

THE U.S. NUCLEAR WAR PLAN: A TIME FOR CHANGE

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NATURAL RESOURCES DEFENSE COUNCIL
June 2001

ACKNOWLEDGMENTS

The Natural Resources Defense Council and the authors wish to acknowledge the generous support and encouragement given to the NRDC Nuclear Program's Nuclear War Plans Project by The William Bingham Foundation, the HKH Foundation, The John D. and Catherine T. MacArthur Foundation, The John Merck Fund, The Prospect Hill Foundation, the Ploughshares Fund, and the W. Alton Jones Foundation. We also wish to thank the 500,000 members of NRDC, without whom our work would not be possible.

Many individuals and institutions have assisted in the preparation of this report. The lead author, Matthew G. McKinzie, worked primarily on developing and integrating the software for the analysis of Major Attack Option-Nuclear Forces (MAO-NF). The most important computer software that we used was the Geographic Information System (GIS) program. ArcView was generously provided to NRDC under a grant by the Environmental Systems Research Institute, Inc. (ESRI). The University of Florida Department of Urban and Regional Planning assisted in customizing the ArcView program to fit NRDC requirements. We are particularly indebted to Dr. Ilir Bejleri for his assistance in software programming and file management. Dr. J. Davis Lambert assisted in this work, as did Professor John Alexander who provided management oversight as principal investigator under the contract with the University of Florida.

The extensive targeting and related databases were developed primarily by Thomas B. Cochran, with contributions by William M. Arkin, Joshua Handler, and Norman Z. Cherkis. Robert S. Norris worked principally on the history and policy sections. An earlier NRDC report prepared by William M. Arkin and Hans Kristensen, *The Post Cold War SIOF and Nuclear Warfare Planning: A Glossary, Abbreviations, and Acronyms*, was an excellent primer.

The authors also greatly appreciate the continuing support and encouragement of the Board of Trustees and the rest of the Natural Resources Defense Council, including Frederick A.O. Schwarz, Jr., Chairman of the Board, John H. Adams, President, Frances Beinecke, Executive Director, Christopher Paine, David Adelman and Gerard Janco of the Nuclear Program, Jack Murray and the Development staff, and Alan Metrick and Communication staff. Emily Cousins oversaw the editing and production of the report meeting impossible deadlines. For the version that appears on NRDC's web site, we thank Rita Barol and her able staff.

ABOUT NRDC

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ISBN: 893340-29-5

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EXECUTIVE SUMMARY

Through the use of personal computers, customized computer software, and unclassified databases, the Natural Resource Defense Council (NRDC) is now able to model nuclear conflict and approximate the effects of the use of nuclear weapons. For the first time, this allows non-governmental organizations and scholars to perform analyses that approximate certain aspects of the U.S. nuclear war plan known as the Single Integrated Operational Plan (SIOP).

Initiated during the Eisenhower administration, the SIOP is the war plan that directs the employment of U.S. nuclear forces in any conflict or scenario, and is the basis for presidential decision-making regarding their use. The plan results from highly classified guidance from the President, the Secretary of Defense, and the Joint Chiefs of Staff. The Joint Chiefs of Staff then set requirements for how much damage our nuclear warheads must achieve. Most of the requirements call on U.S. Strategic Command to target Russia, but China and other nations are also viewed as potential adversaries.

The SIOP's logic and assumptions about nuclear war planning influence U.S. national security policy, arms control strategy, and international politics. Though the Cold War has ended, and the SIOP has been through a number of reforms as forces have been reduced, it continues to dictate all matters concerning the U.S. preparations for nuclear war. It establishes mock nuclear war scenarios and requirements that shape U.S. negotiating positions in the Strategic Arms Reduction Treaty (START) arms control process. The SIOP also determines what number of nuclear warheads must be kept at various alert levels.

As the SIOP is one of the most secret documents in the U.S. government, it is difficult to discover what the specific assumptions are upon which it rests. Congress has been powerless to influence the SIOP, and even presidents have only a superficial understanding of the process of nuclear war planning. The secrecy is ostensibly justified to protect certain characteristics about U.S. nuclear forces and warheads, various nuclear weapons effects information, and the specific targets chosen in Russia. But all of these data are known well enough today to provide a quite sophisticated approximation of the actual SIOP assumptions, and the effects of its various nuclear war scenarios. One of the most significant changes since the end of the Cold War has been the greater openness in Russia whereby a high quality database of nuclear, military, and industrial targets can be created using open sources.

Given the central role of the SIOP in national security, nuclear weapons, and arms control policy, NRDC decided to create a tool that will help the non-governmental community assess nuclear war planning and its impacts. We have compiled our own databases of information on weapons, population, effects, and targets to recreate the most important calculations of nuclear war planning. We integrated an enormous quantity of data from open sources, including commercial data on the Russian infrastructure, official arms control data about the structure of Russian nuclear forces, declassified U.S. documents, census and meteorological data, U.S. and Russian maps and charts, U.S. government and commercial satellite imagery, and U.S. nuclear weapons effects data and software.

Using these resources, we developed a suite of nuclear war analysis models based upon the ESRI ArcView software program. From this model and a database

of weapons and targets, we constructed and analyzed in detail two quite different scenarios of a possible nuclear attack on Russia:

- ▶ A major U.S. thermonuclear “counterforce” attack on Russian nuclear forces. For this attack, we employed approximately 1,300 strategic warheads using current U.S. weapons. We calculated the damage to these targets and the resulting civilian deaths and injuries.
- ▶ A U.S. thermonuclear “countervalue” attack on Russian cities. For this attack, we used a “minimum” force (150 silo-based intercontinental ballistic missile warheads or 192 submarine-launched ballistic missile warheads). We assessed the ensuing civilian deaths and injuries.

FIGHTING REAL NUCLEAR WARS: THE RESULTS

We used actual data about U.S. forces and Russian targets to approximate a major counterforce SIOP scenario. Our analysis showed that the United States could achieve high damage levels against Russian nuclear forces with an arsenal of about 1,300 warheads—less than any of the proposals for a START III treaty. According to our findings, such an attack would destroy most of Russia’s nuclear capabilities and cause 11 to 17 million civilian casualties, 8 to 12 million of which would be fatalities.

