



The Future of the Non-Proliferation Treaty and U.S. Nuclear Weapons Policy

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Abstract

This thesis addresses the viability of the Treaty on the Non-Proliferation of Nuclear Weapons – NPT for short – in light of U.S. nuclear weapons policy. Acknowledging the unique position and influence of the United States, the thesis sets out to assess whether U.S. nuclear weapons policy is compatible with a strong and effective NPT, in what ways U.S. nuclear policy underpins the role and strength of the NPT, how this policy could be detrimental to the viability of the treaty, and whether U.S. nuclear weapons policy should and could be changed in order to align with the NPT. Based on the acknowledgement that nuclear disarmament is the key venue for U.S. impact on the NPT, the thesis seeks to answer the research questions by analysing U.S. nuclear weapons policy in light of the so-called “Thirteen Steps” for nuclear disarmament and non-proliferation. In short, the thesis concludes that current U.S. nuclear weapons policy is incompatible with a strong and effective NPT because this policy undermines the bargain that lies at the heart of the NPT: states without nuclear weapons agreed to forsake them; states with nuclear weapons agreed to eliminate them. In order to mediate harmful aspects of U.S. nuclear weapons policy, the United States should actively recommit itself to nuclear disarmament.

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Abbreviations and acronyms

ABMT	Anti-Ballistic Missile Treaty
BMD	Ballistic missile defence
CCCW	Convention on Certain Conventional Weapons
CTBT	Comprehensive Nuclear Test-Ban Treaty
CTBTO	Comprehensive Nuclear Test-Ban Treaty Organisation
CTRP	Cooperative Threat Reduction Program
DNWS	De facto nuclear weapon state
DOD	Department of Defence
DOE	Department of Energy
DPRK	Democratic People's Republic of North Korea
FMCT	Fissile Material Cut-off Treaty
GTRI	Global Threat Reduction Initiative
HEU	Highly enriched uranium
IAEA	International Atomic Energy Agency
ICBM	Intercontinental ballistic missile
ICJ	International Court of Justice
IMS	International Monitoring System
LEU	Low-enriched uranium
LTBT	Limited Test-Ban Treaty
MIRV	Multiple independently targetable re-entry vehicle
NNSA	National Nuclear Security Administration
NNWS	Non-nuclear weapon state
NPR	Nuclear Posture Review
NPT	Non-Proliferation Treaty
NSS	National Security Strategy
NSWMD	National Strategy to Combat Weapons of Mass Destruction
NWS	Nuclear weapon state
NWSP	Nuclear Weapons Stockpile Plan
OPLAN	Operations Plan

PAROS	Prevention of an Arms Race in Outer Space
PMDA	Plutonium Management and Disposition Agreement
PNI	Presidential Nuclear Initiative
PRC	People's Republic of China
RNEP	Robust Nuclear Earth Penetrator
RRW	Reliable Replacement Warhead
RRWP	Reliable Replacement Warhead Program
SLBM	Submarine-launched ballistic missile
SORT	Strategic Offensive Reductions Treaty
SSBN	Ballistic missile submarines ¹
SSP	Stockpile Stewardship Program
START	Strategic Arms Reduction Treaty
UN	United Nations
WMD	Weapons of mass destruction

¹ The SS stands for “ship submersible,” the B denotes “ballistic missile” and the N denotes “nuclear powered.”

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1. Introduction

This thesis addresses the viability of the Treaty on the Non-Proliferation of Nuclear Weapons – Non-Proliferation Treaty (NPT) for short – in light of U.S. nuclear weapons policy.

Although the viability of the NPT does not depend on the United States alone, the unique position and influence of the United States suggests that U.S. nuclear weapons policy has great potential impact on the NPT.² Historically, the United States has been a major driving force in most international non-proliferation efforts, including the negotiation and implementation of the NPT.³ Together with the Soviet Union and the United Kingdom, the United States was the first state to sign the NPT, thereby committing itself to the proclaimed goal of a world free of nuclear weapons. However, the United States was also the first state to develop, and the first and only actor to date to have used nuclear weapons in war.⁴ It has also been conducting more nuclear tests than all other states put together, and has been developing one of the largest nuclear arsenals in the world.⁵ Today, the nuclear arsenal of the United States counts for over 40 percent of the nuclear weapons in existence.⁶ Moreover, the U.S. and Soviet doctrines of mutually assured destruction, famously satirised in Stanley Kubrick’s black comedy *Dr. Strangelove*,⁷ held the world hostage and spelled the end of human civilisation during the so-called Cold War.⁸ Since the end of the Cold War, the United States has been the leading military power in the world by far, has the world’s largest economy, and is the most influential actor in global affairs.⁹ U.S. policies are followed, and deeply affect the policies of every state in the world. They have an

² Mærli and Lodgaard (2007)

³ Bunn (2006)

⁴ The United States dropped a nuclear bomb on the Japanese city of Hiroshima on August 6, 1945 and another bomb on Nagasaki on August 9, 1945. The necessity of dropping the nuclear bombs to achieve victory over the Japanese Empire remains controversial.

⁵ More than 2.000 nuclear test explosions have been conducted around the world. Over 1.000 of them were conducted by the United States. For a complete list of global distribution and geography of nuclear weapons tests, see Diehl and Moltz (2008:215).

⁶ This number is only surpassed by Russia, which possesses over 50 percent of the world’s nuclear weapons (SIPRI Yearbook 2008).

⁷ The full title of the film is *Dr. Strangelove or: How I Learned to Stop Worrying and Love the Bomb* (1964). The film depicts how an irrational U.S. Air Force general orders a nuclear first strike on the Soviet Union, leading to nuclear apocalypse.

⁸ The term “Cold War” refers to the state of conflict between the United States and the Soviet Union from the mid 1940s to the early 1990s. However, the term is somewhat misleading. Although the conflict did not escalate into an official state of war between the two parties, the United States and the Soviet Union engaged in many proxy wars, such as in Korea, Vietnam and Afghanistan.

⁹ Diehl and Moltz (2008:75), Campbell (2005:18)

impact on everything from global and regional security to economic stability, international norms and practices, and the sustainability of whatever global consensus exists.¹⁰ The nuclear weapons sphere is no exception.¹¹ U.S. nuclear weapons policy is scrutinized closely abroad, and has a major impact on nuclear efforts elsewhere.¹² Hence, the United States has decisive leverage on the viability of the NPT, for good and for worse.¹³

With all but a handful of states being signatories, the NPT is the most widely adhered to multilateral arms control agreement in history.¹⁴ Over the years the treaty has given rise to an international nuclear non-proliferation regime, of which the NPT constitutes the backbone.¹⁵ The NPT consists of several legally binding and mutually reinforcing obligations and commitments pertaining to both nuclear non-proliferation and to nuclear disarmament.¹⁶ The treaty is based on a bargain which obligates states which had not acquired nuclear weapons prior to 1967 to forsake nuclear weapons. In return those states which had acquired nuclear weapons prior to 1967, including the United States, promised to rid themselves of their nuclear arsenals. By establishing an international norm of peaceful and responsible nuclear behaviour, the NPT poses an obstacle to nuclear anarchy.¹⁷ Despite its shortcomings, the NPT has been highly successful in stemming nuclear proliferation since the treaty entered into force in 1970.¹⁸ However, the viability of the NPT is not guaranteed.¹⁹

1.1. Research questions

Acknowledging the role and possible impact of U.S. nuclear weapon policy on the NPT, the thesis sets out to answer the following research questions:

1) Is U.S. nuclear weapons policy compatible with a strong and effective NPT?

¹⁰ Roche (2004), Campbell (2005:18, 23)

¹¹ Bunn (2006:20)

¹² Campbell (2005:20)

¹³ Blix (2008:18), Lodgaard (2007)

¹⁴ Mærli and Lodgaard (2007)

¹⁵ Mærli and Lodgaard (2007), Bunn (2006)

¹⁶ Persbo (2001)

¹⁷ Goldblat (2007:29)

¹⁸ Bunn (2005)

¹⁹ Bunn (2006)

2) *In what ways does U.S. nuclear policy underpin the role and strength of the NPT, and how could this policy be detrimental to the viability of the treaty?*

3) *Should and could the nuclear policy of the United States be changed in order to align with the NPT?*

1.2. Relevancy to peace studies

Although few question the destructive power of nuclear weapons, some claim that nuclear weapons and their proliferation can induce “negative peace;” i.e. the absence of war. Operating with a core realist assumption that war becomes less likely as the costs of war rise in relation to possible gains,²⁰ they claim that nuclear weapons possession deters potential aggressors from deliberately resorting to war because the costs of nuclear retaliation is unacceptably high.²¹ However, as critics of nuclear deterrence theory point out, one cannot presuppose that all actors perform a cost-to-gain ratio analysis before opting for war, nor that war cannot occur unless political leaders deliberately decide to embark on such a course.²² Although governments intend to behave rationally, they are influenced by factors which may conflict with or even hamper their ability to make rational decisions. Moreover, non-state actors are conceptually outside the bounds of nuclear deterrent because they have no “return address” to which to deliver a retaliatory nuclear strike.²³ Thus, we do not know whether deterrence describes a condition that actually exists.²⁴ What we do know, is that even if the risk of nuclear weapon use may be low, the probability of use, whether by states or non-state actors, cannot be zero.²⁵ Instead of preserving “negative peace,” the risk of deterrence failures and deliberate or accidental nuclear launches is likely to increase with rising numbers of nuclear weapon possessors, critics argue.²⁶ According to Mohamed ElBaradei, director of the International Atomic Energy Agency (IAEA) and 2005 Nobel Peace Prize Laureate, the risk of nuclear weapon use and the need for nuclear arms control

²⁰ Sagan and Waltz (2003)

²¹ Dougherty and Pfaltzgraff (2001:354)

²² The major debate on this issue has been between Kenneth Waltz, who argues that “more may be better,” and Scott Sagan, who argues that “more will be worse.” These positions have respectively become known as *positivist* (pro-proliferation) and *pessimist* (anti-proliferation). For a full discussion on this matter, see Sagan and Waltz (2003).

²³ Shultz, Perry, Kissinger and Nunn (2007)

²⁴ Schell (2007:15)

²⁵ Quinlan (2007:9)

²⁶ Sagan and Waltz (2003)

has never been greater.²⁷ In order to avoid the potentially catastrophic consequences of nuclear war, as described in chapter 1.4, nuclear weapons should not proliferate, but be abolished, nuclear pessimists argue.²⁸ Based on this view, the NPT is the only existing legal barrier against the proliferation of nuclear weapons, and the only multilateral arms control agreement which contains a binding commitment to the goal of complete nuclear disarmament.²⁹

Further, the NPT is not only important for the preservation of negative peace in the nuclear sphere, but for the building and sustainability of “positive peace.”³⁰ While nuclear deterrence is based on mutual distrust and the constant threat of violence, which is incompatible with the establishment of positive peace, the NPT is a commitment of cooperation, goodwill and trust between neighbouring and rivalling states.³¹ By creating an international norm against nuclear proliferation, the NPT also induces some degree of predictability into international relations that makes it easier for states to trust each other and build “positive peace.” In order to ensure the viability of the NPT, specific challenges to its viability must be identified and overcome. This thesis hopes to make a modest contribution to that end.

1.3. Structure of the thesis

Following the introduction, chapter 2 provides the theoretical background and framework for answering the research questions. It presents the NPT in detail, and explores how the viability of the treaty is affected by different types of pressures. The theoretical chapter has been placed prior to the methodological chapter because the research design used to answer the research questions derives from the theoretical understanding of the NPT and the dynamics affecting the viability of the treaty.

The research design is based on the acknowledgment that nuclear disarmament is the key venue for U.S. impact on the viability of the NPT. Methodological reflections on how I planned and

²⁷ Spiegel interview with Mohamed ElBaradei (2007)

²⁸ Sagan and Waltz (2003)

²⁹ Persbo (2001:2)

³⁰ In peace studies, it is common to differentiate between *negative peace* and *positive peace*. Negative peace can be defined simply as the absence of war. It is a static definition of peace. Positive peace, on the other hand, is a more dynamic conception of peace. Positive peace is not only the absence of war; it is the continuous transformation of conflict through cooperation and non-violent means. Because it requires trust between parties, positive peace is by far the most difficult type of peace to achieve (Galtung, 1996).

³¹ Bunn (2006:78)

executed the research study are briefly laid out in chapter 3. Here it is argued that the so-called Thirteen Steps are well suited as a tool for answering the research questions.

Chapter 4 provides a detailed analysis of U.S. nuclear weapons policy in light of the Thirteen Steps.

Since the dynamics affecting the strength and efficiency of the NPT are discussed thoroughly in the theoretical chapter, the findings of the analysis and the conclusion have been merged into one chapter (chapter 5). Here the research questions are answered by discussing the analytical findings within the theoretical framework presented in chapter 2. Some of the findings are also used to look ahead.

1.4. Definitions

Nuclear weapons, the proliferation of which the NPT is to halt, are not defined in the treaty. However, an authoritative definition already existed at the time the NPT was under negotiation.³² In Article V of the 1967 *Treaty on the Prohibition of Nuclear Weapons in Latin America and the Caribbean*, nuclear weapons are defined as “any device which is capable of releasing nuclear energy in an uncontrolled manner and which has a group of characteristics that are appropriate for use for warlike purposes.”³³ Many effects of nuclear weapons are still unknown, but the overall potential of nuclear weapons to inflict violence on humans and the planetary environment we live in is hard to overstate. In addition to the shock and heat caused by the immediate blast, which also conventional weapons can produce, nuclear weapons cause long-term effects which conventional weapons cannot produce, such as radiation.³⁴ Radioactive fallout can cause tumours, leukaemia and genetic damage.³⁵ Some scholars also argue that a nuclear war would lead to a depletion of the ozone layer surrounding our planet, allowing more ultraviolet radiation from the sun through the atmosphere to the surface of the Earth, where it would produce dangerous burns and a variety of potentially dangerous ecological effects.³⁶ Others argue that a

³² Goldblat (2007:10), Persbo (2001:5)

³³ *Treaty on the Prohibition of Nuclear Weapons in Latin America and the Caribbean* (1967)

³⁴ www.atomicarchive.com/Effects

³⁵ Radioactive fallout is radioactive particles being dispersed over the earth during the hours, days and possibly months following a nuclear explosion.

³⁶ www.atomicarchive.com/Effects

nuclear war could cause a “nuclear winter,” which could result in a mass extinction of life on Earth, including humankind.³⁷

Some nuclear weapon designs are highly complex, but basic design concepts are well understood and widely available.³⁸ By far the most complicated part of building nuclear weapons is producing sufficient amounts of weapon-usable *fissile materials*. Fissile material is material that can sustain an explosive fission chain reaction, notably plutonium of any isotopic composition and highly enriched uranium (HEU).³⁹

Nuclear weapon states (NWSs) are defined in Article IX of the NPT as a state which has manufactured and exploded a nuclear weapon or other nuclear explosive device prior to January 1, 1967. Thus, only the United States, the Russian Federation, the United Kingdom, the Republic of France and the People’s Republic of China (PRC) are considered to be NWSs.⁴⁰ All other states are considered to be *non-nuclear weapon states* (NNWSs), and there are no provisions for them to accede to the NPT as anything other than a NNWS⁴¹. The problem with this definition, as I will discuss in more detail in chapter 2.4.3, is that there are states other than the United States, Russia, the United Kingdom, France and the PRC that possess nuclear weapons. To date, these include Israel, India, Pakistan and recently the Democratic People’s Republic of North Korea (DPRK).⁴² To differentiate these states from the treaty defined NWSs, I refer to Israel, India, Pakistan and the DPRK as *de facto nuclear weapon states* (DNWS).

