead would be too low to cause damage. The group found his claims incredible and his breezy dismissal infuriating.

The public campaign now was intensified by the realization that an ABM at Fort Lawton would increase the city's vulnerability. Senator Jackson then asked the FAS group for detailed data showing alternative sites that could satisfy Sentinel's strategic plan. Ekstrom and Stern supplied it in late August. A few days later Jackson met with Gen.Starbird, and extracted a promise that the general would meet with Stern and listen to arguments for alternate sites. Stern flew to Washington in mid September and offered three alternate sites.

A week later a Pentagon source informed *Seattle Times* reporter Svein Gilje that the alternate sites would not be feasible. Besides, he added, why look for others when the Army already owns a perfect site, Fort Lawton?

Senator Jackson suggested that perhaps the Army had not done all its homework. Senator Magnuson complained that Fort Lawton "would be the worst possible site that anyone could imagine."

On Dec.12 a crucial meeting was held in the Mayor's Office on the fate of "Ft. Lawton: Anti-Ballistic Missile Site or City Park?" Attending were 16 representatives of civic and environmental groups, Donald Voorhees, chairman of Citizens for Ft.Lawton Park, Senator Jackson, General Starbird, and Mayor Braman.

On the next morning, Sen. Jackson had breakfast with Defense Secretary Clark Clifford in the Secretary's office. Jackson had flown in minutes before from Seattle in a military plane. He was there to transmit the strong feelings that had been expressed in Mayor Braman's meeting. Clifford told him that he was aware of Seattle's desire to preserve the open space, but he had not yet heard from Gen. Starbird; he promised that he would ask for a report from the general over the weekend and have a decision a few days later. Starbird, in turn, was reported to have been convinced that Seattle's arguments for open space were valid, and official policies for retaining Ft.Lawton for missiles were contradicted with technical arguments showing the feasibility of alternate sites.

On Dec. 22nd, the day promised for the decision, Sen.Jackson telephoned Secretary Clifford, who told him the good news: the ABM would go to an alternate site.

Epilogue

This account has focused on Seattle's campaign, but there were other local groups that waged campaigns against Sentinel. In Berkeley and the Bay Area, Minneapolis, Chicago, Detroit, New York, Pittsburgh and Boston, groups opposed the establishment of nearby sites, or fought against the system as a whole. The opponents were partially successful. In March 1969 President Nixon announced that Sentinel's city defense would be abandoned in favor of a "Safeguard" system, a defense of Minuteman ICBM sites. The change, in an influential paper by Harold Agnew, the Leader of Los Alamos' Weapons Division, was advisable because "...defense installations are primarily located in areas of existing military bases thus minimizing problems presently being posed by citizens worried over safety matters or angered over dislocation problems." However, Safeguard failed to get strong political support and adequate financing, and in the end, only two sites were constructed.

In 1971 Anne Cahn earned her Political Science Ph.D. from M.I.T. with a study of the scientists' influence in the struggle. She concluded, in part,

"Across the country scientists, mostly Outer (i.e. non Defense Department), younger, not scientifically prominent men took it upon themselves to alert, inform and educate the public about ballistic missile defense."

"The important event, in our opinion, was that scientists took their case to the people."

Missile defense was proposed again by President Reagan. on March 23, 1983. The initial design of the Strategic Defense Initiative (SDI) was to provide a nearly perfect "astrodome" defense. It would rely on space based laser or electron beams to disable attacking ICBMs. The system would be powered by orbiting nuclear power reactors. Vigorous opposition came from scientists. Particularly cogent criticism came from a committee of the American Physical Society, in a paper analyzing

beam weapons. In an effort to answer the criticism, the design was changed to "kinetic energy weapons", which would rely on direct impact. A furious national debate over the technical feasibility and the political effects of SDI eventually led to its failure to get congressional support.

In 1996, the Secretary of Defense announced a new program, National Missile Defense. NMD was begun as a technology development effort leading to deployment of system that would protect all 50 states from a limited strategic missile attack by a rogue nation. The system would detect the launch of enemy missiles and track them by surveillance satellites and ground based radars, and then guide defending ABM's to intercept the incoming missiles. In response to the opposition to the previous two ABM system designs, nuclear warheads and nuclear reactors in orbit would be replaced by ground based defending missiles, and they would be kinetic energy, "hit-to-kill" weapons. However, a succession of tests has shown the difficulty of achieving direct impacts. Many attempts to hit the incoming missile have largely failed, in spite of advance knowledge of the launch time and trajectory of an incoming missile, even when carrying a beacon. Nevertheless, the administration of Pres. George W. Bush has decided to begin preparing the first site. But the system is already aiming at its first target: the Antiballistic Missile Treaty. In 1972 the United States and the Soviet Union agreed to forego missile defense, in order to avoid threatening each other's deterrence forces. But defense policy makers are now preparing to discard that policy for an unproven NMD system. Although the current system is far from ready, in the words of a Defense Department official. "We do not have the luxury of waiting" until the system is proven to be effective."

In a crowning bit of irony, William Scheider, Chairman of the Defense Science Board, reported last year that the continual test failures with the 'hit-to-kill' method has caused the Bush administration to consider putting nuclear warheads on the interceptor missiles.

But meanwhile, Seattle can look back at its fight against an ABM system more than 30 years ago, and take pleasure in its victory, that won it a beautiful city park.

Jay Greg Dash

Department of Physics, University of Washington

PO Box 351560, Seattle, WA 98195-1560

dash@phys.washington.edu