Our analysis concluded that in excess of 50 million casualties could be inflicted upon Russia in a “limited” countervalue attack. That attack used less than three percent of the current U. S. nuclear forces, which includes over 7,000 strategic nuclear warheads.

One of the historic tenets of nuclear orthodoxy—influential in inspiring the original SIOP—was that countervalue attacks against cities and urban areas were “immoral” whereas counterforce attacks against Soviet (and later, Russian) nuclear forces were a better moral choice. The implied assumption and intent was that attacks could be directed against military targets while cities and civilian concentrations were spared. In reality, things are not so simple, nor can there be such pure isolation between civilian and military. Most difficult of all is to find moral benchmarks when it comes to the targeting of nuclear weapons.

Our analysis challenges that basic assumption. Even the most precise counterforce attacks on Russian nuclear forces unavoidably causes widespread civilian deaths due to the fallout generated by numerous ground bursts. While the intention to avoid civilian casualties is important and is probably included in the guidance, nuclear weapons by their nature live up to their billing as “Weapons of Mass Destruction.” We saw this clearly in our simulation of a counterforce attack. We found the effects were complex and unpredictable and therefore uncontrollable from a war planner’s perspective. These included such variables as the proximity of urban centers to military targets, whether the population was sheltered or not, and the speed and direction of the wind.

The point here is not to argue for attacking Russian cities or for attacking Russian forces as U.S. nuclear policy. But given the vast number of deaths that occur with the use of a few weapons, we have to ask why the U.S. nuclear forces need to be so

large? If the United States can destroy Russia's standing forces and cause 11 to 17 million casualties in a counterforce attack, should not that be enough to "deter" any conceivable attack by Russia? To go a step further, if the United States went to a minimum force, it would still be able to cause upwards of 50 million casualties. That fact too should be enough to convince Russia or anyone not to use nuclear weapons against the United States.

In light of the findings from our computer simulation of the two nuclear scenarios, we are more convinced than ever that the basic assumptions about U.S. nuclear deterrence policy, and the possession of huge nuclear arsenals needs to be re-examined. The logic of the nuclear war plan expressed in the current SIOP ignores the grotesque results that would occur if the weapons were used. Those results need to be exposed.

WHAT WE RECOMMEND

1. Unilaterally reduce U.S. nuclear forces and challenge Russia to do the same. The sole rational purpose for possessing nuclear weapons by the United States is to deter the use of nuclear weapons by another country. Recommendations for specialized arsenals to fulfill a variety of illusory roles for nuclear weapons are expressions of irrational exuberance. At this stage in the disarmament process, a U.S. stockpile numbering in the hundreds is more than adequate to achieve the single purpose of deterrence. Even that number, as we have seen, is capable of killing or injuring more than a third of the entire Russian population, and destroying most major urban centers.

2. Clarify the U.S. relationship with Russia and reconcile declaratory and employment policy. In his May speech at the National Defense University, President Bush said, "Today's Russia is not our enemy." That said, the United States has not yet decided whether Russia is our enemy or our friend, or something in between. The act of targeting defines an individual, a group, or a nation as an enemy. We continue to target Russia with nuclear weapons and devise options and plans for their use. The process itself reduces Russia from flesh and blood to models and scenarios, allowing the contradictory stance to continue. If our words and our actions are to correspond, it is obvious that major changes must take place in the way the United States postures its nuclear forces and plans for their use.

3. Abandon much of the secrecy that surrounds the SIOP and reform the process. Any discussion of U.S. nuclear policy and strategy is undermined by the fact that most of the details surrounding the SIOP are highly guarded secrets. Because of compartmentalization, only a very few have an understanding of the SIOP. The presidential and Pentagon guidance too is so closely held, that no one can question the assumptions or the logic. The nuclear war planning function now resident within U.S. Strategic Command has become a self-perpetuating constituency that needs fundamental reform. Much of the secrecy that surrounds the SIOP can be abandoned without any loss to national security. Therefore, a joint civilian-military staff, with Congressional involvement and oversight, should plan the use of nuclear weapons.

The current SIOP is an artifact of the Cold War that has held arms reduction efforts hostage. It is time to replace it with something else.

4. Abolish the SIOP as it is currently understood and implemented. Having a permanent war plan in place that demands widespread target coverage with thousands of weapons on high alert is a recipe for unceasing arms requirements by the Pentagon and a continuing competition with Russia and others. It is for this reason that we conclude that the over-ambitious war plan is a key obstacle to further deep arms reductions. The current SIOP is an artifact of the Cold War that has held arms reduction efforts hostage. It is time to replace it with something else.

5. Create a contingency war planning capability. Under new presidential guidance, the United States should not target any country specifically but create a contingency war planning capability to assemble attack plans in the event of hostilities with another nuclear state. This new paradigm would alleviate the requirement for possessing large numbers of weapons and eliminate the need for keeping those that remain on high levels of alert. This shift would also help break the mind-set of the Cold War. We are in agreement with President Bush when he says that we must get beyond the Cold War. We believe, however, that his approach is not the “clear and clean break with the past” that he says he wants. Instead, by assuming a wider range of uses for nuclear weapons, by making space a theater for military operations, and by considering new or improved nuclear warheads for a future arsenal, President Bush is offering more of the same.

6. Reject the integration of national missile defense with offensive nuclear deterrent forces. Current, worst-case SIOP planning demands that both the United States and Russia prepare for the contingency of striking the other first, though it is not stated U.S. or Russian declaratory policy. Introducing national missile defense, which invariably complements offensive forces, will exacerbate the problem. The technological challenges of national missile defense are formidable, the price tag enormous, and if deployed, will provoke a variety of military responses and countermeasures, leaving the U.S. less secure rather than more secure. China, for instance, has long had the ability to deploy multiple warheads on its ballistic missiles and has chosen not to do so. Currently only a small number, less than two-dozen Chinese single-warhead missiles, can reach the United States. A guaranteed way to increase that number would be for the United States to abrogate the Anti-Ballistic Missile Treaty and to deploy a national missile defense system. Furthermore, national missile defenses would likely undermine opportunities for deeper reductions.