³⁷ The nuclear winter theory holds that nuclear explosions will set off firestorms over many cities and forests within range, resulting in great plumes of smoke and dust being sent aloft into the atmosphere. These thick clouds could block out all but a fraction of the sun's light for a period as long as several weeks. The conditions of semidarkness, killing frosts and subfreezing temperatures, combined with high doses of radiation from nuclear fallout, would interrupt plant photosynthesis and could thus destroy much of the Earth's vegetation and animal life, including bringing humankind to the brink of extinction (www.atomicarchive.com/Effects). For a more detailed presentation of the nuclear winter theory, see Turco, Toon, Ackerman, Pollack and Sagan (1983).

³⁸ For more detailed information on nuclear weapon concepts and designs, as well as the production of nuclear materials, see Cirincione, Wolfsthal and Rajkumar (2005:45-54).

³⁹ The International Panel on Fissile Materials (www.fissilematerials.org)

⁴⁰ The United States tested its first nuclear weapon on July 16, 1945, the Soviet Russia on August 29, 1949, the United Kingdom on October 3, 1952, France on February 13, 1960 and the PRC on October 16, 1964.

⁴¹ Johnson (2004:12)

⁴² Although Israel officially maintains that it will not be the first state to introduce nuclear weapons to the Middle East, the Israeli nuclear weapons program was revealed to the public by former Israeli nuclear technician Mordechai Vanunu in *The Sunday Times* on October 5, 1986. India conducted multiple nuclear weapon tests on May 11 and 13, 1998. Pakistan responded by testing its first nuclear weapon on May 28, 1998. The DPRK demonstrated its nuclear capability through a nuclear test on October 9, 2006.

As implied in its name, the objective of the NPT is to prevent the proliferation of nuclear weapons. There are two types of nuclear proliferation: *horizontal proliferation* and *vertical proliferation*. Horizontal proliferation is used to describe the spread of nuclear weapons to additional states or recipients beyond those states that currently possess them, while vertical proliferation refers to a quantitative or qualitative increase of the nuclear weapons arsenal of a given state⁴³. Correspondingly, there are two types of nuclear non-proliferation. *Horizontal non-proliferation* refers to the prevention of an increase in the number of states possessing nuclear weapons, while *vertical non-proliferation* is used to describe the prevention of an increase in the quantity and quality of the nuclear arsenal of a given state. Vertical-non proliferation is a precondition for *nuclear disarmament*, which not only refers to the prevention of an increase in the quantity and quality of the nuclear arsenal of a given state, but to a reduction in its quantity and quality.⁴⁴

⁴³ Persbo (2001:6-7)

⁴⁴ Because it is hard to assess if a reduction in quantity is nullified by an increase of the quality of nuclear weapons, the term nuclear disarmament refers to a qualitative as well as a quantitative reduction of nuclear weapons (Persbo, 2001:41)

2. The NPT and its viability

In order to answer the research questions, a theoretical understanding of the NPT and its viability is needed. The purpose of this chapter is to provide such a theoretical framework. The chapter begins by briefly presenting the background and history of the NPT. Next, the provisions of the treaty are presented. It is argued that the NPT can be understood as the result of a bargaining process in which states which had not acquired nuclear weapons prior to 1967 were obligated to forsake nuclear weapons, while those states which had acquired nuclear weapons prior to 1967, in return, promised to rid themselves of their nuclear arsenals. Special emphasis is given to Article VI of the NPT, which constitutes an important part of the bargain, but which has been subject to persistent and bitter disagreement throughout the history of the treaty. Acknowledging the successes of the NPT, the dynamics affecting the viability of the treaty are discussed. The chapter does not focus on specific events, but on different categories of pressure which put stress on the NPT and the international non-proliferation regime that it anchors.

2.1. Background and history

Following the conception of a possibly limitless supply of energy, nuclear programs were initiated by several states during the 1930s, including the United Kingdom, Germany, Japan, France, the Soviet Union and the United States.⁴⁵ Peaceful possibilities were soon overshadowed by the potential to unleash unprecedented explosive power for military purposes. During the Second World War, the United Kingdom and the United States combined their efforts to develop nuclear weapons into the U.S.-led Manhattan project. These efforts resulted in the world's first nuclear explosion on July 16, 1945 at the Trinity site in Alamogordo, New Mexico. The destructive potential of this powerful new weapon was revealed to the world by the obliteration of Hiroshima and Nagasaki on August 6 and 9, 1945.

Although the implications of nuclear weapons and the necessity of preventing their future use was there for all to see, early post-war efforts to achieve agreement on nuclear disarmament at a time when the United States alone possessed nuclear weapons failed. Moreover, the demonstration of U.S. nuclear military power accelerated the ongoing nuclear weapons program in the Soviet Union, which succeeded in testing its first nuclear weapon on August 29, 1949 at

⁴⁵ Diehl and Moltz (2008)

Semipalatinsk in Soviet Kazakhstan. On October 3, 1952, the United Kingdom followed by testing a nuclear weapon off the coast of Western Australia, and on February 13, 1960 France too joined the nuclear ranks by conducting a nuclear test in the Algerian Sahara desert. Many other states pursued or consider acquiring nuclear weapons, including Australia, India, Norway, Sweden, Switzerland and Yugoslavia, among others. If the number of states to possess nuclear weapons continued to grow, it was believed that the risks of nuclear war would greatly increase.⁴⁶

In 1961 the General Assembly of the United Nations therefore unanimously approved a resolution on the “Prevention on the wider dissemination of nuclear weapons,” calling on all states to conclude an international agreement to refrain from acquisition and transfer of nuclear weapons.⁴⁷ This was the first step leading to the adoption of the NPT. The nuclear test by the People’s Republic of China (PRC), hostile to both the United States and the Soviet Union, in Lop Nur on October 16, 1964, further catalysed the non-proliferation efforts already under way.⁴⁸ However, although the enormous destructive power of nuclear weapons was undisputed and the moral opprobrium against nuclear weapons was shared by both possessors and non-possessors,⁴⁹ nuclear weapons were also regarded by many states as the ultimate security guarantee.⁵⁰ Operating with an assumption that war becomes less likely as the costs of war rise in relation to possible gains; nuclear weapons were believed to deter potential aggressors because the destructive potential of a nuclear retaliation made the costs of resorting to war unacceptably high.⁵¹ Especially the two rivalling superpowers, the United States and the Soviet Union, based their national security on a nuclear second-strike retaliation capability to deter each other. The nuclear weapon states were therefore only willing to negotiate about a solution that made a fundamental distinction between those states that had already acquired nuclear weapons, and those that had not.⁵² Subsequently, in 1965 the General Assembly adopted a resolution defining five principles on which a treaty should be based.⁵³ Because the United States and its allies disagreed with the Soviet Union and its allies on major points, it took several years before the

⁴⁶ Federation of American Scientists (2007)

⁴⁷ General Assembly Resolution 1665 (1961)

⁴⁸ Diehl and Moltz (2008:14)

⁴⁹ Nye (2005:146)

⁵⁰ Johnson (2003)

⁵¹ Sagan and Waltz (2003), Dougherty and Pfalzgraff (2001:344-397)

⁵² Persbo (2001:3)

⁵³ General Assembly Resolution 2028 (1965)

General Assembly adopted a resolution by which it commended the NPT and expressed the hope for the widest possible adherence to it.⁵⁴ When those differences were resolved, the Soviet Union and the United States, working together, negotiated with the non-aligned members to produce a final treaty draft.⁵⁵ The draft was eventually accepted by almost all states and the NPT was opened for signature in London, Moscow and Washington on July 1, 1967. The NPT entered into force on March 5, 1970.

Since the NPT entered into force in 1970, the number of nuclear powers has risen to nine.⁵⁶ According to George Bunn, this number would have been much higher without the NPT.⁵⁷ Belarus, Kazakhstan, South Africa, and Ukraine gave up their nuclear weapons as a result of the NPT and related efforts.⁵⁸ Moreover, many states that had research programs geared toward learning how to make nuclear weapons joined the NPT and thereby put aside their ambitions.⁵⁹ The treaty was extended indefinitely in 1995,⁶⁰ and all but India, Pakistan and the DPRK have signed it. Today, the NPT constitutes the backbone of an international nuclear non-proliferation regime.⁶¹

2.2. The Non-proliferation treaty

The NPT consists of a series of mutually reinforcing and legally binding obligations and commitments pertaining to both nuclear non-proliferation and disarmament. These obligations

⁵⁴ General Assembly Resolution 2373 (1968)

⁵⁵ Bunn (2006:76-77)

⁵⁶ The nine nuclear powers are the United States, Russia, the United Kingdom, France, the PRC, Israel, India, Pakistan and the DPRK. Also Israel officially denies any nuclear weapon capability, it is believed to have completed its program and deployed nuclear weapons during the late 1960s (Diehl and Moltz, 2008:14). India conducted its first nuclear test explosion on May 18, 1974 at Pokhran in the Thar Desert of Rajasthan. It later confirmed its nuclear capability by conducting a series of tests on May 11 and 13, 1998. These were followed by Pakistan testing its first nuclear weapon on May 28, 1998 in Chagai. The DPRK, the most recent state to do so, conducted a nuclear test on October 9, 2006.

⁵⁷ Bunn (2005)

⁵⁸ Although South Africa joined the NPT as a NNWS in 1991, it was later revealed that it had built and destroyed up to seven nuclear weapons (Diehl and Moltz, 2008). Belarus, Kazakhstan and Ukraine relinquished control of nuclear weapons left on their territory in the wake of the dissolution of the Soviet Union in 1992, transferring them to the Russian Federation, and joined the NPT as NNWSs (Krepon and Scheinman, 2001:626).

⁵⁹ These include Argentina, Australia, Brazil, Canada, Egypt, Germany, Indonesia, Italy, Japan, the Netherlands, Norway, Romania, South Korea, Spain, Sweden, Switzerland, Taiwan, Yugoslavia, and probably a number of other states that did not reveal their interest in nuclear weapons (Bunn, 2006:94-96).

⁶⁰ Final Document of the 1995 NPT Review Conference "Extension of the treaty on the non-proliferation of nuclear weapons"

⁶¹ van Dassen and Mærli (2007:16)

are accompanied by a system of international safeguards and an assurance on the right to peaceful use nuclear technology. The Preamble of the NPT sets out two fundamental principles concerning the application of the treaty.⁶² Firstly, it acknowledges that the existence of nuclear weapons threatens humankind, and ascertains that nuclear weapons should not be proliferated, but be abolished. This means that the NPT identifies *all* nuclear weapons and *any* nuclear proliferation as a threat, regardless of who controls them and to whom or within which entity they proliferate. Secondly, the Preamble states that the peaceful application of nuclear energy should be available to all parties of the treaty.

However, as described in the previous chapter section, the negotiations leading up to the NPT were marked by the reality that some states possessed nuclear weapons, while others did not, and that those possessing nuclear weapons relied heavily on them for their national security. Although all states parties to the NPT in principal are equal, the NPT accepted this discriminatory reality by formally dividing states parties into two groups: NWSs and NNWSs. The main obligation of the NWSs is not to transfer ownership or control to “any recipient whatsoever” of nuclear weapons directly or indirectly (Article I of the NPT). The phrase “any recipient whatsoever” includes not only states, but also non-state entities.⁶³

The main obligation of the NNWSs, on the other hand, is not to acquire nuclear weapons nor to seek or receive assistance in making them (Article II). According to George Bunn, one of the negotiators of the NPT, this provision was as important for many NNWSs as it was for the NWSs because it was a commitment to neighbouring and rivalling states.⁶⁴ In order to verify that the NNWSs fulfil their obligation, they are obligated to submit their nuclear activities to international safeguards (Article III.1). Safeguards include requirements and standards for inspections of their nuclear activities, such as research and power generators, to ensure that nuclear material and technology are not diverted to make weapons.⁶⁵

⁶² Persbo (2001:4)

⁶³ Goldblat (2007)

⁶⁴ Bunn (2006:78)

⁶⁵ The verification functions are performed by the International Atomic Energy Agency (IAEA), which is an autonomous intergovernmental organisation founded in 1957 to promote peaceful uses of nuclear energy (Goldblat, 2007:14). The Article III.2 obligation is met by concluding an IAEA INFCIRC/153-type safeguards agreement with the IAEA. In 1997 an Additional Protocol (INFCIRC/540) to the original safeguards agreements between states parties to the NPT and the IAEA was adopted. The Additional Protocol gives inspectors the right to obtain more

All states parties, NWSs and NNWSs alike, are obligated not to provide nuclear related equipment or material unless the items are subjected to safeguards (Article III.2).⁶⁶ As first set out in the Preamble of the NPT, Article IV reaffirms the “inalienable right” of all parties to the treaty to develop and use nuclear energy for peaceful purposes without discrimination and in conformity with Articles I and II. It also obligates all parties to facilitate the fullest possible exchange of equipment, materials, and scientific and technological information for the peaceful uses of nuclear energy. Further, Article V obligates all signatories to take appropriate measures to ensure that potential benefits from any peaceful applications of nuclear explosives will be made available to the NNWSs parties to the NPT on a non-discriminatory basis.⁶⁷ The undertaking by the states parties to prevent horizontal proliferation, as set out in Articles I-III, corresponds to an obligation to prevent vertical proliferation and to negotiate on effective measures towards nuclear disarmament (Article VI). In addition to these obligations, each party also has the right to conclude regional treaties in order to assure the total absence of nuclear weapons in their respective territories (Article VII), to propose amendments to the treaty (Article VIII), and to withdraw from the treaty if it decides that extraordinary events, related to the subject matter of the treaty, have jeopardised the supreme interests of the state (Article X). “Extraordinary events” are not defined further, leaving it up to each party to decide whether such events have occurred.⁶⁸

2.3. The Bargain

As illustrated by Table 1, there is an asymmetry between the obligations of the NWSs and the obligations of the NNWSs. Firstly, while the NNWSs are prohibited from acquiring nuclear weapons; the possession of nuclear weapons by the NWSs is temporarily tolerated. Secondly, only the NNWSs are obliged to place their nuclear facilities fully under international safeguards. The asymmetry in obligations relating to the acquisition and possession of nuclear weapons is the

information than was previously required, and to request more intrusive physical access the nuclear activities of NNWS (Goldblat, 2007:16). However, the Additional Protocol is only slowly replacing the original safeguard requirements, and is yet not in effect in most states parties to the NPT (Bunn, 2005). As envisaged by the IAEA Statute (Article XII), cases of non-compliance with safeguards agreements are to be reported to the UN Security Council (Goldblat, 2007:23).

⁶⁶ Guidelines for the implementation of Article III.2 are found in IAEA INFCIRC/209, which includes a list of materials and equipment which will not be exported without safeguards.