PURPOSE AND GOALS

Today's Russia is not our enemy.

President George W. Bush, May 1, 2001

In 1999, the Natural Resources Defense Council's (NRDC) Nuclear Program initiated a Nuclear War Plans Project to spur new thinking about nuclear arms reductions and the risks and consequences of nuclear conflict. What we faced then—and what we face now—was an arms reduction process at a standstill. On the surface, the standstill was caused by the failure to ratify the START II Treaty. It was further exacerbated by disagreements over the details of START III reductions and the impact of a U.S. missile defense program. But the real stumbling block was a “veto” exerted by the United States’ central nuclear war plan—the Single Integrated Operational Plan (SIOP). Initiated in the Cold War, the SIOP continues to dictate U.S. nuclear war matters and hold all reduction options hostage.

No one doubts that the SIOP's logic and assumptions about nuclear war planning influence U.S. national security policy, arms control strategy, and international politics. What is less clear is what those specific assumptions are, and whether the nuclear war planning process is rational, or is actually a hall of mirrors, creating extravagant requirements, yet blind to what would happen if they were used. Most of the assumptions about planning for nuclear war are put beyond debate because of excessive government secrecy. The public and the experts are also at a disadvantage by lacking tools to perform independent assessments of the fundamental premises of nuclear deterrence. NRDC set out to change that.

Given the central role that the SIOP plays in armament issues and national security policy, NRDC decided to create a tool that would help us understand this largely secret process. We began our project when, for the first time, information and computer power could allow a non-governmental organization to recreate many of the calculations of nuclear war planning, thereby allowing a credible approximation of the U.S. SIOP. Changes in Russia have resulted in the increasing availability of detailed information about its nuclear and military forces, as well as the supporting civil, military, and industrial infrastructures. High-quality maps, satellite photography, population distribution data, and meteorological data are now available electronically. We also have a basic understanding of the SIOP itself, its structure, and many of the assumptions that go into it. State-of-the-art weapons-effects models are also

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available and can be run on personal computers. All of these new resources can be combined in sophisticated geographic information systems (GIS) with customized visualization software. The result is a high quality, real-world target database that simulates nuclear war scenarios using the actual data about forces, weapons, populations, and targets. For the first time, we can now model in an unclassified way the nuclear weapons effects on individual targets and on the Russian civilian population from single, combined, and large-scale attacks.

This report is the first product to utilize the databases and the GIS systems we have developed to simulate nuclear war conflicts. Our goal has been to build a target database using a variety of unclassified data. We have developed a database for Russia that contains almost 7,000 records for prospective nuclear targets extending to over 90 fields of data. We have integrated population data with the target database. The target and population databases are the underpinnings of an analytical tool that we have designed to enable us to evaluate different scenarios at current force levels or for smaller proposed levels in the future. This model allows us to evaluate a variety of nuclear strategies and targeting concepts.

Our databases and tools have provided us with a greater appreciation of the complexity of the SIOP process, a process that transforms potential adversaries from flesh and blood into targets and outputs. The scenarios we present in our report have been arrived at through thousands of time-consuming calculations. They determine the levels of damage to targets and the statistical probabilities of civilian casualties depending upon monthly variation in wind patterns, and whether the civilian population is sheltered or in the open.

The major objectives of this initial application of our simulation tool are:

- ▶ To provide an independent, open assessment of the fundamental premises of the current U.S. nuclear war plan, known as the Single Integrated Operational Plan
- ▶ To analyze the levels of damage inflicted by striking nuclear weapons targets with greatly reduced forces
- ▶ To heighten public and policymaker awareness of the present-day consequences of the use of nuclear weapons, including the risks to specific targets in Russia
- ▶ To encourage the adoption of new Presidential guidance that directs the elimination of the SIOP as it is currently defined and practiced, and the deployment of remaining forces at considerably lower alert levels—both essential steps toward deeper reductions in nuclear force levels

Two related objectives should be emphasized as well:

- ▶ To introduce a human context into the debate about nuclear strategies and alternative nuclear force structures
- ▶ To inject some basic honesty into the nuclear debate by providing data that reveals how a counterforce attack could kill almost as many millions of people as a counter-value attack

As the number of strategic nuclear weapons grew during the Cold War, war planners and insiders tended to theorize about what levels of damage and death

a potential adversary (e.g., Soviet Union/Russia) must sustain to be deterred. The measure of sufficiency centered on calculations about how many U.S. weapons would survive after a Soviet/Russian first strike, and the probabilities of achieving high levels of physical destruction against large numbers of dispersed and hardened targets. Absent in this process was any real knowledge about whether the level of damage was perceived by the other side as enough to deter the use of nuclear weapons. All of this theorizing was done in the greatest secrecy, where the characteristics of weapons, the targets, and the content of the nuclear war plan was one of the government's biggest secrets. Even last year during Senate hearings, senior military and civilian leaders in charge of the SIOP refused to answer questions in open or closed testimony regarding how many civilians would be killed in a U.S. nuclear attack against Russia. Perhaps a better approach would be for an open nuclear war planning process that challenged political leaders to account for the reasons behind their nuclear policies and forced them to describe what would happen if nuclear warfare ever occurred.

It is now an article of faith that a counterforce strategy—that is, the targeting of U.S. nuclear weapons against Russian nuclear and military forces—was more rational and moral than a countervalue strategy that targets urban populations. As we will demonstrate, if the United States mounted a strictly counterforce strike today, withholding attacks on cities and population centers, the casualties would still be in the tens of millions. To put it bluntly, the United States needs to face up to the human realities of nuclear weapons, and the consequences of its bloated nuclear arsenal.

Even if the United States chooses to cause tens of millions of casualties, the government could do it with remarkably few weapons. This truth is obscured in the dogma of counterforce, shielded behind walls of secrecy that deny what horrendous human effects a counterforce strike would create. Honesty about the actual effects of the use of nuclear weapons, whether counterforce or countervalue, should force a reevaluation of what is really necessary to deter Russia, or any other adversary, from believing that it could attack the United States with nuclear weapons and avoid devastating retaliation. That same honesty should then spur action to reduce the number of nuclear weapons to minimal levels. In his May 1, 2001 speech at the National Defense University, President George W. Bush said that, "Today's Russia is not our enemy, but a country in transition with an opportunity to emerge as a great nation, democratic, at peace with itself and its neighbors."¹

Regardless of the efficacy or capability of missile defenses, it is time to admit that the existing strategic nuclear arsenal of thousands of warheads is an artifact of another day.

It is easy to assert that no plausible threat exists today or can be foreseen to justify maintaining over seven thousand strategic nuclear weapons, a significant portion of which are on hair-trigger alert. It is more difficult to create an analytical framework that offers a reasoned answer to how many weapons and what kind of planning constitutes deterrence. With our nuclear war simulation model, NRDC has attempted to provide that kind of tool, and as we will demonstrate in the report, our model tells us that today's nuclear policy is not the answer.

Perhaps a better approach would be for an open nuclear war planning process that challenged political leaders to account for the reasons behind their nuclear policies and forced them to describe what would happen if nuclear warfare ever occurred.

AN OVERVIEW

In Chapter Two, we provide a brief review of the current nuclear situation, trace the history and evolution of U.S. nuclear war planning, and describe the process by which the SIOP is constructed. In Chapter Three, we describe the NRDC nuclear war simulation model and target database. Chapter Four focuses on a counterforce scenario that we believe is a close approximation of an option in the U.S. SIOP. In Chapter Five, we compare an attack on Russian nuclear forces with an attack on Russian cities, and we calculate the effects of targeting cities with a modest number of nuclear weapons. In Chapter Six, we conclude with a review of our findings and recommend several policy initiatives that we think should be pursued and implemented.

Our fundamental conclusion is that the U.S. nuclear war plan, as it is currently implemented, is a major impediment to further nuclear arms reductions. If deep reductions are to be achieved in the future we believe that there must be a thorough examination and critique of the SIOP planning process and the underlying assumptions that guide it. NRDC supports the reduction, and ultimate elimination of nuclear weapons. The elimination of the SIOP as it is currently defined and practiced will allow immediate reductions of existing forces to considerably lower alert levels, immediately improving safety and stability. The elimination of the SIOP will facilitate implementation of negotiated and unilateral reductions to levels that serve as the departure point for far deeper reductions and eventual elimination.

What does the elimination of the SIOP really mean? First and foremost it means the elimination of the doctrine of counterforce, that is, the elimination of the requirement to attack hundreds of targets at a moment's notice, with high "probabilities of kill" for each target type. Until the United States finds the right construct to eliminate nuclear weapons, it will undoubtedly possess a force of some type. We recommend that it be of minimal size, capable of surviving attack, and able to inflict sufficient levels of damage that are clearly enough to deter any contemplated nuclear attack on the United States. This report will prove that we can meet all of those goals with a surprisingly small number of weapons. The targets in a contingency war plan and the choreography of their execution are of secondary importance. Even this modest force could hold at risk tens of millions of people.

THE SINGLE INTEGRATED OPERATIONAL PLAN AND U.S. NUCLEAR FORCES

The Single Integrated Operational Plan (SIOP) is the central U.S. strategic nuclear war plan.¹ First drawn up in 1960, it has gone through many changes over four decades and has evolved into a complex and extremely sophisticated document. Nonetheless, it still retains echoes of its origins in the Cold War.

A BRIEF HISTORY OF THE SIOP

For the first fifteen years of the nuclear era, from 1945 to 1960, U.S. nuclear war planning was a haphazard affair with little or no coordination among the services and widespread duplication of targeting.² It took some time after Hiroshima and Nagasaki to institutionalize the operational planning process in the various departments and agencies of the U.S. government. The nuclear war planning process emerged in a time of fast-paced technological change, enormous growth of the nuclear arsenal, improving intelligence capabilities to locate targets in the Soviet Union, intense rivalry among the military services and among the unified and specified commands, all brought to a high boil by the fears, anxieties, and apprehensions of the Cold War.

By the end of the Eisenhower Administration, the question of target planning and its relationship to the roles and missions of various commands demanded the attention of the highest government officials to resolve. In August 1959, the Chairman of the Joint Chiefs of Staff (JCS), General Nathan F. Twining (USAF) prepared a memorandum for Secretary of Defense Neil McElroy proposing that the Strategic Air Command (SAC) be assigned responsibility as an “agent” of the JCS to prepare a national strategic target list and a single integrated operational plan. The proposal stalled as deep divisions within the JCS continued throughout the first half of 1960. In an attempt to resolve the issue, Thomas Gates, McElroy’s successor, took the basic outlines of Twining’s recommendations to President Eisenhower for a decision.

Eisenhower remarked that he would not “leave his successor with the monstrosity” of the uncoordinated and un-integrated forces that then existed.³

In early November 1960, Eisenhower sent his science adviser, George B. Kistiakowsky, to Omaha to examine the existing war plans and procedures. Kistiakowsky presented his findings to the president on November 25. The sheer number of targets, the redundant targeting, and the enormous overkill surprised and horrified the president. There were not going to be any easy answers to the complex problems that confronted planners of nuclear war, then or afterwards. It soon became evident that the “solution” of a single plan might not be the rational instrument to control nuclear planning that Eisenhower had hoped for. Rather it quickly became an engine, generating new force requirements fueled by an ever expanding target list, service rivalry, and demanding operational performance.

In December 1960, after the election but before John Kennedy entered office, the JCS approved the first SIOP for Fiscal Year 1962 (July 1, 1961–June 30, 1962). Known as SIOP-62 it was hastily prepared and basically called for a single plan, under which the United States would launch all of its strategic weapons upon initiation of nuclear war with the Soviet Union.⁴ The single target list included military and industrial targets many of which were in Soviet, Chinese and satellite cities. Expected fatalities were estimated at 360 to 525 million people.

The Kennedy administration came into office in January 1961, and immediately rejected SIOP-62 as excessive, and refused much else of Eisenhower’s national security policy. Secretary of Defense Robert McNamara initiated a series of studies and projects which resulted in SIOP-63, a plan giving the president a series of options and sub-options, with an emphasis against targeting cities and civilian populations. McNamara explained the new counterforce strategy to Congress in early 1962: “A major mission of the strategic retaliatory forces is to deter war by their capability to destroy the enemy’s war-making capabilities.”⁵ Early on, planners recognized the conundrum of retaliating against nuclear forces and the implications of a first-strike became clear. A former McNamara aide was reported to have said, “There could be no such thing as primary retaliation against military targets after an enemy attack. If you’re going to shoot at missiles, you’re talking about first strike.”⁶ It is also true that neither side could ever be sure, then or now, that a counterforce attack would destroy all of the retaliatory capability of the other.

The commitment to counterforce opened the floodgates of service proposals for large budgets and new weapons. In response, McNamara sought to reign in the military through the use of “assured destruction” criteria that set high but limited goals of weapon use. While there was much rhetoric about changes in the declaratory policy of the United States—the one the government publicly presented—the employment or action policy remained fairly intact through the Kennedy and Johnson administrations.

Immediately after the inauguration of President Nixon in January 1970, his national security advisor, Henry Kissinger issued a directive to review the military posture of the United States. The administration wanted to have a greater choice of options rather than just an all out exchange. In the President’s foreign policy message to Congress in February, he asked: “Should a President, in the event of a

nuclear attack, be left with the single option of ordering the mass destruction of enemy civilians, in the face of the certainty that it would be followed by the mass slaughter of Americans? Should the concept of assured destruction be narrowly defined and should it be the only measure of our ability to deter the variety of threats we may face?"

Four years later, after a laborious process, President Nixon issued National Security Decision Memorandum-242 (NSDM-242), "Planning Nuclear Weapons Employment for Deterrence," on January 17, 1974. The new nuclear doctrine became known as the Schlesinger Doctrine, named for Secretary of Defense James Schlesinger who had a major role in shaping it. At the core of the new guidance was an emphasis on planning limited nuclear employment options. "[O]ptions should be developed in which the level, scope, and duration of violence is limited in a manner which can be clearly and credibly communicated to the enemy." All efforts, political and military, had to be used to control escalation. If escalation cannot be controlled and general war ensues, then limiting damage to "those political, economic, and military resources critical to the continued power and influence of the United States and its allies," and destruction of the enemy's resources must be the paramount objectives of the employment plans. Also singled out for destruction were targets that would deny the enemy the ability to "recover at an early time as a major power." Furthermore, the plans should provide for the "[m]aintenance of survivable strategic forces for protection and coercion during and after major nuclear conflict." NSDM-242 also highlighted the importance of the command, control, and communication system. Plans had to deal with direct attacks on the national command authorities themselves and ensure that they could continue to make decisions and execute appropriate forces throughout all levels of combat.

Schlesinger assumed that the expanded application of the forces would increase the credibility of the U.S. deterrent, and in its extended form, to the NATO allies as well. Critics saw it differently. The guidance contributed to the dangerous developments that were increasing the likelihood of nuclear war. The deployment of highly accurate MIRVed missiles on both sides was leading to greater instability in which each side's forces were more threatening to one another.

Despite these criticisms, NSDM-242 and the corresponding documents led to SIOP-5 that took effect on January 1, 1976. Further refinements of the basic strategic doctrine took place in the Carter administration, with Presidential Directive-59 and the Reagan administrations with NSDD-13.⁷

To accompany the planned nuclear weapons buildup that was proposed in the early years of the Reagan administration, Secretary of Defense Caspar Weinberger provided a lengthy Defense Guidance. The guidance called for U.S. nuclear forces to prepare for nuclear counterattacks against the Soviet Union "over a protracted period."⁸ The ruling assumption of the guidance was that in order to deter an aggressive Soviet Union that thought that nuclear wars could be won, the United States would have to believe it as well and create a strategy with the requisite forces to do it. Thus language from the guidance stated, "Should deterrence fail and strategic nuclear war with the USSR occur, the United States must prevail and be able

to force the Soviet Union to seek earliest termination of hostilities on terms favorable to the United States.” With regard to the employment plans, they had to “assure U.S. strategic nuclear forces could render ineffective the total Soviet (and Soviet-allied) military and political power structure through attacks on political/military leadership and associated control facilities, nuclear and conventional military forces, and industry critical to military power.” This meant that our plan had to decapitate the leadership. All in all, waging a nuclear war for a protracted period, being able to accurately hit a wide range of leadership targets, and maintain a “reserve of nuclear forces sufficient for trans- and post-attack protection and coercion” was a very demanding list of what forces were needed in the nuclear war plan. The war plans of the 1980s incorporated these features and while certain aspects have been dropped much of it is retained in the SIOPs of the 1990s and even the most recent ones.

After the disintegration of the Soviet Union and the end of the Cold War, President Clinton’s first Secretary of Defense Les Aspin announced plans for a Nuclear Posture Review.⁹ Approximately a year later, Secretary of Defense William J. Perry, who had replaced Aspin, announced the results of that review.¹⁰ Unfortunately it was not the fundamental examination that the administration promised and the basic assumptions were left intact.¹¹

Three years later, the Clinton Administration began a process to determine a lower level of strategic nuclear forces that it could agree to in a future START III treaty. Not surprisingly, Pentagon nuclear planners and commanders had the greatest influence on the internal deliberations and results. They argued that a level of 2,500 “accountable” warheads (from the 3,500 in START II) would make it impossible for U.S. Strategic Command (STRATCOM) to comply with the existing national guidance on nuclear employment. In response, the Clinton Administration modified the guidance to accommodate existing war fighting demands at lower levels, without changing the fundamental axioms that characterize the current SIOP. Some fanciful Cold War requirements for the United States to “prevail” in a protracted nuclear war were eliminated, but virtually every other aspect of nuclear war fighting doctrine was retained. The core of the nuclear war plan was basically unchanged, but fewer warheads could be accommodated, given the removal of a portion of Russian nuclear forces, improved weapons reliability and accuracy, and a new flexibility and adaptability in matching warheads with targets.

Despite the end of the Cold War, two features of the SIOP remain intact: it continues to be one of the most secret documents in our government, and it is extraordinarily complex. Retired General George (“Lee”) Butler, former commander of Strategic Command, responsible for preparation of the SIOP at the end of the Cold War, said:

It was all Alice-in-Wonderland stuff . . . an almost unfathomable million lines of computer software code . . . typically reduced by military briefers to between 60 and 100 slides . . . presented in an hour or so to the handful of senior U.S. officials . . . cleared to hear it.¹²

Butler has said that presidents have only a superficial understanding of nuclear war planning and of the consequences of executing an attack. Furthermore, Congress

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is powerless to influence national security policy with regard to the SIOP. Senator Dale Bumpers (D-AR) complained to Secretary of Defense Dick Cheney during the FY 1991 appropriations hearings of the impossibility of Congress discharging its constitutional mandate of oversight in light of the secrecy and complexity of the war plan:

I don't see how this Committee can deal . . . with strategic technology and strategic weaponry and know, considering the choices—and that's what we're up against here, we're talking about choices and priorities—how can we do that without knowing what the SIOP is which is being crafted by a bunch of people—not just you and others—but an awful lot of people who never appear before this Subcommittee.¹³

Certain information about and associated with the SIOP has its own level of classification, designated SIOP-ESI (Extremely Sensitive Information). The SIOP occupies a special place among all of the government's secrets. As one observer noted, "even in sophisticated strategic literature the SIOP is spoken of with reverential, almost Delphic awe."¹⁴

THE SIOP PLANNING PROCESS

Creating the SIOP follows a clear and precise process. First the president establishes a guidance that lays out concepts, goals, and guidelines. The most current guidance is Presidential Decision Directive-60 (PDD-60), signed by President Clinton in November 1997. Based upon the guidance, the Secretary of Defense produces the Nuclear Weapons Employment Policy, or NUWEP. The NUWEP establishes the basic planning assumptions, attack options, targeting objectives, the types of targets within various categories, targeting constraints, and coordination with theater commanders. It is then sent to the Joint Chiefs of Staff where it is refined into a more detailed and elaborate set of goals and conditions that becomes the Joint Strategic Capabilities Plan (JSCP), Annex C (Nuclear)—a document of approximately 250 pages—which contains targeting and damage criteria for the use of nuclear weapons. The JCS then sends the JSCP to Strategic Command in Omaha, Nebraska where it is transformed into an actual war plan that becomes the Single Integrated Operational Plan. It is at this level that words are converted into a plan of action. As a former Deputy Director of the Joint Strategic Target Planning Staff has written, it is "in the implementation that the true strategy evolves, regardless of what is generated in the political and policy-meeting rooms of any Administration."¹⁵

Throughout the Cold War, the SIOP focused primarily on the Soviet Union. Today most of the weapons in the war plan still target Russia, but other countries are included as well. The SIOP is not one plan or one option, but a set of plans and a series of options constructed from a single target set contained in the National Target Base (NTB).

The U.S. intelligence community has developed a list of some 150,000–160,000 military targets worldwide. Called the Modified Integrated Database (MIDB) it replaced the Integrated Database (IDB), which in turn replaced the Cold War Target Data Inventory (TDI). Based upon the guidance, USSTRATCOM selects as potential

targets for nuclear weapons various subsets of the modified IDB—called the National Target Base (NTB). This National Target Base contained about 16,000 targets in 1985, and declined to 12,500 at the end of the Cold War. According to our sources, as a consequence of President Clinton’s guidance, PDD-60, the number of targets in today’s National Target Base is closer to 2,500, with some 2,000 of these targets in Russia, 300 to 400 in China, and 100 to 200 located elsewhere.¹⁶

Clinton’s PDD-60 provided new guidelines for targeting U.S. nuclear weapons, replacing National Security Decision Directive-13, signed by President Reagan in 1981.¹⁷ According to Robert G. Bell, then senior director for defense policy at the National Security Council (NSC), PDD-60 “remove[d] from presidential guidance all previous references to being able to wage a protracted nuclear war successfully or to prevail in a nuclear war.”¹⁸ The new directive, “nonetheless calls for U.S. war planners to retain long-standing options for nuclear strikes against military and civilian leadership and nuclear forces in Russia,” and “the directive’s language further allows targeters to broaden the list of sites that might be struck in the unlikely event of a nuclear exchange with China.”¹⁹

The SIOP planning process occurs in a series of stages. The major steps are:

► **Target development**

► **Desired Ground Zero (DGZ) Construction:** Grouping installations into aimpoints for weapon allocation, and compiling the coded aimpoints into the National DGZ List (NDL). DGZs are characterized in terms of time sensitivity, location, hardness, priority, defenses, and damage requirements

► **Assignment:** Includes the following steps:

- *Weapon Allocation:* Assignment of ICBM and SLBM warheads in an initial strike, and aircraft bombs and cruise missiles in a generated-alert strike or follow-on strike to specific aimpoints
- *Weapon Application:* Allocation and assignment of specific warheads on specific delivery systems to the DGZ, including setting timing, development of aircraft routes, consideration of defenses, etc.
- *Timing and Deconfliction:* The choreography of the attacks is analyzed to insure there are no conflicts among warhead detonations and flight plans

► **Reconnaissance Planning**

► **Analysis:**

- *War Gaming*
- *Consequences of Execution (C of E) Analysis:* Damage assessments, including physical damage, fatalities, population at risk from prompt and delayed nuclear effects, force attrition, and the degree the plan meets guidance

► **Document Production**

The SIOP planning process traditionally took 14 to 18 months to accomplish (the timeline for SIOP-94 was 67 weeks). A Strategic Planning Study begun in 1993 to analyze the Strategic Warfare Planning System made recommendations to streamline the process to reduce the timeline by as much as two-thirds.

The current SIOPs are named for the fiscal year that they enter into force. Prior to SIOP-93, SIOP naming was based on an alphanumeric system tied to the presidential decision document in effect on the day of plan implementation. The last SIOP plan under this numbering system was designated SIOP-6, Revision H, or SIOP-6H. In FY 1993, the fiscal year numbering system went into effect. The first SIOP under this numbering system was SIOP-93, which was prematurely put in place three months early in June 1992.

During the 1990s, each revised SIOP entered into force at the beginning of the fiscal year (October 1). Accordingly, SIOP-99 entered into force on October 1, 1998, the beginning of FY 1999. If the SIOP requires major revisions more than once a year, the plan is designated by adding a letter to the year (e.g., SIOP-99A).²⁰ The more formal designation for the current SIOP is USCINC STRAT OPLAN 8044-96, Change 1, November 8, 1999, distributed in April 2000.

THE MAJOR ATTACK OPTIONS

Within the SIOP, there are various options available to the President, who has sole legal authority to launch a nuclear attack. As we understand it, there are four basic counterforce strike options.²¹ In the past they were called Major Attack Options (MAOs)-MAO -1, -2, -3, and -4. For the purpose of this NRDC report, we also use the term Major Attack Options for our own simulation, although we acknowledge that the actual MAO and our approximation are different. Also included in the war plan are other options for the use of nuclear weapons at lower levels. These are termed Limited Nuclear Options (LNO), Regional Nuclear Options (RNO), Directed Planning Options (DPO), and Adaptive Planning Options (APO). Some options differ depending on the alert levels of U.S. and Russian strategic forces. It has been reported that there are about 65 "limited attack options" requiring between two and 120 nuclear warheads.²² The exact term and the numbers may have changed, but a set of options similar to these exists today. The target countries include Russia, China, North Korea, and presumably other nations. Additional "adaptive" options also have been newly created in the 1990s; these include both major and minor generic nuclear war plans that respond to unforeseen scenarios.

As part of the ongoing evaluation of the SIOP, the U.S. war plan is pitted against a hypothetical Russian counterpart known as the RISOP or Red Integrated Strategic Offensive Plan. Like the SIOP, there is a RISOP produced each fiscal year. The SIOP and RISOP engage in simulated combat using sophisticated computers and programs to determine what might happen. Recent data about population and weather as well as military forces are important elements of the game. Analysis of the results and consequences of the interaction are studied to discover what weaknesses and stresses there are in the SIOP so that the real SIOP can be enhanced. In an April 1999

USSTRATCOM briefing, the Red countries included Russia, China, North Korea, Iran, Iraq, Syria, and Libya.²³ Almost three-dozen countries made up the Blue/Gray team led by the U.S.²⁴

In the United States, the JCS requirements dictate the number of nuclear weapons in the active inventory. These requirements state that the nuclear forces must be prepared to execute the full range of nuclear attack options outlined in the President's national nuclear guidance, and detailed in ancillary documents of the Secretary of Defense, JCS, and unified military commands. These requirements are defined by the ability of the forces to carry out a series of major and minor attack options. The Major Attack Option-1 (MAO-1) is the most demanding major counterforce attack option available to the President, should he order the use of nuclear weapons against Russian nuclear forces. This attack calls for the use of over one thousand U.S. nuclear warheads targeted against Russian nuclear forces, all of the Russian ICBM silos, road-mobile and rail-mobile ICBMs, submarine bases, primary airfields, nuclear-warhead storage facilities, the nuclear weapon design and production complex, and critical command and control facilities. MAO-1 spares the political leadership and a portion of the military leadership—to allow for intra-war negotiations—and to avoid, as much as possible, cities and urban areas. Under SIOP-99, the number of individual targets in MAO-1 is thought to be in the 1,000–1,200 range, or about one-third of the total number in the current NTB.²⁵ The number of nuclear weapons required to exercise this option would be somewhat greater.

Despite significant reductions in the number of nuclear warheads that began in the mid-1980s, the process of planning for large-scale nuclear war against Russia remains essentially unchanged.

Other major attack options are even more extensive, adding additional targets up to, and including a full-scale attack against Russian nuclear forces, leadership, and the economic and energy production infrastructures. MAO-2 includes the basic counterforce option (MAO-1), plus other military targets, such as conventional ground forces and secondary airfields. MAO-3 adds leadership, and MAO-4 includes economic targets, which through nodal analysis have been reduced from hundreds of factories to those concerned with weapons assembly, and energy production and distribution. The actual targets and the details of the targeting plans developed by USSTRATCOM remain highly classified.

The introduction of each revised SIOP is at once entirely routine and, in this day and age, utterly remarkable. Despite significant reductions in the number of nuclear warheads that began in the mid-1980s, the START arms control negotiations and treaties, the official Russian-American cooperative programs, the missile “detransferring” agreements, and other measures to reduce the likelihood of nuclear war, the process of planning for large-scale nuclear war against Russia remains essentially unchanged.

Several recent statements from civilian and military officials reflect this continuity. In May 2000, the Senate Armed Services Committee held a hearing to address nuclear war planning for the first time since the end of the Cold War. Several Clinton administration witnesses defended the status quo. For example Under Secretary of Defense for Policy Walter B. Slocombe said:

Our overall nuclear employment policy [states that] the United States forces must be capable of and be seen to be capable of holding at risk those critical assets and capabilities that a potential adversary most values.²⁶

At the same hearing, Admiral Richard Mies, Commander in Chief of U.S. Strategic Command, responsible for all strategic nuclear forces and preparation of the SIOP, said:

Our force structure needs to be robust, flexible and credible enough to meet the worst threats we can reasonably postulate. Our nation must always maintain the ability to convince potential aggressors to choose peace rather than war, restraint rather than escalation, and termination rather than conflict continuation.

More recently, the Chiefs have noted they are “concerned about arms reductions that reduce the flexibility in strategic deterrence and put at risk maintaining all three legs of the Triad [i.e., ICBMs, SLBMs, and bombers].”²⁷

ARMAMENT DEMANDS OF THE SIOP

Despite the fact that the Cold War ended more than a decade ago, to implement their respective war plans today the United States and Russia continue:

- ▶ To maintain enormous numbers of deployed nuclear weapons
- ▶ To maintain thousands of nuclear warheads on hair-trigger alert
- ▶ To retain several thousand non-deployed warheads as a “hedge” to redeploy in a future arsenal
- ▶ To store huge inventories of nuclear warhead components

The United States currently maintains an active inventory of over 7,000 strategic nuclear warheads, 1,600 non-strategic warheads, and another 2,000 warheads in an inactive or hedge status. The Department of Energy (DOE) keeps in storage over 12,000 intact plutonium “pits” from nuclear warheads, and an estimated 5,000–6,000 “canned subassemblies”—the thermonuclear component or secondary stage of a two-stage nuclear weapon. Though intercontinental bombers were removed from day-to-day alert in 1991, land-based missiles and strategic submarines maintain a Cold War level of operation.

In an effort to keep pace with the U.S. and to respond to its existing war plan, Russia has kept a sizable arsenal of its own. Russian nuclear forces include some 10,000 active nuclear warheads—about 6,000 strategic and 4,000 non-strategic. Overall, the number of Russian warheads is thought to be around 20,000, with 10,000 of those inactive, mostly non-strategic types (e.g., short-range missiles, naval weapons, or air-delivered weapons for short-range aircraft). These short-range, non-strategic weapons dominate a Russian “hedge,” if it exists. Russian heavy bomber forces pale in comparison to U.S. forces, and submarine patrols are infrequent. The land-based missile force remains the core of Russian strategic capabilities, and at a high level of alert, is presumably able to attack with some 3,000 warheads at a moment’s notice.

In most respects, strategic nuclear forces are postured much like they were during the Cold War. The Presidents of the United States and Russia each retain the capability to launch nuclear weapons against each other’s country in a matter of minutes

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using land-based and sea-based ballistic missiles and strategic bombers (Russian strategic submarine missiles could be launched from pier-side or local waters). A military aide to each president, never more than a few steps away, carries a briefcase—in the United States it is known as the “football,” in Russia as the *cheget*—containing descriptions and launch procedures for a wide range of nuclear attack options contained in the SIOP and the Russian equivalent. The options are believed to range from the use of a few weapons to the unleashing of thousands of them.

As U.S.-Soviet relations warmed at the end of the Cold War, the trend was to make these war plans more “rational” and reduce forces. Yet despite improvements, in U.S.-Russian relations, reductions have stalled and nuclear arsenals remain enormous, with thousands of intercontinental weapons on instant alert. The Strategic Arms Reduction Treaty (START) process has been deadlocked for some time. The United States and Russia have agreed to negotiate to levels of 2,000 to 2,500 “accountable warheads” under START III, but no formal negotiations have occurred. In November 2000, Russia said it was willing to consider 1,500 strategic nuclear warheads for each side, and Russian President Vladimir Putin has indicated that Russia was ready to consider even lower levels than this. President Bush has expressed his commitment to quickly reduce the level of U.S. forces—what he has called “relics of dead conflicts”—to lower levels “consistent with our national security needs.”²⁸

THE SIOP AND DETERRENCE

National security needs in the past have always meant fealty to the secret dictates of the SIOP, and hence the retention of large numbers of weapons for counterforce nuclear war fighting. The SIOP has long been premised on maintaining the perception of a credible U.S. capability to threaten first-use of nuclear weapons to stave off a conventional military defeat or to terminate a regional conflict on terms favorable to the United States and its allies. Sustaining the credibility of this threat has inexorably generated military requirements to attack preemptively any and all Soviet/Russian nuclear forces that might be employed in retaliation against such limited U.S. nuclear strikes, up to and including a massive preemptive strike on the entire Soviet/Russian nuclear force and target base.

There are inherent discrepancies between the nuclear declaratory policy and the nuclear employment policy of most countries, and the United States is no exception. U.S. declaratory policy is what officials say publicly about how nuclear weapons would be used. During the Cold War, official public statements usually suggested that the United States would employ its strategic nuclear arsenal only in retaliation against a Soviet nuclear “first-strike.” But this rationale poses a logical disconnect that suggests an unsettling theory. If the Russians attacked first, there would be little left to hit in retaliating against their nuclear forces, and even less by the time the U.S. “retaliatory” attack arrived at its targets. Many Russian missile silos would be empty, submarines would be at sea, and bombers would be dispersed to airfields or in the air. Ineluctably, the logic of nuclear war planning demands that options exist

to fire first. Thus the U.S. President retains a first-strike option, regardless of whether he has any such intention or not. The Soviet Union was faced with a similar dilemma and must have come to similar conclusions. As a consequence, therefore, both sides' nuclear deterrent strategies have "required" large and highly alert nuclear arsenals to execute preemptive strike options.

Another credibility gap exists within the U.S. government between the secret dictates of the SIOP (and other non-strategic nuclear war plans), and what an American president might order in "defense" of American and allied interests. After the use of just two nuclear weapons at Hiroshima and Nagasaki in World War II, nuclear first-strikes large or small have not been within the moral choices of American presidents, even when American or allied forces have been on the verge of defeat on the conventional battlefield. Proponents of maintaining such a threatening "first-use" nuclear deterrent posture argue that the executive's long record of moral and political resistance to ordering nuclear first-strikes under any circumstances does not negate the nuclear war plan. Instead, they argue that the *mere existence* of such threatening preemptive capabilities imposes a high degree of caution on any potential adversaries' conduct.

Whether or not this nuclear-war fighting theory of deterrence has any merit, all sides agree that the geopolitical confrontation that spawned the growth of nuclear arsenals and the creation of exotic war plans has faded into history. The current SIOP truly is a Cold War relic of an earlier era. The strategic rationale for maintaining a capability for graduated nuclear attacks and massive preemptive strikes on Russian nuclear forces has evaporated. The "expansionist" and hostile Soviet "evil empire," bent on conquest and subversion in Western Europe and elsewhere, no longer exists, and thus "extended" deterrence outlined in the SIOP is no longer needed as well.

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