⁶⁷ To date no provision of nuclear explosion services have been sought or accrued, and Article V has subsequently been overtaken by the 1996 Comprehensive Nuclear Test Ban Treaty (CTBT) which, although not yet in force, prohibits nuclear explosions for both military and civilian purposes (Goldblat, 2007).

⁶⁸ Bunn (2006:78), Goldblat (2005)

most striking. Giving up weapons which at the time of negotiation were touted as the ultimate security guarantee was certainly not an easy decision for any state.⁶⁹ Moreover, forsaking nuclear weapons despite the fact that other states had already acquired such weapons and would be allowed to hold on to them for an unforeseeable time, thus wielding unprecedented power to bring down destruction on any NNWS, seems truly extraordinary.⁷⁰

Table 1: NPT obligations of NWSs and NNWSs⁷¹

NWSs	NNWSs
<i>Nuclear weapons temporarily tolerated</i>	Not acquire nuclear weapons
Not transfer ownership or control of nuclear weapons	Not accept transfer of ownership or control of nuclear weapons
<i>Not subjected to international control</i>	Submit nuclear activities to international safeguards
Not provide nuclear related items unless the items are subjected to safeguards	Not provide nuclear related items unless the items are subjected to safeguards
Facilitate exchange of peaceful nuclear technology	Facilitate exchange of peaceful nuclear technology
Negotiate secession of arms race and nuclear disarmament	Negotiate secession of arms race and nuclear disarmament

In order to explain this asymmetry of obligations, scholars tend to view the NPT as the result of a *bargaining* process in which the NNWSs gained benefits and concessions which made it worthwhile to tolerate the treaty.⁷² In exchange for foregoing nuclear weapons and submitting to safeguards, as illustrated by Table 2, the NNWSs were promised support to enable them to benefit from the peaceful uses of nuclear energy, which became Article IV, and negotiations on nuclear disarmament, which became Article VI.⁷³

⁶⁹ Miller (2007:50), Johnson (2003)

⁷⁰ Miller (2007)

⁷¹ The provision to ensure availability of potential benefits from peaceful nuclear explosions has not been included in the table because it has been annulled by the CTBT.

⁷² Miller (2007), Blix (2008:44)

⁷³ Johnson (2003), Bunn (2005)

Table 2: The NPT Bargain

NNWSs	NWSs
Promised to forsake nuclear weapons	Promised access to nuclear technology and cooperation on the application of nuclear energy for peaceful purposes
Promised to submit to international safeguards	Promised “good faith” negotiations on nuclear disarmament

The provisions to facilitate the exchange of peaceful nuclear technology and to undertake negotiations on nuclear disarmament are in the NPT referred to as obligations of both the NWSs and the NNWSs. However, it can be argued that these obligations first and foremost fall upon the NWSs. Because NNWSs per definition do not have nuclear weapons, the obligation to disarm rests primarily on the NWS. Similarly, the obligation to facilitate the exchange of peaceful nuclear technology rests, at least at the time of negotiation, more heavily on the NWSs because they arguably have made more progress in the nuclear field than most NNWSs. Article IV explicitly states that “parties to the treaty in a position to do so” carry a special obligation in this regard. Also the further development of the application of nuclear energy for peaceful purposes is to take place “especially in the territories of non-nuclear-weapon states parties to the treaty”. That access to and cooperation on peaceful uses of nuclear energy served as an incentive for NNWSs to accept the NPT is also illustrated by Article V. Although the prevailing opinion today is that the peaceful use of nuclear explosives would entail more risks than benefits, at the time of the negotiation there were hopes that the economic benefits from the use of peaceful nuclear explosives might turn out to be impressive. Article V was included in the treaty because the NNWSs did not want to forsake these.⁷⁴

Without this bargain there would have been no treaty,⁷⁵ and it continues to be relied upon as a load-bearing component of the NPT.⁷⁶ However, Article VI, in which the commitment to nuclear disarmament is pertained, is not as straightforward, and has proved to be the most controversial article of the NPT. Persistent and bitter disagreement about the meaning of Article VI has been

⁷⁴ Marks (1975:5)

⁷⁵ Bunn (2006:97)

⁷⁶ Quinlan (2007:8)

central in the history of the NPT.⁷⁷ The following chapter sections therefore deals with Article VI in more detail.

2.3.1. Article VI: the obligation to disarm

Article VI consists of a single equivocal sentence: “Each of the parties to the treaty undertakes to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on general and complete disarmament under strict and effective control.” The vagueness of Article VI makes it difficult to draw any specified legal conclusions of its content. Even though the article gives rise to an obligation to pursue negotiations on nuclear disarmament, views differ on the precise application of it. While the NWSs have argued that the obligation presupposes a reduction of conventional arms before a reduction of nuclear weapons is conceivable, the NNWSs often interpret the obligation as one to commence negotiations on nuclear disarmament independently from negotiations on general and complete disarmament, preferably within a specified timeframe.⁷⁸ In this chapter section I will try to clarify the meaning of Article VI.

Article VI explicitly refers to negotiation in “good faith” on matters relating to vertical non-proliferation and disarmament. “Good faith” is a recognised general principle of law and as such a formal source of international law.⁷⁹ It is an obligation which is widely considered to be central to the entire notion of treaty law and an essential predicate to the effective conduct of international affairs. According to Andreas Persbo, a consistent application of the principle should negate unintended and literal interpretations of texts that lead to one party gaining an unfair or unjust advantage over another party.⁸⁰ Good faith negotiations are to be conducted so that they are meaningful to *all* parties. Abnormal delays cannot be tolerated if negotiations are to be conducted in accordance with the principle of good faith.⁸¹ Hence, the omission of a specific

⁷⁷ Miller (2007:51)

⁷⁸ Persbo (2001:2)

⁷⁹ The principle of good faith is set forth in Article 2(2) of the UN Charter, reflected in the 1970 Declaration on Principles of International Law concerning Friendly Relations and Cooperation between States, and the Final Act of the 1975 Helsinki Conference, as well as embodied in Article 26 of the 1969 Vienna Convention of the Law of Treaties (Persbo, 2001:8).

⁸⁰ Persbo (2001:7-9)

⁸¹ Persbo (2001:43)

reference to a time frame for the attainment of the primary goal of Article VI does not mean that negotiations can be prolonged forever.

To determine the limits of the legal obligation referring to nuclear disarmament, it is helpful to take into consideration the NPT review process. Article VIII of the NPT provides for a conference of parties to the treaty to be held five years after the entry into force of the NPT and further conferences at intervals of five years thereafter to review the operation and realisation of the purposes of the preamble and the provisions of the treaty.⁸² Although the NWSs and the NNWSs have tended to hold different views on the meaning of Article VI, the 1995 NPT Review and Extension Conference produced on the basis of consensus a document called “Principles and Objectives for Nuclear Proliferation and Disarmament.”⁸³ In its preamble this document explicitly emphasises “the complete elimination of nuclear weapons” as a goal of the NPT. The 2000 NPT Review Conference operationalised the document and agreed on a list of practical steps to ensure systematic and progressive efforts aiming at the full implementation of Article VI. One of the steps is the “unequivocal undertaking by the NWSs to accomplish the total elimination of their nuclear arsenals leading to nuclear disarmament, to which all states parties are committed under Article VI.”⁸⁴ This formulation makes no reference to Article VI as a mere obligation to negotiate on nuclear disarmament; rather the formulation implies that the obligation also encompasses a specific and concrete *result* of these negotiations, namely the total elimination of all nuclear arsenals.⁸⁵ The wording also implies that the 2000 NPT Review Conference de-linked the issue of nuclear disarmament from the issue of general and complete disarmament. Although review conferences lack decision-making powers,⁸⁶ under Article 31 and 32 of the Vienna

⁸² To date, seven review conferences have been held between 1975 and 2005. The next review conference is scheduled for 2010.

⁸³ The 1995 NPT Review and Extension Conference resulted in three decisions and a resolution that the parties heralded as a “package deal” (Rydell, 2005). First, the NPT was extended indefinitely, ensuring that its commitments to nuclear disarmament and non-proliferation are permanent obligations. Second, an enhanced review mechanism was created. Third, the parties agreed to a set of principles and objectives for assessing progress in nuclear non-proliferation and disarmament. The last key component of the package deal was the Resolution on the Middle East, which endorsed the creation of a Middle Eastern nuclear weapons-free zone. Certain positive steps by the NWSs before the Review Conference, including the declaration of negative security assurances before the UN Security Council that the NWSs would not use nuclear weapons against NNWSs, as well as a consistent pattern of strong U.S. support for the Comprehensive Test Ban Treaty (CTBT), likely contributed to the successful outcome (Rydell, 2005).

⁸⁴ Step 6 of the Thirteen Steps in the Final Document of the 2000 NPT Review Conference

⁸⁵ Persbo (2001:27-28)

⁸⁶ Johnson (2004:15)

Convention on the Law of the Treaties, it is arguable that documents emerging from NPT review conferences constitute “subsequent agreements” and “supplementary interpretations” that are as authoritative as the NPT text itself.⁸⁷

Other events have also shed light on the obligation of the NWSs to abolish their nuclear arsenals. On July 8, 1996 the International Court of Justice (ICJ), after a request by the UN General Assembly, issued a non-binding advisory opinion on the “Legality of the Threat or Use of Nuclear Weapons.” The Advisory Opinion deals primarily with those issues, but also covers the obligation of the NWSs to disarm their nuclear arsenals. The Advisory Opinion unanimously states that the obligation pertained in Article VI goes beyond that of a mere obligation of conduct; it is an obligation to bring to a conclusion negotiations leading to the precise *result* of nuclear disarmament in all its aspects.⁸⁸

In sum, the obligation under international law to enter into negotiations with a view to arriving at an agreement, the conclusion of the ICJ in its advisory opinion, the reaffirmation by the NWSs of their commitment to pursue nuclear disarmament during the 1995 NPT Review Conference, and the pledge to get rid of nuclear weapons during the 2000 NPT Review Conference, provides strong evidence that Article VI encompasses a “zero solution,” and that any decision to keep on to a few, even a single, warhead for a indefinite future represents a breach of the NPT.⁸⁹ However, the interpretation of Article VI is not simply a narrow and technical legal matter. Nuclear disarmament is considered to be an issue of fundamental importance for many NNWSs and has over the years come to be widely accepted as a central obligation of the NWS.⁹⁰ Although the NWSs tend to disagree with the NNWSs on the meaning of Article VI, they understand that it would be politically incendiary to question or reject the article.⁹¹ Thus, Article VI has importance and relevance, if not undisputed legal force, and continues to be relied upon as

⁸⁷ Miller (2007:61)

⁸⁸ Advisory Opinion of the ICJ on the Legality of the Threat or Use of Nuclear Weapons (1996). My emphasis.

⁸⁹ Persbo (2001:42)

⁹⁰ Miller (2007:62-68), Bunn (2006:78)

⁹¹ Miller (2007:53)

a load-bearing component in the set of bargains that constitutes the NPT.⁹² This is a political reality that affects the commitment of the NNWSs to the treaty.⁹³

2.4. The viability of the treaty

Despite its accomplishments, the viability of the NPT is not guaranteed.⁹⁴ According to Morten Bremer Mærli and Sverre Lodgaard, the NPT is exposed to pressure 1) from *above*, 2) from *within*, 3) from *outside*, 4) as well as pressures from *below*.⁹⁵ As illustrated by Table 3, each category of pressure derives from a different category of actor and refers to a different type of challenge which may undermine the NPT. Although the concept of pressures is a simplification, it is a useful tool to illustrate and analyse the various challenges the NPT faces. The different pressures can relate to each other and can form clusters. The following chapter sections discuss each pressure in more detail.

Table 3: Pressures on the NPT

Pressure from	Refers to	Derives from
Above	The failure to disarm	NWSs
Within	Deliberate manipulation or violation of the treaty obligation to forsake nuclear weapons	NNWSs
Outside	States operating outside the NPT	Non-signatories
Below	The non-state paradigm	Non-state actors

2.4.1. Pressure from above

“Pressure from above” refers to the failure of complying with Article VI of the NPT. As argued in chapter 2.3, the obligation to make progress on nuclear disarmament rests primarily with the NWSs. This obligation is an important part of the bargain on which the NPT is based. The Vienna Convention on the Law of Treaties provides that the injured parties can “suspend the operation of the treaty in whole or in part or terminate it,” if one party to the treaty is found materially breaching the treaty.⁹⁶ Moreover, following that the NPT can be understood as a

⁹² Quinlan (2007:6-8)

⁹³ Miller (2007:68)

⁹⁴ Mærli and Lodgaard (2007)

⁹⁵ Mærli and Lodgaard (2007:4-5)

⁹⁶ Persbo (2001:43)

bargain between the NWSs and the NNWSs, the importance of nuclear disarmament has arguably increased with the declined attractiveness of Article IV, which has served as an important incentive for NNWSs to accept the asymmetry of rights and obligations in the NPT.

When the NPT was negotiated, nuclear energy appeared to offer a relatively cheap, safe and environmentally clean energy resource. This has failed to materialise due to several downsides of nuclear energy, such as radioactive waste and safety concerns.⁹⁷ Although the global climate crisis and increased need for energy appears to lead to a renaissance in the use of nuclear energy in some states, many states retain their dismissal of nuclear energy.⁹⁸ In addition, today the division between those states parties to the NPT which are eligible to receive assistance for the development of peaceful nuclear applications and states that are obliged to render this assistance, does not follow the division between NWSs and NNWSs as clearly as it did at the time of the negotiation of the NPT.⁹⁹ Several NNWSs, such as Germany and Japan, have today reached a position where they are obligated to facilitate the exchange of peaceful nuclear technology on similar footing as the NWSs. The obligation to disarm, on the other hand, still first and foremost falls upon the NWSs. That the obligation to facilitate peaceful use of nuclear technology has been more evenly distributed between NWSs and NNWSs arguably suggest that it is even more important that the NWSs make progress towards nuclear disarmament in order for the NNWSs to submit to a discriminatory treaty. In light of these drawbacks, Article IV is not as effective an incentive to hold on to states parties as it once was.

More importantly, the fulfilment of Article VI is important because it implies that the discriminating differentiation of nuclear weapon “haves” and “have-nots” will not be indefinitely.¹⁰⁰ As discussed in chapter 2.3, it is truly extraordinary that the NNWSs submitted themselves to a treaty which in theory rendered their national security and possibly their very existence at the mercy of the NWSs. The discriminatory bifurcation has in itself been a source of vexation for many NNWSs. Indications of the rising tide of anger of the NNWSs with regard to

⁹⁷ Johnson (2003)

⁹⁸ Statement by Ursula Plassnik, Federal Minister for European and International Affairs of the Republic of Austria, to the 51st Regular Session of the IAEA General Conference 2007.

⁹⁹ van Dassen (2007:262)

¹⁰⁰ Forland (2007:30)

nuclear disarmament can be traced back in the voting behaviour on UN resolutions.¹⁰¹ This dissatisfaction has a corrosive effect on the NPT.¹⁰² Even if NNWSs do not withdraw from the NPT, effective management of the NPT regime requires cooperation between NWSs and NNWSs. Successful responses to nuclear proliferation challenges and crises, serious enforcement in the face of transgressions and further refinements to improve the NPT-regime all depend on the agreement, support and active participation of both NWSs and NNWSs.¹⁰³ Such cooperation is difficult to achieve when there is frustration, distrust and allegation of bad faith against the NWSs over nuclear disarmament.¹⁰⁴

Further, in addition to undermining the NPT, the failure to disarm may also damage the very objective of the NPT itself. Not only may it be difficult to sustain the argument that proliferation of nuclear weapons is bad when the NWSs proclaim that their nuclear arsenals are essential to their national security, a claim that lost much of its leverage when the Cold War ended, but many scholars agree that, although the causes of proliferation are complex and not fully understood, the possession of nuclear weapons constitutes a powerful incentive for states to acquire nuclear weapons.¹⁰⁵ According to Jonathan Schell, almost all states which have acquired nuclear weapons, starting with the Soviet Union, have pointed to an existing arsenal as their motive.¹⁰⁶ From the perspective of these states they respond to what they consider a threat to their national security by acquiring nuclear weapons themselves in order to deter the opponent state from using its nuclear weapons with impunity. These claims are supported by the findings of the Weapons of Mass Destruction Committee, which concludes that as long as any state possesses nuclear weapons, others will want them.¹⁰⁷ Hence, the linkage between nuclear weapon possession and proliferation implies that non-proliferation and disarmament must go hand in hand.¹⁰⁸ The importance of this linkage was acknowledged in 1995, when, in an attempt to reassure the NNWSs that they did not need to acquire nuclear weapons, the NWSs made non-treaty negative security assurances before the Security Council of the United Nations as part of the consideration

¹⁰¹ A non-exhaustive list of complaints by the NNWSs since 1996 can be found in Sauer (2005:21-24).

¹⁰² Miller (2007:64-68)

¹⁰³ Miller (2007:65)

¹⁰⁴ Miller (2007)

¹⁰⁵ Ogilvie-White (1996), Santoro (2006)

¹⁰⁶ Schell (2007:41)

¹⁰⁷ Weapons of Mass Destruction Commission (2006:60)

¹⁰⁸ Mærli and Lodgaard (2007:3)

paid to the NNWSs in order to persuade them to vote for the extension of the NPT, as it was about to expire that year.¹⁰⁹ However, the security assurances were not without exceptions, and their legality and believability is unclear.¹¹⁰ Its reassurance to all of the NNWSs is therefore uncertain. Only nuclear disarmament would remove this incentive to opt for nuclear weapons.

2.4.2. Pressure from within

“Pressure from within” refers to NNWSs parties to the NPT which deliberately violate their treaty obligation to forsake nuclear weapons. States parties which have yet not concluded safeguards agreements also belong to this type of pressure.¹¹¹ “Pressure from within” stems in part from a paradox embedded in the NPT: Under the NPT, the NNWSs agreed to give up their pursuit of nuclear weapons, but not their pursuit of peaceful uses of nuclear energy. According to Article IV, it is the inalienable right of all states parties to develop and use nuclear energy for peaceful purposes. Moreover, Article IV guarantees NNWSs the right to full access to nuclear power technology, on condition that they submit their nuclear activities to international inspections. According to Jonathan Schell, this bargain was a “Trojan horse” written into the text of the NPT.¹¹² Nuclear technology is a dual-use technology with both civilian and military applications. Education, experience, materials and technology involved in making nuclear weapons can be drawn in large part by peaceful applications of nuclear energy.¹¹³ The NPT clearly prohibits NNWSs from using nuclear technology to make nuclear weapons, but once they have it, they have taken a major step towards the development of nuclear weapons.¹¹⁴ For NNWSs which desire nuclear weapons, Article IV thus assures that they are be able to acquire most of the wherewithal to fulfil their ambitions without violating the NPT.¹¹⁵ Hence, the number of states capable of building nuclear weapons has paradoxically increased due to the NPT. According to David Santoro, this paradox can prove to be the Achilles heel of the NPT.¹¹⁶

¹⁰⁹ Bunn (2006:87)

¹¹⁰ Although the NWSs promised not to use nuclear weapon states against any NNWSs, most of them attached some exceptions to their assurances. The United States, for example, stated that it would be permitted to use nuclear weapons first against a NNWS if the given state attacked another NNWS while the attacking NNWS was allied with a nuclear weapon power (Bunn, 2006:87).

¹¹¹ Johnson (2003)

¹¹² Schell (2007)

¹¹³ Bunn (2006:96-97)

¹¹⁴ Bunn (2006:97)

¹¹⁵ Schell (2007)

¹¹⁶ Santoro (2006:62)

NNWSs which work within the NPT, but deliberately manipulate or violate the provisions of the treaty, such as Iran is suspected to do, may cause states parties, both NWSs and NNWSs, to lose confidence in the credibility of the NPT, and opt for other means to prevent proliferation.¹¹⁷

Moreover, following the linkage between nuclear weapon arsenals and proliferation, as argued in the previous chapter section (2.4.1), if a NNWS acquires nuclear weapons it may again cause other NNWSs to acquire nuclear weapons as well, thus creating a negative spiral of proliferation.¹¹⁸ In order to manage “pressure from within,” several scholars argue that the 1997 Additional Safeguards Protocol should be established as the new verification form in order to improve early detection of treaty violations.¹¹⁹ The standards and requirements for inspection negotiated in the early 1970s were shown inadequate by Iraq’s success in hiding its nuclear weapon efforts before and during the Gulf War in 1991.¹²⁰ Further, better enforcement mechanisms need to be put in place in order to deter and respond to treaty violations. This would require radical changes in the structure and working of the United Nations as well as the IAEA.¹²¹ The weakness of the current enforcement mechanism has been illustrated by the case of the DPRK, which refused international inspections of certain suspect facilities without provoking immediate and effective sanctions.¹²² However, as long as there are strong incentives to acquire nuclear weapons, controlling the supply and use of nuclear technology can be effective only to some degree.¹²³ Acknowledging that nuclear arsenals can pose a strong incentive for some NNWSs to seek nuclear weapons, nuclear disarmament thus also plays an important role in easing “pressure from within” because it can reduce the motive to acquire nuclear weapons.

¹¹⁷ Johnson (2003), Bunn (2006:103)

¹¹⁸ Schell (2007)

¹¹⁹ Lodgaard (2007:301)

¹²⁰ Discoveries made after the Gulf War in 1991 showed that the Iraqi nuclear program was more advanced than had been thought. This prompted the IAEA to strengthen the safeguards regime by means of a so-called Additional Protocol (Bunn, 2005).

¹²¹ For a thorough discussion on this matter, see Goldblat (2007:23-26), and Johnson (2003, 2004).

¹²² Goldblat (2007:24)

¹²³ Lodgaard (2007:311)

2.4.3. Pressure from outside

“Pressure from outside” refers to the stress put on the NPT by non-signatories. To date, these include Israel, India and Pakistan.¹²⁴ The failure to achieve universality undermines not only the normative strength of the treaty and the regime that it anchors, but also its ability to control proliferation.¹²⁵ The importance of universality is that it would bring proliferation challenges inside the non-proliferation regime, challenges becoming matters of compliance. Universality would also raise the costs of non-compliance by increasing the likelihood of collective enforcement of treaty obligations. “Pressure from outside” is enhanced by the fact that India, Pakistan, and Israel are DNWSs. Acknowledging that possession and proliferation are inextricably linked (see chapter 2.4.1), the nuclear arsenals of Israel, India, and Pakistan not only serve as potential motives for some NNWSs to acquire nuclear weapons, but also as a justification for the NWSs to hold on to their arsenals.

However, the NPT recognises five NWSs only. Any state may join the treaty after its entry into force, but must accede to it as a NNWS.¹²⁶ Thus, in order to join the NPT, Israel, India, and Pakistan would have to dismantle their nuclear arsenals. According to most analysts, this is an unrealistic scenario.¹²⁷ To formalise the status of Israel, India, and Pakistan as NWSs, and submit them to the same obligation to nuclear disarmament, could on the other hand be seen as rewarding imprudent behaviour. It would also be difficult to achieve because it would require amending the NPT, an action requiring consensus among all states parties.¹²⁸ Moreover, some states joined the treaty on the understanding that there would be only five NWSs.¹²⁹ Japan and other states have indicated that they may reconsider their non-nuclear status because the recognition of additional NWSs would upset their security calculations.¹³⁰ However, stubbornly holding on to the question of formality, demanding that the three non-signatories give up their nuclear arsenals, has so far been fruitless. Accepting that Israel, India and Pakistan have in effect been nuclear weapon powers for a long time, several analysts therefore argue that it is important

¹²⁴ Although the DPRK announced that it had conducted a nuclear test on October 9, 2006, its formal nuclear status remains undefined and unclear (Mærli, and Lodgaard, 2007:5).

¹²⁵ Lodgaard (2007:307)

¹²⁶ Article IX of the NPT

¹²⁷ Johnson (2004:12), Lodgaard (2007:303)

¹²⁸ Applegarth and Tyson (2005:39)

¹²⁹ Among them are Algeria, Argentina, Brazil, Japan, South Africa, and South Korea (Lodgaard, 2007:303).

¹³⁰ Lodgaard (2007:304)

to bring the non-signatories into the NPT “as if” they were parties to the treaty, giving them some form of recognition in return for their adopting and fulfilling obligations that apply to the NWSs.¹³¹ However, to do so requires that the NWSs take their obligation to disarm seriously. Just as the nuclear arsenals of the DNWSs can serve as an incentive for some NNWSs to acquire nuclear weapons, as well as a justification to be used by the NWSs to hold on to their nuclear weapons, so can the nuclear arsenals of the NWSs serve as an incentive for and be used as a justification by the DNWSs to hold on to their nuclear weapons. India especially has crusaded against the NPT as a discriminatory treaty that fails to move the world towards nuclear disarmament.¹³² Nuclear disarmament is thus crucial to rallying international opinion against all proliferation, as well as states that attempt to remain outside the NPT.¹³³

Moreover, if states withdraw from the NPT, their number would arguably add to the “pressure from outside.” Although many states consider the right to withdraw from a treaty as a norm of international law, the abrupt termination of a multilateral arms control treaty such as the NPT may directly affect the security of many or all parties.¹³⁴ As noted in the previous chapter section (2.4.2), the NPT has structural flaws, which means that a state can move to the brink of nuclear weapons capacity, thereby giving it the option to develop nuclear weapons quickly if it should decide to withdraw, without violating the treaty. Although its formal nuclear status is still unclear, the utilisation of the withdrawal provision of Article X by the DPRK illustrates this point. This has led several scholars to argue that in order to ensure the survival of the NPT, no state should be allowed to withdraw from the treaty.¹³⁵ The case of the DPRK also illustrates that different types of pressure can form clusters. The DPRK constitutes both “pressure from within,” by having acquired nuclear weapons despite its obligation as a NNWS not to do so, and arguably “pressure from outside,” by utilising the withdrawal provision of the NPT.

2.4.4. Pressure from below

“Pressure from below” is posed by non-state actors. As William Potter notes, fissile materials, nuclear weapons and crude type nuclear explosives are also within reach of non-state actors,

¹³¹ Lodgaard (2007:304)

¹³² Krepon and Scheinman (2001:627)

¹³³ Diehl and Moltz (2008:83)

¹³⁴ Goldblat (2007:23)

¹³⁵ Goldblat (2007:22-23)

which can play the role as suppliers, middlemen and end-users.¹³⁶ The principle practical barrier to the creating of nuclear weapons remains the acquisition of weapon usable nuclear material.¹³⁷ If they first acquired the necessary nuclear materials, well-organised sub-state organisations and terrorist groups with adequate time and resources could produce a nuclear explosive device.¹³⁸ Except declaring that NWSs are prohibited from providing nuclear weapons to “any recipient whatsoever,” the NPT does not safeguard against the acquisition of nuclear materials or nuclear weapons by non-state entities.¹³⁹ Although the prospect of a nuclear warhead being stolen seems unlikely, it cannot be ruled out. A more likely scenario is that a terrorist group could acquire nuclear explosive material or radioactive sources.¹⁴⁰ In order to prevent non-state proliferation, it is critical to keep fissile material under control and accountable. IAEA safeguards do so in NNWSs. However, the paradoxical exemption of the NWSs from international stockpile control, which leaves vast quantities of fissile material unaccounted for, increases the likelihood of such a scenario occurring.¹⁴¹ Moreover, the collapse of the Soviet Union and the consequent deterioration in security in its nuclear complex has increased the risk that “loose nukes” could find their way to the black market for sale to aspiring nuclear powers and terrorists groups.¹⁴² The attacks of September 11, 2001, showed that non-state actors are willing to inflict mass casualties. Terrorist groups, such as Al-Qaeda, have already shown an interest in acquiring nuclear weapons.¹⁴³ This apparent increase in both supply and demand suggest that “pressure from below” has gained weight.¹⁴⁴ In order to fill this gap in the NPT, the UN Security Council on April 28, 2004 adopted Resolution 1540.¹⁴⁵ Resolution 1540 acts like an “amendment” to the NPT, and requires states to adopt national criminal laws and physical security measures to protect their nuclear material, equipment and technology from theft and sabotage.¹⁴⁶

¹³⁶ Potter (2007)

¹³⁷ Krieger (2005)

¹³⁸ Cirincione, Wolfsthal and Rajkumar (2005:45)

¹³⁹ Bunn (2006:103)

¹⁴⁰ Bunn (2006:127-131)

¹⁴¹ Mærli and Lodgaard (2007)

¹⁴² Reiss (2005:8)

¹⁴³ Diehl and Moltz (2008:xi)

¹⁴⁴ Bunn and Chyba (2006:126)

¹⁴⁵ Security Council Resolution 1540 “Non-proliferation of weapons of mass destruction”

¹⁴⁶ Bunn (2006:86)

Moreover, several scholars argue that in addition to enhance the security of nuclear weapons and fissile material, also the reduction and elimination of nuclear arsenals is important in order to prevent non-state actors from acquiring nuclear weapons.¹⁴⁷ This view has also recently been supported by George Schultz, William Perry, Henry Kissinger and Sam Nunn, which argue that the reliance on nuclear weapons for national security is becoming increasingly hazardous because non-state terrorists are conceptually outside the bounds of a deterrent strategy.¹⁴⁸ Thus, fulfilling Article VI of NPT also constitutes an important measure to capture and avert the risk of non-state proliferation.

2.5. Summary

The NPT ascertains that states that did not possess nuclear weapons as of 1967 agree not to obtain them, and that states that possess them agree to divest themselves of these weapons. By dividing states parties into NWSs and NNWSs, the NPT froze an arbitrary historical moment. Although the discriminatory differentiation was not intended to be indefinitely, it created a need to compensate the deprived group because the NNWSs submitted themselves to a unique discriminatory setting, in which they, in theory, could become nuclear targets at any time.¹⁴⁹ The obligation to disarm, embedded in Article VI, was therefore a decisive factor in their choice to join the NPT. In addition to the promise of nuclear disarmament, the need to compensate was filled by guaranteeing NNWSs the right to full nuclear power technology, on condition that they submit their facilities to international inspections. This bargain constitutes the basis of the NPT. It created a balance of interests between NWSs and NNWSs. Without it, there would have been no agreement. Thus, it has to be upheld and reconfirmed in order for the NPT to survive.

The NPT is exposed to pressure from several directions; from “above,” from “within,” from “outside,” and from “below.” Of the four types of pressure, “pressure from above” and “pressure from within” appear most severe. They relate to the bargain on which the NPT is based and derive from states parties to the treaty. “Pressure from above” derives from the NWSs, and pressure from within derives from NNWSs. Being a NWSs, U.S. nuclear weapons policy has an impact on “pressure from above.” “Pressure from above” is constituted by the failure to make

¹⁴⁷ Lodgaard (2007:308), Potter (2007:206-208)

¹⁴⁸ Schultz, Perry, Kissinger and Nunn (2007)

¹⁴⁹ Miller (2007)

progress on nuclear disarmament. Not only do several events prove strong evidence that holding on to nuclear weapons for an indefinite future represents a breach of the NPT, but the obligation to disarm is a political reality that affects the commitment of NNWSs to the treaty. The failure to make progress on the obligation to eliminate nuclear arsenals may cause the non-proliferation bargain upon which the NPT rests, to cease to bear its load. Failure to do so would not only make cooperation difficult by causing frustration and distrust, but is also an important incentive for NNWSs to stay with the NPT. The importance of this incentive is further increased by the fact that access to nuclear technology is no longer considered as strong an incentive for many NNWSs to stay with NPT as it was at the time of the negotiation of the treaty.

Moreover, nuclear disarmament is not only important because the failure to do so constitutes a direct pressure by itself, but also because nuclear disarmament indirectly affects pressure from other directions. “Pressure from within” stems in part from the fact that access to nuclear technology, as guaranteed by the NPT, can be used not only for peaceful purposes, but to build nuclear weapons. NNWSs which deliberately manipulate or violate the provisions of the treaty may cause states parties to the NPT to lose confidence in the ability of the treaty to stem nuclear proliferation. Acknowledging that the existence of nuclear arsenals can pose a strong incentive for NNWSs to seek nuclear weapons, nuclear disarmament is important to ease the demand side of “pressure from within.” As long as there are strong incentives to acquire nuclear weapons, controlling the supply and use of nuclear technology can be effective only to a degree. “Pressure from outside” derives from the three DNWSs, operating outside the NPT. Because some of the non-signatories see the NPT as a discriminatory treaty which ascertains nuclear possession by the five NWSs while keeping other states out of the nuclear club, nuclear disarmament would put pressure on the DNWSs to rid themselves of their nuclear weapons too. Moreover, if states withdraw from the NPT, “pressure from outside” would increase. By committing themselves to the disarmament obligation, the NWSs can prevent this from happening. “Pressure from below” refers to non-state entities which can play the role as suppliers, middle-men and end-users of nuclear weapons and crude type nuclear explosive devices. Fulfilling the obligation to disarm nuclear arsenals constitutes a long term strategy to capture and avert the risk of non-state proliferation.

3. Methodology

Different research questions require different methods to answer them.¹⁵⁰ This chapter accounts for how the research study has been planned and executed, addresses challenges faced during the research process, and briefly reflects on how personal opinions and preferences may have affected the research findings.

3.1. Research design

Disarmament is the *key* venue for assessing U.S. impact on the viability of the NPT.¹⁵¹ Following this acknowledgement, analysing the extent to which the United States lives up to its obligation to disarm should indicate whether U.S. nuclear weapons policy is compatible with a strong and effective NPT. However, nuclear disarmament is an abstract concept, and thus difficult to operationalise. As noted in chapter 2.3.1, Article VI of the NPT, in which the obligation to disarm is pertained, does not set out any criteria or timeframe by which to judge its fulfilment. This makes it difficult to draw any specified conclusions on whether U.S. nuclear policy is compatible with nuclear disarmament.

Reviewing the implementation of the treaty since its indefinite extension in 1995, the 2000 NPT Review Conference agreed by consensus on a series of measures to promote the full implementation of the NPT, including Article VI. In paragraph 15 of the discussion of Article VI, the Review Conference declared that it “agrees on the following practical steps for the systematic and progressive efforts to implement Article VI of the Treaty on the Non-Proliferation of Nuclear Weapons,” and set forth a list of eighteen such practical steps.¹⁵² These steps, commonly referred to simply as “the Thirteen Steps,”¹⁵³ are based on Paragraph 4 and 4c of the 1995 “Decision on Principles and Objectives for Nuclear Non-Proliferation and Disarmament,” one of the elements of the “package” introduced in conjunction with the indefinite extension of the NPT.¹⁵⁴ The steps

¹⁵⁰ Punch (2001)

¹⁵¹ Miller (2007)

¹⁵² Final Document of the 2000 NPT Review Conference

¹⁵³ Step 9 of the thirteen steps consists of six individual steps, making up for a total of eighteen steps (see chapter 4).

¹⁵⁴ The 1995 NPT Review Conference made three decisions: 1) strengthening the review conference of the treaty, 2) agreeing on principles and objectives for nuclear non-proliferation and disarmament, and 3) extending the NPT. In addition, the conference agreed on a Resolution on the Middle East, calling for the establishment of a nuclear weapon free zone in the Middle East (Final Document of the 1995 NPT Review Conference).

are controversial, but can form a valuable methodological platform because they operationalise Article VI and are possible to monitor over time.

The agreement upon the Thirteen Steps at the 2000 NPT Review Conference was the first time that the NWSs accepted references to specific measures which can be acted upon for nuclear disarmament leading to the elimination of nuclear weapons.¹⁵⁵ The steps make the abstract notion of nuclear disarmament observable and measurable. By assessing U.S. nuclear weapons policy in relation to each of the Thirteen Steps over time, the research questions formulated may be answered. If there is a tendency of compatibility between U.S. nuclear weapons policy and the Thirteen Steps, it would suggest that U.S. nuclear weapons policy underpins the NPT. If, on the other hand, the findings uncover a tendency of incompatibility between U.S. nuclear policy and the Thirteen Steps, it would indicate that the nuclear weapons policy of the United States is detrimental to the NPT.

However, the implementation of the Thirteen Steps should not be utilised uncritically for assessing U.S. nuclear policy. The United States has dismissed the Thirteen Steps as not legally binding, claiming that the documents produced at review conferences do not have the same legal standing as the NPT itself.¹⁵⁶ Moreover, as Christopher Ford, United States Special Representative for Nuclear Non-Proliferation within the U.S. State Department, points out, the Thirteen Steps by their own terms in no way claim to be an exclusive list of the ways in which states parties to the NPT can satisfy their Article VI obligations.¹⁵⁷ Thus, Ford argues, it is difficult to assert that a state's lack of commitment to all of the Thirteen Steps indicates non-compliance.

From a juridical perspective, Ford may have a point. However, as argued in chapter 2.3.1, there is both a legal and political dimension to the obligation to disarm. It is not the intention of this thesis to make a legal judgement on whether the United States is violating its treaty obligations, but to assess the impact of U.S. nuclear weapons policy on the viability of the NPT. For this purpose, the degree of fulfilment of the Thirteen Steps seems relevant. The Thirteen Steps are a

¹⁵⁵ Rauf (2001:15), Miller (2007:59)

¹⁵⁶ Sanders (2005)

¹⁵⁷ Ford (2007:412)

direct result of the “package” introduced to extend the NPT in 1995. They were agreed upon by consensus, and reflect the *expectations* of all states parties to the NPT. Like Article VI itself, the Thirteen Steps hence have importance and relevance, if not undisputed legal force. The extent to which they are respected and fulfilled affects the strength and efficiency of the NPT. Whether U.S. policy is in conformity with the Thirteen Steps says something about the willingness of the United States to live up to the bargain on which the NPT and its extension are based, and thus whether U.S. policy has a beneficial or detrimental impact on the viability of the treaty. Additional measures benefiting the process of nuclear disarmament are certainly welcomed, but such measures should not replace those collectively agreed upon at the 2000 NPT Review Conference.

In sum, the Thirteen Steps are well suited to answer the research questions. The steps are measurable and possible to assess over time. The extent to which U.S. nuclear weapons policy is compatible with the Thirteen Steps suggests whether the United States is perceived to be fulfilling its commitment to nuclear disarmament, and hence whether, and in what ways, U.S. nuclear weapons policy is compatible with a strong and effective NPT (research question 1 and 2). Shedding light on these issues further makes it possible to reflect on whether U.S. nuclear weapons policy needs to change in order to align with the NPT (research question 3).

3.2. Data sources

Using the Thirteen Steps to assess U.S. impact on the NPT means that U.S. nuclear weapons policy which relates to the Thirteen Steps is identified as data. U.S. compliance with the Thirteen Steps has been quite thoroughly investigated.¹⁵⁸ Moreover, the United States is probably the NWSs which provides the most accessible information about its nuclear weapons policy.¹⁵⁹ Unless information can be lawfully withheld under specific exemptions, the 1966 *Freedom of Information Act* allows for the full or partial disclosure of previously unreleased information and documents controlled by the U.S. government.¹⁶⁰

¹⁵⁸ See for example Müller and Schaper (2004) or Bunn and Chyba (2006)

¹⁵⁹ Schaper (2004)

¹⁶⁰ *Freedom of Information Act* (1966)

I relied heavily on websites to find data.¹⁶¹ Websites are rich sources of updated information, analyses and original documents. The types of websites I used can be divided into three main categories: 1) *U.S. governmental websites*, such as the homepages of the National Nuclear Security Administration (NNSA),¹⁶² 2) *inter-governmental websites* provided by relevant international organisations, such as the Conference on Disarmament and the Comprehensive Test-Ban Treaty Organisation, and 3) *non-governmental websites* such as the homepages of the Federation of American Scientists.¹⁶³

In order to maximise the quality of the data, I attempted to check the *reliability*¹⁶⁴ of the websites prior to using them as data sources.¹⁶⁵ I considered U.S. governmental and the relevant inter-governmental websites as reliable information providers – though with a potential bias. The reliability of non-governmental sources, on the other hand, is more uncertain because they may not have access to all relevant information. Thus, I chose to limit my non-governmental sources to well-established and well-known sources. The list of such particular websites provided by Sarah Diehl and James Clay Moltz in their introductory book “*Nuclear Weapons and Nonproliferation*” (2008) served as a helpful starting point in this regard. I further ascertained the reliability of websites by searching for duplicate information in books and other written sources, such as the peer-reviewed *Nonproliferation Review*. In that way I was able to crosscheck information, noticing which sites apparently presented the most reliable information. In order to check that the information was consistent, I used several reliable sources from different categories of websites, as well as books, whenever that was possible. Finding the same data in several reputable sources was a good indication that the data was reliable. However, in order to

¹⁶¹ The sources I have used are referred to throughout the thesis and listed in the references at the end of the thesis.

¹⁶² The NNSA was established by Congress in 2000 as a separately organised agency within the U.S. Department of Energy. The NNSA is responsible for the management and security of the U.S. nuclear arsenal (<http://nnsa.energy.gov>).

¹⁶³ The Federation of American Scientists (FAS) is a non-profit organization formed in 1945 by scientists from the Manhattan Project concerned about control of the technology they had helped create. Since its founding, FAS has focused on nuclear weapons, including monitoring U.S. nuclear weapons policy (www.fas.org). A source of information which I found especially helpful was the Nuclear Information Project, a public education project with the Federation of American Scientists that works to provide the public with access to declassified documents and analysis about nuclear weapons policy and operations.¹⁶³ Since the Project’s web site was launched in March 2004, users of the information have included major research institutes and governments from around the world. Thus, although it was not always possible to cross-check the information provided by the Nuclear Information Project with official information, I consider the data provided by the Nuclear Information Project reliable.

¹⁶⁴ Reliability refers to the degree to which the findings of a study are independent of accidental circumstances of their production (Silverman, 2006:285).

¹⁶⁵ Punch (2001:257)

enhance the reliability of data through crosschecking, it is important that the different sources do not cite each other. If that is the case, the entire purpose of crosschecking is undermined.

Through the process of collecting data I found that U.S. governmental sources had a tendency to highlight positive aspects of U.S. nuclear weapons policy, as could be expected, while sometimes leaving out aspects which could be interpreted negatively. Non-governmental sources, on the other hand, had a tendency to highlight negative aspects of U.S. nuclear policy. Moreover, although most information needed was readily available, some data were not available from governmental sources, but kept secret from the public due to national security concerns. Here I had to rely to a greater extent on non-governmental sources without the possibility of confirming the data by checking them with official sources. This especially concerns data relating to nuclear capabilities, such as the exact size of the U.S. nuclear arsenal and the amount of fissile materials in U.S. hands. In 1999 the United States decided to classify the number of nuclear warheads being dismantled, and the number of nuclear weapons in the stockpile.¹⁶⁶ The numbers of U.S. nuclear weapons used in the thesis are therefore estimates.¹⁶⁷

Similarly, due to classifications some data relating to U.S. nuclear war planning and strategy have not been possible to crosscheck with official information. Throughout the analysis I have in particular referred to the 2002 *Nuclear Posture Review* (NPR). The NPR is a review of U.S. nuclear forces and official nuclear weapons policy, which is regularly enunciated by the U.S. government in a congressionally mandated nuclear posture review. The current NPR was prepared in 2001 by the Department of Defence (DOD) in close cooperation with the Department of Energy (DOE). Key findings of the NPR were presented to the Congress on January 8, 2002, and on January 9, 2002, the DOD held a press conference to present an executive summary of the NPR.¹⁶⁸ Although the entire text of the NPR was kept classified, the *Los Angeles Times* and the *New York Times* revealed on March 9, 2002, that they had obtained the full document, and major

¹⁶⁶ Schaper (2004)

¹⁶⁷ The estimates on nuclear weapon numbers used were made in January 2008 by Hans M. Kristensen, Shannon N. Kile, and Vitaly Fedchenko for the Stockholm International Peace Research Institute (SIPRI), an independent international institute for research into issues related to international conflict, arms control and disarmament (SIPRI Yearbook, 2008).

¹⁶⁸ Special Briefing on the Nuclear Posture Review (2002)

parts of its contents have been leaked and are available on the internet.¹⁶⁹ The use of the NPR as data in this thesis is based on the special press briefing and the leaked excerpts.¹⁷⁰ Although the source who revealed the classified parts of the NPR remains unknown,¹⁷¹ the leaked excerpts are considered to be reliable.¹⁷²

3.3. Managing subjectivity

The research presented in this thesis is *normative*, which means that the study aims at finding out not only how U.S. nuclear weapons policy affects the viability of NPT, but also how U.S. nuclear policy *should* be in order to ensure a strong and effective NPT.¹⁷³ Normative research is often differentiated from *descriptive* research, which aims at gathering knowledge about the object of study, but does not wish to modify it. For many scientists and observers of science a common response to normative research is to call for the research to be pure, or somehow separate from normative considerations.¹⁷⁴ According to the positivist approach, all good science should be value free, unbiased and objective, revealing the one and only, unified, unambiguous truth.¹⁷⁵ Non-positivists on the other hand, argue that complete value-free, objective social science is impossible. According to them, the separation between fact and value is not clear in social sciences, and the researcher can thus not avoid taking stands on the issue being studied. On the contrary, social science proclaiming to be value-free can be used to hide values and agendas under a cloth of alleged objectivity. Thus, a researcher who is motivated by a strong moral desire to effect change need not invalidate good research practice, non-positivists argue. However, values and potential biases must be made *explicit* in order for the research to be legitimate.¹⁷⁶

My motive for conducting research on this particular subject started out as mere curiosity and interest. Why I chose to conduct research on the viability of the NPT and why I chose to focus my research on U.S. nuclear weapons policy has been explained in the introduction of the thesis

¹⁶⁹ See Excerpts of Classified Nuclear Posture Review (2002)

¹⁷⁰ Throughout the thesis, both the press briefing and the excerpts are simply referred to as the 2002 NPR.

¹⁷¹ Some scholars have argued that it was the Bush administration itself who leaked the excerpts in order to enhance its nuclear deterrence. Others argue that the Democrats were responsible for the leak because they opposed the NPR, and/or intended to weaken the Bush administration (Robbins, 2002).

¹⁷² Müller and Schaper, (2004), Bunn (2007), and Robbins (2002)

¹⁷³ Routio (2007)

¹⁷⁴ Pielke (2006)

¹⁷⁵ Neuman (2006:516)

¹⁷⁶ Neuman (2006:518)

(chapter 1). I am not aware of having any predisposed positive or negative sentiments towards the United States, and as such consider myself competent and qualified to conduct this research. However, in the process of my research I have become aware that I am a nuclear pessimist. Although I do not reject the claim that nuclear weapons can induce some form of stability, I also believe that it can create instability. Moreover, I hold that the risks pertained in nuclear deterrence greatly overshadows the potential gains, as discussed in chapter 1.2. In addition, although I do not categorically oppose war, I believe that war must be controlled and restricted to a minimum.¹⁷⁷ The potential violence nuclear weapons can convey is so enormous (see chapter 1.4) that it seems meaningless to put restrictions on them. Taking my normative sentiments into consideration, it is important to reflect upon whether and possibly how these sentiments can affect the reliability of my research.

Most of the Thirteen Steps used to assess the compatibility between U.S. nuclear weapons policy and nuclear disarmament are quite straightforward. However, a few of the steps are quite vague, leaving some room for different interpretations. Although I have tried to interpret each of the steps as rationally and precisely as possible, my normative sentiments may have influenced some of my interpretations. However, the purpose of the Thirteen Steps is to promote the implementation of Article VI of the NPT, which is biased against nuclear weapons. The NPT clearly states that nuclear weapons are a threat and should be abolished.

¹⁷⁷ War causes destruction, suffering and death. Moreover, the destructiveness of war does not end when the act of committing violence ceases. Suffering can continue long after war has come to an end. Loved ones remain dead or are missing, homes and infrastructure lie in ruins, diseases, starvation and malnutrition continue to take their toll, mines and unexploded ordinances make everyday life dangerous and continue to cripple and kill indiscriminately, and survivors may be traumatised for life. Violence has a strong psychologically essence. It causes distrust, hostility and hate between competing parties (Barash and Webel, 2002:58). Such attitudes and emotions do not simply go away when the war comes to an end. Memories of war are even passed on from generation to generation, generating resentment and vengefulness between people who themselves did not experience the war (Salomon and Nevo, 2002). Thus, war can destroy long after the direct violence itself has ended.

4. U.S. nuclear weapons policy in light of the Thirteen Steps

This chapter analyses U.S. nuclear weapons policy in light of the Thirteen Steps. The Thirteen Steps in fact consist of 18 specific steps because Step 9 is made up of six separate steps. Of these eighteen steps, eight address all states parties to the NPT (Steps 1-5, and 11-13), eight are aimed exclusively at the NWSs (Steps 6, 9 a-f, and 10), and two steps specifically call upon the United States and Russia (Steps 7 and 8). This not only reflects that the obligation to disarm primarily rests with the NWSs, but that the United States and Russia play a superior role in achieving the goal of a nuclear weapon-free world.¹⁷⁸ The steps relate to each other, and several of the steps overlap. Each of the steps is briefly presented, and the extent to which it is adhered to by the United States briefly analysed. The steps are given in italics. The findings of the analysis are summarised in Table 4.

Step 1: *The importance and urgency of signatures and ratifications, without delay and without conditions and in accordance with constitutional processes, to achieve the early entry into force of the Comprehensive Nuclear-Test-Ban Treaty.*

The Comprehensive Nuclear Test-Ban Treaty (CTBT) seeks to halt nuclear testing once and for all by banning nuclear tests everywhere.¹⁷⁹ By preventing states from testing nuclear weapons, it is claimed that the CTBT will make it close to impossible for any additional nuclear power to arise, as well as making it very difficult for existing nuclear powers to develop new nuclear weapons because they would be banned from testing if and how new weapons work.¹⁸⁰ The CTBT is thus not only a key for preventing horizontal nuclear proliferation, but also for stopping qualitative vertical nuclear proliferation.¹⁸¹ Further, the CTBT aims at establishing a worldwide verification system, the International Monitoring System (IMS), using multiple-sensor

¹⁷⁸ The United States and Russia control more than 95 percent of the nuclear weapons in the world (Bunn and Rhineland, 2008).

¹⁷⁹ Nuclear tests have been conducted to achieve a range of objectives, including improving existing nuclear weapon designs, developing new weapons, understanding nuclear weapons' effects, maintaining reliability and safety of a nuclear weapon arsenal, intimidating or showing resolve and capabilities, and finding so-called peaceful uses for industrial purposes (Diehl and Moltz, 2008:214). From 1945 to 1963 most nuclear tests took place in the atmosphere, which provided the opportunity to examine the effects of the weapon on real targets. In 1963 the United States, the Soviet Union and the United Kingdom signed the Limited Test Ban Treaty (LTBT), which prohibited tests in the atmosphere, underwater and in outer space, limiting testing to underground locations.

¹⁸⁰ Bunn (2006:83), Diehl, and Moltz (2008:59)

¹⁸¹ Shaper (2008:95-96)

technologies to detect any suspect explosions.¹⁸² The CTBT has been signed by a large number of states, demonstrating widespread support.¹⁸³ However, the treaty has yet not entered into force. In order to enter into force, the CTBT must be ratified by 44 nuclear capable states.¹⁸⁴ Of these 44 states, so far 41 states have signed the CTBT, and only 35 states have ratified the treaty.¹⁸⁵

The United States has been a major driving force in achieving the CTBT by motivating other states, leading and concluding negotiations, investing into the development and implementation of verification technologies, and by being the first state to sign the treaty at the United Nations in New York on September 24, 1996. However, despite these efforts, the U.S. Senate on October 13, 1999, refused to consent to ratify the CTBT.¹⁸⁶ Under the presidency of George W. Bush the United States has formally withdrawn U.S. support for the CTBT.¹⁸⁷ Although the United States is not the only party responsible for the CTBT not entering into force, it is the only of the five NWSs to reject the CTBT all together.¹⁸⁸ This is not compatible with Step 1.

Step 2: *A moratorium on nuclear-weapon-test explosions or any other nuclear explosions pending entry into force of that Treaty.*

From July 16, 1945 until September 23, 1992 the United States conducted 1,054 nuclear tests.¹⁸⁹ On October 2, September 1992, the United States entered into a unilateral moratorium on nuclear weapons testing.¹⁹⁰ With the signing of the CTBT on September 24, 1996, the United States further committed itself from refraining from nuclear weapons testing. Although it did not ratify the CTBT, the articles of the treaty are honoured and further tests have not occurred.

¹⁸² The IMS consists of a network of stations using complementary technologies capable to register vibrations underground, in the sea, and in the air, as well as detecting traces of radio-nuclides released into the atmosphere. The stations are supported by laboratories, with the possibility of on-site inspections. The IMS is supervised by the Vienna-based CTBT Organisation (www.ctbt.org).

¹⁸³ 178 states have signed the treaty, of which 144 have ratified it (www.ctbt.org).

¹⁸⁴ See Annex 2 of the CTBT for a complete list of the 44 states needed to ratify the treaty in order for it to enter into force.

¹⁸⁵ As of June 20, 2008, the three states not having signed the CTBT are India, the DPRK, and Pakistan. CTBT status of signature and ratification is available at www.ctbto.org.

¹⁸⁶ Sauer (2005)

¹⁸⁷ 2002 Nuclear Posture Review

¹⁸⁸ The PRC has not ratified the CTBT either, but it does not oppose the treaty. The PRC claims that it will ratify the treaty if the United States ratifies it first (Bunn, 2006:84, Sauer, 2005:57).

¹⁸⁹ For a complete list and more information of the nuclear tests conducted by the United States, see www.nv.doe.gov/library/publications/historical/DOENV_209_REV15.pdf.

¹⁹⁰ Ford (2007:417)

However, the request of the Bush administration for research to modify existing nuclear weapons and its expressed interest in new nuclear weapon systems (see also Step 9c) may have pushed testing needs.¹⁹¹ Without testing, the United States would probably find it difficult or impossible to build and certify the safety and reliability of such new nuclear weapon concepts.¹⁹² This assumption is strengthened by the fact that the 2002 *Nuclear Posture Review* (NPR) emphasises the importance of maintaining high test-readiness and underlining that it “may not be possible for the indefinite future” to maintain the moratorium on nuclear testing.¹⁹³ The 2004 *Defence Authorisation Act* followed up on the NPR by including provision that authorise enhanced test readiness from between 24-36 month to 18 months.¹⁹⁴ Further, the NPR states that the United States “each year [...] will reassess the need to resume nuclear testing.” Nevertheless, although the United States does not rule out future testing and has displayed an interest in restoring U.S. ability to conduct underground nuclear testing, it has not tested or decided to test since it put in place its moratorium on nuclear testing.¹⁹⁵ The U.S. moratorium remains in place, which is consistent with Step 2.

Step 3: *The necessity of negotiations in the Conference on Disarmament on a non-discriminatory, multilateral and internationally and effectively verifiable treaty banning the production of fissile material for nuclear weapons or other nuclear explosive devices in accordance with the statement of the Special Coordinator in 1995 and the mandate contained therein, taking into consideration both nuclear disarmament and nuclear non-proliferation objectives. The Conference on Disarmament is urged to agree on a programme of work which includes a treaty with a view to their conclusion within five years.*

Of the Thirteen Steps, only Step 3 has been assigned a specific timetable for its completion. This indicates that its completion has been given prominence. Fissile material is an essential ingredient in any nuclear explosive, and thus poses the main obstacle to the building of nuclear weapons. A

¹⁹¹ Speed and May (2006)

¹⁹² Speed and May (2006: 254)

¹⁹³ 2002 NPR

¹⁹⁴ Wang (2003)

¹⁹⁵ However, it might be noted that the United States has conducted several tests not involving the full creation of a critical mass. Even though the CTBT does not prohibit this activity, it remains controversial (Diehl and Moltz, 2008).

treaty banning the production of fissile material would hence not only be an important asset in preventing horizontal nuclear proliferation, but also limit quantitative vertical nuclear proliferation.¹⁹⁶ On January 25, 1994 the Conference on Disarmament¹⁹⁷ appointed Ambassador Gerald E. Shannon of Canada as “Special Coordinator” to solicit the views of its members on the most appropriate arrangements for negotiating a so-called Fissile Material Cut-off Treaty (FMCT).¹⁹⁸ In June, the Special Coordinator reported that there was consensus among the members of the Conference on Disarmament to negotiating a FMCT at the conference.¹⁹⁹ Based on this report, the Conference on Disarmament on March 23, 1995, agreed to mandate a committee to begin negotiations.²⁰⁰

Although the time-limit to bring to a conclusion within five years a FMCT in accordance with the mandate has already been exceeded, the United States supports such a treaty, and has called for its conclusion as soon as possible.²⁰¹ The fact that the United States has not enriched uranium for nuclear explosive purposes since 1964, and has not produced plutonium for such uses since 1988, consolidate the U.S. position.²⁰² To this end, the United States on May 19, 2006 submitted a draft FMCT to the Conference on Disarmament, becoming the first state to do so.²⁰³ The United States thus provided the Conference on Disarmament with something concrete to work with and an opportunity to conclude a FMCT.²⁰⁴ However, the U.S. draft does not include any verification provisions, thus terminating the consensus of the negotiation mandate which calls for the FMCT to be “internationally and effectively verifiable.” The position of the Bush administration is that effective monitoring of compliance with a FMCT cannot be achieved, and that one thus should not further postpone the conclusion of such a treaty by spending time negotiating a verification

¹⁹⁶ Shaper (2008:100)

¹⁹⁷ The Geneva-based Conference on Disarmament is the single forum for the international community for negotiating multilateral arms control and disarmament agreements. It was established in 1979, and is a successor of the Eighteen-Nation Committee on Disarmament, which negotiated the NPT. All nuclear powers, including the three DNWSs, are members of the Conference on Disarmament. The CTBT is one among several treaties successfully negotiated in the Conference on Disarmament.

¹⁹⁸ Shaper and Mærli (2007:236)

¹⁹⁹ Report of Ambassador Gerald E. Shannon of Canada on Consultations on the Most Appropriate Arrangement to Negotiate a Treaty Banning the Production of Fissile Material for Nuclear Weapons or Other Nuclear Explosive Devices, CD/1299 (March 24, 1995)

²⁰⁰ Rauf (2001:28)

²⁰¹ 2002 NPR

²⁰² Ford (2007:417)

²⁰³ U.S. Draft FMCT (May 19, 2006)

²⁰⁴ Ford (2007:417)

system.²⁰⁵ Instead the United States advocates an ad-hoc system of verification wherein states would monitor the compliance of other states through their own national intelligence mechanisms. So far, the United States is isolated on its position. Taking away the verification provisions is not compatible with Step 4, which specifically calls for a FMCT to be “internationally and effectively verifiable.”²⁰⁶

Step 4: *The necessity of establishing in the Conference on Disarmament an appropriate subsidiary body with a mandate to deal with nuclear disarmament. The Conference on Disarmament is urged to agree on a programme of work which includes the immediate establishment of such a body.*

The establishment within the Conference on Disarmament of a body mandated to deal with nuclear disarmament would provide a venue within which disarmament negotiations could be advanced. However, the Conference on Disarmament remains deadlocked. The rules of procedure used in the Conference on Disarmament include the consensus rule in all decisions, including the agreement to establish subsidiary bodies to start negotiations. Due to the different positions of key states, consensus has eluded so far. Reasons for the stalemate are manifold. Although an in-depth assessment is beyond the scope of this paper, a major cause of the stalemate is that China and Russia view U.S. ballistic missile defence (BMD) plans and space ambitions as a threat.²⁰⁷ By insisting on the establishment of a ballistic missile defence system (BMD), and thus holding open the possibility of placing weapons in space, U.S. nuclear policy, although not solely responsible, constitutes an obstacle for the fulfilment of Step 4.

²⁰⁵ U.S. Draft on a Fissile Material Cut-off Treaty (2006)

²⁰⁶ Sauer (2005:37)

²⁰⁷ Both Russia and China fear that the BMD will constrict their nuclear deterrence capacity because a BMD would inject a high degree of indeterminacy into their strategic plans and undermine the principle of mutual assured deterrence (Harding, 2007). The U.S. cancellation of the ABMT (see Step 7) and the push for a BMD has also made China hold a more restricted stance on international efforts to stem the production of fissile material for nuclear weapons (Step 3). China’s nuclear deterrence rests on a minimal strategic nuclear force (Schaper and Mærli, 2007:237). To maintain its minimum deterrence towards the United States if the United States should implement its BMD plans, China has claimed a need to keep current and future production of fissile materials going in order to expand its ICBM force to be able to overcome any future U.S. BMD-system (Speed and May, 2006:279). China has persistently argued that a future FMCT must be linked with negotiations on the Prevention of an Arms Race in Outer Space (PAROS). Thus, U.S. BMD-plans also obstruct negotiations on a FMCT (van Dassen and Mærli, 2007:14-15).

Step 5: *The principle of irreversibility to apply to nuclear disarmament, nuclear and other related arms control and reduction measures.*

In order to ensure that nuclear warheads and weapons-usable fissile materials cannot be returned to active inventories, Step 5 calls for all disarmament measures to be permanent. Current U.S. nuclear policy does not appear to support this principle. The Bush administration explicitly did not apply the principle of irreversibility in negotiating the 2002 Strategic Offensive Reductions Treaty (SORT), which is the only major nuclear disarmament agreement the United States has signed since the formulation of the Thirteen Steps.²⁰⁸ Although the SORT reduces by 2012 the number of operationally deployed strategic nuclear weapons in the United States and Russia to 1.700 to 2.200 weapons each, the treaty does not require the destruction of even a single warhead. Instead the SORT merely requires that operationally deployed nuclear weapons be transferred to the reserve stockpile. On January 1, 2013, the date on which the SORT expires, the two parties are free to redeploy their nuclear forces.²⁰⁹ This is clearly not in conformity with permanent nuclear disarmament.

Moreover, the United States has conditioned further dismantlement of its nuclear weapons on the restoration of U.S. nuclear weapons production capability.²¹⁰ According to the 2002 NPR, the precise U.S. nuclear force level for the future cannot be predicted with certainty in a fluid security environment. Especially, it is argued, U.S. planning must take into account that, although relations with Russia have improved considerably, the future course of Russia cannot be charted with certainty. In the event that relations with Russia worsen in the future, the United States may need to revise its nuclear force levels, the NPR argues. A responsive nuclear infrastructure, able to respond to large strategic changes, is therefore deemed “indispensable” in order to permit the United States to reduce further the overall number of nuclear warheads.²¹¹ Moreover, so the argument goes, a modern nuclear complex would deter adversaries from trying to seek a military advantage over the United States. A reliable nuclear infrastructure has thus been made a

²⁰⁸ Strategic Offensive Reductions Treaty (2002)

²⁰⁹ Müller and Schaper (2004:II)

²¹⁰ Kile, Fedchenko and Kristensen (2008)

²¹¹ 2002 NPR

cornerstone of the “New Triad” (see Step 9e), and the Bush administration has undertaken considerable efforts to increase the U.S. capability to produce new warheads.²¹²

Step 6: *An unequivocal undertaking by the nuclear-weapon States to accomplish the total elimination of their nuclear arsenal leading to nuclear disarmament to which all States parties are committed under Article VI.*

As noted in chapter 2.3.1, Step 6 can be understood as a restatement of the disarmament commitment pertained in Article VI of the NPT in much less ambiguous, far more explicit language.²¹³ Step 6 requires that the NWSs make progress towards the elimination of their nuclear arsenals in a way that is completely clear and without any possibility of doubt.

As the overall analysis of U.S. nuclear weapons policy in light of the Thirteen Steps shows; U.S. nuclear disarmament efforts seem all but unequivocal. Although the United States upholds its moratorium on nuclear testing and has not decided to test (Step 2), it has refused to ratify the CTBT (Step 1) and has made preparations to resume testing if deemed necessary, a decision which, according to the NPR, is taken on a year-by-year basis (see Step 2). Although the United States has substantially reduced its nuclear weapons stockpile through the SORT, the SORT does not require the dismantlement of even a single warhead (see Step 5). Moreover, the Bush administration has tied further U.S. reductions to the establishment of a new nuclear weapons infrastructure with the capability to produce new warheads.²¹⁴ In parallel, the administration has proposed to resume industrial-scale production of new, more reliable, nuclear weapons in order to

²¹² The current proposal for a new nuclear complex is named “Complex Transformation.” It is a scaled down version of a former plan known as “Complex 2030.” The Complex 2030 ran into congressional opposition in 2007, when the Congress agreed to deny funding until a comprehensive review of the U.S. nuclear posture had been carried out (Medalia, 2007). The Complex Transformation is described in the Supplemental Programmatic Environmental Impact Statement that the NNSA issued on 11, January 2008. In addition to seeking an increase of the U.S. nuclear warhead production capability by modernising the infrastructure to do so, the Bush administration in 2006 added to the 1994 Stockpile Stewardship Program (SSP) a controversial Reliable Replacement Warheads Program (RRWP). The initial goal of the RRWP was to design a new generation of nuclear warheads that would be simpler, safer and longer lasting – thus more reliable. The so-called Reliable Replacement Warheads (RRWs) would also be easier to produce and can thus be churned out more rapidly. The administration’s proposal to begin production of the first of a series of RRWs ran into opposition in the Congress in 2008, which delayed a decision on RRW-funding until after the completion of a new assessment of future U.S. strategic nuclear deterrence requirements (Medalia, 2008).

²¹³ Miller (2007:58)

²¹⁴ Kristensen (2008a)

ensure the indefinite reliability of its nuclear weapons.²¹⁵ The problem is the Bush administration promises to eliminate older warhead models only after new weapons are in place, meaning that the U.S. will be building *more* nuclear weapons in order to have less.²¹⁶ In addition, the United States has given priority to life extension of the warheads that are slated to remain in the enduring stockpile rather than dismantle retired warheads.²¹⁷ In 2007 only 250 warheads were dismantled, compared with an average of almost 1,800 warheads per year in the 1990s.²¹⁸ As a result, dismantling the current backlog of retired warheads will not be completed until 2023. The United States has also reemphasised its reliance on nuclear weapons for national security (see Step 9e), decided to keep information relating to the size of its nuclear arsenal classified (Step 9b), and opposes international verification efforts which affect its own nuclear activities (Step 3 and 13). In short, U.S. disarmament efforts appear inconclusive and sporadic. They do not give an unequivocal impression that the United States seeks the total elimination of its nuclear arsenal. On the contrary, it appears that the United States is planning for the retention of nuclear weapons for an indefinite future.

Step 7: *The early into force and full implementation of START II and the conclusion of START III as soon as possible while preserving and strengthening the ABM Treaty as a cornerstone of strategic stability and as a basis for further reductions of strategic offensive weapons, in accordance with its provisions.*

Together, Russia and the United States possess more than 95 percent of the total number of nuclear weapons on our planet. Reducing the Russian and U.S. nuclear arsenals is therefore imperative in order to achieve nuclear disarmament. The call for the entering into force and implementation of the Strategic Arms Reduction Treaties (START) II and III can be understood as recognition of this.

²¹⁵ The administration has proposed to begin production of a Reliable Replacement Warhead (RRW), a new warhead design which will not only be more reliable but also easier to produce and thus can be churned out more rapidly (Kristensen, 2008a).

²¹⁶ Mello (2008)

²¹⁷ The majority of the work on U.S. warheads, assembly and disassembly, is carried out at the Pantex Plant in Texas. The current focus of the Pantex Plant is on extending the service life of existing warheads (Kile, Fedchenko and Kristensen, 2008).

²¹⁸ SIPRI (2008:370)

The START II and III were meant to be successors to the START I, a bilateral arms control treaty signed by the United States and the Soviet Union on July 31, 1991 and entered into force in December 1994.²¹⁹ The START I bars the two NWSs from deploying more than 6.000 strategic nuclear warheads. The START II, further limiting the deployed strategic nuclear weapons on each side to 3.000-3.500 weapons, and calling for the elimination of ICBMs able to carry several warheads for individual targets,²²⁰ was signed by the United States and the Russian Federation on January 3, 1993. Immediately after the signing of the START II, discussion started on how to proceed to a START III Treaty, which would further reduce the levels of deployed strategic weapons to 2.000-2.500 warheads, and, for the first time, promote the irreversible destruction of strategic nuclear warheads, including the elimination of the fissile materials from dismantled warheads. However, the START II and thus the START III never entered into force.²²¹

While the U.S. Senate ratified the START II on January 26, 1996, the Russian Duma delayed its ratification of the treaty until April 14, 2000. Moreover, Russia made its ratification dependent upon the preservation of the 1972 Anti-Ballistic Missile Treaty (ABMT), which had limited the arms race during the Cold War by banning large-scale ballistic missile defence systems, including space-based components.²²² In order to freely pursue its plans for a BMD, the United States gave formal notice to Russia on December 13, 2001, that it would unilaterally withdraw from the ABMT, which it then did on June 13, 2002.²²³ The United States thus made itself the first actor to permanently withdraw from an important nuclear non-proliferation and disarmament agreement.²²⁴ The day after the United States withdrew from the ABMT, Russia withdrew its ratification of the START II.²²⁵ The START II faded away and further discussions on the START III treaty became futile.²²⁶ Although the U.S. withdrawal from the ABMT may not have been the

²¹⁹ The Soviet Union's obligations under the treaty were assumed by Russia as its legal successor state; the treaty was later joined by Belarus, Kazakhstan and Ukraine, the other former Soviet republics with strategic nuclear weapons based on their territory.

²²⁰ So-called multiple independently targetable re-entry vehicles (MIRVs).

²²¹ Kile, Fedchenko and Kristensen (2008)

²²² Because a BMD could upset strategic balances, the ABMT kept a lid on the arms race kettle during the Cold War (van Dassen and Mærli, 2007). The ABMT limited anti-missile systems, and banned nationwide missile defences to reduce incentives for further arms racing (Diehl and Moltz, 2008:123-124).

²²³ U.S. Announcement of Withdrawal from the ABM Treaty (December 13, 2001)

²²⁴ van Dassen and Mærli (2007:11)

²²⁵ Diehl and Moltz (2008:155)

²²⁶ van Dassen and Mærli (2007:12)

only reason for the demise of START II and III, withdrawing from the ABMT is clearly not compatible with Step 7.

Step 8: *The completion and implementation of the Trilateral Initiative between the United States of America, the Russian Federation and the International Atomic Energy Agency.*

While Step 3 attempts to ban the production of additional fissile materials, Step 8 focuses on the removal of existing fissile materials. The elimination of surplus fissile materials would eliminate the possibility of the materials being diverted into making nuclear weapons. The Trilateral Initiative was an effort begun in September 1996 by Russia, the United States and the IAEA to develop a verification system which would permit the IAEA to monitor and verify permanent removals of weapons-grade plutonium that the two NWSs had each declared excess to their weapon needs.²²⁷ Such a system was needed because the IAEA safeguards system under the NPT is only designed to prevent peaceful nuclear materials and facilities in NNWSs from being used for military purposes, and not set up to cope with nuclear materials tied to weapons programs or with inspections at locations that have or had such programs.²²⁸ Moreover, the methods and the overall framework had to be designed to protect classified information and to ensure that the United States and Russia meet their obligations under Article I of the NPT, which prohibits the NWSs to transfer ownership or control to “any recipient whatsoever” of nuclear weapons directly or indirectly. IAEA access would therefore have to be restricted to prevent nuclear secrets from leaking out. The initiative thus sought to broaden the items that could be brought under IAEA monitoring to include any classified items containing plutonium, including nuclear warheads, warhead components, pits, or other sensitive items. The initiative also sought to ensure that these items would be permanently safeguarded, unlike material submitted to IAEA monitoring under existing voluntary agreements. If successful, the Trilateral Initiative would result in the first IAEA verification regime designed for disarmament purposes.²²⁹ Such a regime could also

²²⁷ Bunn (2003a)

²²⁸ Shea (2008)

²²⁹ Rauf (2001:39)

provide a framework for verifying excess fissile material in all states possessing nuclear weapons.²³⁰

According to Thomas Shea, head of the IAEA Trilateral Initiative Office over the full duration of its activities, the United States and Russia were on the brink of agreeing to a model verification agreement when the new Bush and Putin administrations brought the initiative to a halt in November 2001.²³¹ By the time of the 2002 IAEA General Conference, the United States and Russia had agreed that the initiative should be brought to a close, concluding that it had been a success and that it was now up to the states to enter into individual implementation agreements with the IAEA.²³² The 2002 Final Report of the Joint Working Group to the Trilateral Initiative Principals in many ways supported this conclusion, stating that “the enabling technologies developed under the Initiative could be employed by the IAEA on any form of plutonium in nuclear facilities, without revealing nuclear weapons information.”²³³ However, no nuclear materials have yet been placed under these verification agreements, and the implementation of the Trilateral Initiative seems to have come to a complete stand-still.²³⁴

Step 9: *Steps by all nuclear-weapon States leading to nuclear disarmament in a way that promotes international stability, and based on the principle of undiminished security for all:*

a) *Further efforts by the nuclear-weapon States to reduce their nuclear arsenals unilaterally.*

Step 9a calls on each NWS to reduce its own nuclear arsenals without waiting for the other NWSs to do the same. Because unilateral disarmament does not require negotiations with other parties, it can be implemented swiftly. On the negative side, unilateral disarmament can easily be halted or reversed because disarmament measures have not been formally negotiated, which

²³⁰ Those seeking to design a system for verifying the dismantlement of nuclear weapons do not have to start from a blank slate. They can benefit a great deal from building on the experience of the Trilateral Initiative (Shea, 2008).

²³¹ Shea (2008)

²³² Shea (2008)

²³³ Final Report of the Joint Working Group to the Trilateral Initiative Principals (2002)

²³⁴ van Dassen and Mærli (2007), Global Fissile Material Report 2008 (2008:62-71).

means that they are not legally binding, and normally not accountable through monitoring or verification.²³⁵

Since the adoption of the Thirteen Steps, the United States has announced unilateral reductions on two occasions. In June 2004, Bush initiated the Nuclear Weapons Stockpile Plan (NWSP), by which he sought to unilaterally cut the total U.S. stockpile of active and inactive warheads by nearly 50 percent from the 2001 level until 2012.²³⁶ These reductions were implemented five years ahead of schedule, in 2007, when the total stockpile of active and inactive consisted of no more than 5,400 warheads.²³⁷ On December 18, 2007, Bush therefore made a decision to make an additional unilateral cut of the remaining stockpile by another 15 percent until 2012.²³⁸ Of the 5,400 warheads in 2007, this meant that about 800 additional warheads would be cut.²³⁹ However, the reductions have occurred largely on paper. Although the weapons officially have been transferred from the Department of Defence (DOD) to the Department of Energy (DOE), where the National Nuclear Security Administration (NNSA) is responsible for dismantling them, the weapons remain mostly at their bases because the DOE does not have the capacity to store them.²⁴⁰ Moreover, because the United States has put priority on extending the service life of nuclear weapons scheduled to remain in the U.S. stockpile, the actual destruction of the retired weapons will not be completed until 2023.²⁴¹

²³⁵ Rauf (2001:43)

²³⁶ The *total* nuclear arsenal or stockpile of a given state can be divided into two main categories: active and inactive. The *active* stockpile refers to nuclear weapons which are operationally deployed, ready to be used. The *inactive* stockpile, also called reserve stockpile or responsive force, refers to non-deployed warheads which could be fielded quickly. Shannon Kile, Vitaly Fedchenko and Hans Kristensen estimated that as of January 2008 the United States maintained an estimated arsenal of approximately 4,075 operational nuclear warheads. Approximately 1,260 warheads are held in reserve, for a total stockpile of approximately 5,335 warheads. However, in addition, there are warheads which have been removed or *retired* from the stockpile, and are in the process of being dismantled. Although these are not considered part of the stockpile, they can be put back in service as long as they have not been dismantled. 5,100 U.S. warheads are scheduled to be dismantled between now and 2023. This puts the total number of U.S. nuclear warheads at around 10,000 (Kile, Fedchenko and Kristensen, 2008).

²³⁷ Norris and Kristensen (2007)

²³⁸ White House (2007)

²³⁹ By 2012, the estimated total stockpile will therefore be at roughly 4,600 warheads. Because the SORT sets an upper limit of 2,200 operationally deployed warheads, the remaining 2,400 warheads will likely make up the reserve warheads to hedge against unforeseen developments (Norris and Kristensen, 2007).

²⁴⁰ SIPRI (2008:369)

²⁴¹ Kristensen (2008a:62)

b) Increased transparency by the nuclear-weapon States with regard to the nuclear weapons capabilities and the implementation of agreements pursuant to Article VI and as a voluntary confidence-building measure to support further progress on nuclear disarmament.

This step calls upon the NWSs to provide information about their ability to take nuclear actions, including the aggregate number of nuclear warheads and stocks of fissile materials, as well as on the dismantlement of warheads and on the abolishment of fissile materials.²⁴² Nuclear transparency would give a realistic picture of the current situation and is thus a precondition for effective efforts to stem proliferation and make progress towards disarmament. Major sources of proliferation-relevant materials are found in the NWSs, which control them without obligation to adhere to international standards or monitoring. Complete accounting records are important to determine whether fissile materials or even nuclear weapons could have been illicitly removed. Further, transparency is needed in order to be able to verify reductions.²⁴³ Any success in nuclear weapons reductions will go along with doubts as to whether the reductions are really meaningful or whether they merely constitute a shift of warheads to other locations where they are not accounted for. Hence, transparency is important in order to build and sustain trust between disarming parties, and in order to build and sustain confidence that the nuclear disarmament process is taking pace as declared. Transparency of warheads would also give other states a realistic image of the capabilities of the individual NWSs, thus preventing unnecessary ambiguities and contribute to the prevention of potential new arms races and competitions.

The U.S. supplies by far the most detailed information about its nuclear weapons.²⁴⁴ As an outcome of the Openness Initiative, the United States has released an official amount of the total number of nuclear warheads in its stockpile up to 1961, the number of warheads retired or dismantled up to 1994, the number assembled each year, and some additional technical information on its nuclear warheads.²⁴⁵ This has enabled independent observers to collect quite comprehensive and unambiguous lists of warhead-related data from information in the public

²⁴² Schaper (2004)

²⁴³ Schaper (2004)

²⁴⁴ Schaper (2004)

²⁴⁵ Schaper (2004)

domain. The United States and the United Kingdom are also the only NWSs to have made public the total size of their stocks of HEU.²⁴⁶ However, the U.S. government neither confirms nor denies estimates on its nuclear stockpile. In 1999 the Pentagon decided to classify the number of nuclear warheads being dismantled, and the number of nuclear weapons in the stockpile.²⁴⁷ In addition, when it comes to the nuclear disarmament agreements, the United States has come to oppose international verification measures which would affect its own activities (see also Step 13). In contrast to START II and III, neither of which entered into force, the SORT does not provide for any transparency or verification measures.

c) *The further reduction of non-strategic nuclear weapons, based on unilateral initiatives and as an integral part of the nuclear arms reduction and disarmament process.*

Depending on the level of military planning to which they are confined, nuclear weapons are often divided into two categories: *strategic* nuclear weapons, and *non-strategic* nuclear weapons.²⁴⁸ While strategic nuclear weapons are designed to destroy population centres or other supposedly valuable objectives in order to deter aggression, non-strategic nuclear weapons are intended for short-range use on the battlefield.²⁴⁹ Examples of non-strategic nuclear weapons include nuclear land mines, nuclear artillery shells, and nuclear torpedoes. Although strategic nuclear weapons per definition usually have a greater yield, and thus more destructive potential, non-strategic nuclear weapons are often deemed the most dangerous due to their portability, proximity to battle-zones, lack of strong permissive action links, dangers of pre-delegation, and the risk of them being stolen.²⁵⁰

After the end of the Cold War, President George H. W. Bush (senior) on September 27, 1991, implemented the *Presidential Nuclear Initiative* (PNI), by which he unilaterally pledged to substantially reduce the U.S. non-strategic nuclear arsenal.²⁵¹ The PNI process initiated by Bush senior in 1991, reached its final implementation in 2003, by which time the United States had

²⁴⁶ Global Fissile Material Report 2008

²⁴⁷ Kile, Fedchenko and Kristensen (2008)

²⁴⁸ Non-strategic nuclear weapons are also often referred to as *tactical* nuclear weapons.

²⁴⁹ The distinction is artificial. Both strategic and non-strategic nuclear weapons cause similar effects. Some nuclear weapons could be classified as both strategic and non-strategic, depending on their use (Diehl and Moltz, 2008).

²⁵⁰ Rauf (2001:45)

²⁵¹ Kimball (2006)

unilaterally dismantled some 3.000 nuclear weapons.²⁵² Since the PNI was announced long before the adoption of the Thirteen Steps, the PNI does not constitute *further* reductions, as called for by Step 9a.

Today the United States has approximately 500 tactical nuclear weapons in its active nuclear arsenal.²⁵³ In addition, an estimated 790 are kept in the inactive arsenal.²⁵⁴ Although non-strategic nuclear weapons may have been retired after 2003 as part of the unilateral reductions announced by George W. Bush (junior) in 2004 and 2007 (see Step 9a), no additional initiatives particularly aimed at reducing non-strategic nuclear weapons have been announced. On the contrary, in the 2002 NPR the Bush administration calls for the development of new non-strategic nuclear weapons with different special capabilities, such as the destruction of hard and deeply buried underground facilities. As implied in the NPR, the U.S. Congress on May 9, 2003 lifted the 1993 Spratt-Furse Amendment, which banned research on non-strategic nuclear weapons.²⁵⁵ The 2004 Defence Authorisation Act included provisions that authorised funding for a so-called Robust Nuclear Earth Penetrator (RNEP) and an Advanced Nuclear Weapons Concept for the development of low-yield nuclear weapons, so-called “mini-nukes.” However, the Bush administration removed its request for funding of the weapons in October 2005. While the weapon-projects seem to be cancelled, *Jane’s Information Group* speculates that work geared towards the development of a RNEP may continue under another name.²⁵⁶

d) *Concrete agreed measures to further reduce the operational status of nuclear weapons systems.*

The operational status of nuclear weapons mainly refers to targeting and alert levels.²⁵⁷ The operational status is linked to the military role which nuclear weapons are assigned, as I come back to under Step 9e. During the Cold War, the United States based its national security on the

²⁵² The PNI-reductions mostly included non-strategic weapons, as I come back to under Step 9c.

²⁵³ Kile, Fedchenko and Kristensen (2008)

²⁵⁴ Norris and Kristensen (2007)

²⁵⁵ Wang (2003)

²⁵⁶ Jane’s Information Group (2005)

²⁵⁷ Sauer (2005:50-55)

doctrine of nuclear deterrence.²⁵⁸ To maintain the credibility of its nuclear deterrent, the United States maintained a so-called “Nuclear Triad,” referring to the three tiers of its strategic nuclear force: long range bombers, inter-continental ballistic missiles (ICBMs), and ballistic missile submarines. The purpose of the Triad was to complicate possible Soviet efforts to launch a disarming first strike against the United States. To further enhance the credibility of its nuclear deterrent, the United States kept its strategic nuclear weapons ready to launch against thousands of predetermined targets.²⁵⁹ Maintaining such a high operational status left a very short decision time and few safeguards to rule out any possibility of mistaken, unauthorised or accidental launches. By calling for a reduction of the operational status of nuclear weapons systems, Step 9d intends to reduce the risk of an “accidental” nuclear war.²⁶⁰

In its statement at the 2005 NPT Review Conference, the United States claimed that it no longer targets any state with nuclear weapons on “a day-to-day basis,” as was the case during the Cold War.²⁶¹ However, although targets for U.S. nuclear weapons are formally no longer predetermined, all targets are kept in a computer database and could be returned to their previous targeting status on short notice.²⁶² This means that a reduction of the operational status of U.S. nuclear weapons first and foremost refers to de-alerting.

In 1991 the United States put its bombers on a low alert level, but kept high the alert levels for ICBMs and SLBMs, which continue to be able to launch within minutes of a launch order.²⁶³ This is reflected in the 2002 NPR, which states that “a sufficient number of forces must be available on short notice.” According to some estimates, one third of the U.S. strategic nuclear arsenal remains on launch-ready alert with hundreds of missiles on land and sea fully armed, fuelled and ready to strike.²⁶⁴ Moreover, the still-evolving “Global Strike” (see Step 9e) has apparently not only revived the continuous high-alert status of bombers, but has further deepened

²⁵⁸ In short, nuclear deterrence relies on the assumption that war becomes less likely as the costs of war rise in relation to possible gains nuclear, and that potential aggressors could be deterred because the destructive potential of a nuclear retaliation would make the costs of resorting to war unacceptably high (Dougherty and Pfalzgraff, 2001:344-397).

²⁵⁹ Sauer (2005)

²⁶⁰ Blair (2007)

²⁶¹ Sanders (2005)

²⁶² Sauer (2005:52)

²⁶³ Blair (2007)

²⁶⁴ Blair (2007)

U.S. commitment to keep its nuclear forces on high alert in order to deliver rapid nuclear and non-nuclear strikes on targets anywhere on the globe.²⁶⁵ The Global Strike has an operation window of up to one hour, which means a short decision window. This is not compatible with Step 9d.

- e) *A diminishing role for nuclear weapons in security policies to minimise the risk that these weapons ever be used and to facilitate the process of their total elimination.*

While Step 9d seeks to avoid hastened or mistaken nuclear use by extending the time required to launch nuclear weapons in the active nuclear forces, Step 9e seeks to minimise the risk of nuclear use in all its aspects by addressing the underlying behaviour and thinking about nuclear weapons. Because some states rely on nuclear weapons for national security, the behaviour and thinking about nuclear weapons must be changed in order to facilitate their elimination.

As discussed under Step 9d, nuclear weapons played a huge role in U.S. security policy during the Cold War. When the Cold War came to an end, the international security environment changed fundamentally, forcing a rethinking of the role for nuclear weapons in U.S. national policy.²⁶⁶ In 2001, the United States undertook the latest review of its nuclear posture, parts of which it presented in January 2002. The 2002 *Nuclear Posture Review* (NPR) seeks to adapt U.S. nuclear posture to the post-Cold War world. It claims to reduce the role for nuclear weapons in U.S. security policy by outlining a “New Triad,” composed of a combination of 1) conventional and nuclear offensive strike systems; 2) defences, including a ballistic missile defence system (BMD); and 3) a responsive infrastructure able to “provide new capabilities in a timely fashion to meet emerging threats.” According to the NPR, without going into too much detail, the New Triad has four primary missions: 1) to *assure* allies and friends, 2) to *dissuade* future military competition, 3) to *deter* threats against U.S. interests, allies and friends, and 4) to *defeat* any adversary if deterrence fails.²⁶⁷ A fifth mission, to *prevent* nuclear proliferation and the use of weapons of mass destruction (WMD) before the threat has manifested itself,²⁶⁸ was later added

²⁶⁵ Kristensen (2007)

²⁶⁶ Kristensen (2008a)

²⁶⁷ NPR (2002)

²⁶⁸ The term WMD includes nuclear, biological and chemical weapons.

through the 2002 *National Security Strategy of the United States of America* (NSS).²⁶⁹ The doctrine of using nuclear weapons, pre-emptively if necessary, against anyone using WMD against the United States, its forces abroad, and friends and allies, was reaffirmed in the 2002 *National Strategy to Combat Weapons of Mass Destruction* (NSWMD). The role of U.S. nuclear weapons thus ballooned from deterring nuclear weapons to deterring all forms of WMD.²⁷⁰

The New Triad also moves *beyond* the old triad by adding defences, such as a BMD. The adding of a BMD is not only a recognition that offensive capabilities alone may not deter aggression, but will, according to the NPR, make it possible to reduce U.S. reliance on nuclear weapons to enforce deterrence.²⁷¹ However, according to the Thirteen Steps, all measures under Step 9 should be implemented in “a way that promotes international stability.” As discussed under Step 4, the planned establishment of a BMD does not do that. On the contrary, China and Russia have expressed concern that a U.S. BMD would undermine their nuclear deterrent and thus weaken their national security. Moreover, although the offensive first leg of the New Triad will move beyond the offensive old triad, the old triad of ICBMs, strategic bombers and ballistic missile submarines (SSBNs) will “continue to play a vital role.”²⁷²

The NPR leaves no doubt that nuclear weapons still have a prominent role in U.S. national security policy. According to the NPR, nuclear weapons “provide credible military options to deter a wide range of threats,” and nuclear capabilities “possess unique properties that give the United States options to hold at risk classes of targets important to achieve strategic and political objectives.” In addition, the NPR proposes a “new mix” of nuclear and non-nuclear capabilities, calls for the development of new nuclear weapons,²⁷³ and even goes so far as to indicating the possible use of nuclear weapons to “dissuade adversaries from undertaking military programs or operations that could threaten U.S. interest or those of allies and friends.” In setting requirements for its nuclear strike capabilities, the NPR names a broad range of contingencies for which the

²⁶⁹ The NSS is a periodically prepared document by the executive branch of the U.S. government for Congress outlining major national security concerns and how the administration plans to deal with them. The NSS of the Bush administration was released in September 17, 2002 and reiterated on March 16, 2006. According to the NSS, “the United States will, if necessary, act pre-emptively” to forestall or prevent hostile acts by adversaries.

²⁷⁰ Kristensen (2007:56)

²⁷¹ NPR (2002)

²⁷² NPR (2002)

²⁷³ Specifically, the document envisions the development of new nuclear weapons with the capability to defeat targets able to withstand a non-nuclear attack, such as underground bunkers and facilities.

United States must be prepared. Although Russia remains the focus due to the sheer size of its nuclear arsenal, Iraq, Iran, Syria, Libya, the DPRK and China, found themselves listed in the NPR as possible contingencies involving the use of U.S. nuclear weapons.²⁷⁴

The pre-emption doctrine of the Bush administration was implemented with the creation of “Global Strike,” a new military command with the mission to deliver conventional or nuclear strikes on any target anywhere in the world.²⁷⁵ The U.S. Strategic Command's new Joint Functional Component Command for Space and Global Strike, the new command structure designed to plan and execute global strikes went fully operational on November 18, 2005.²⁷⁶ Thus, instead of diminishing the role for nuclear weapons, the United States, despite claiming the opposite, has not only reaffirmed the role for nuclear weapons in U.S. national security, but has given them new missions.²⁷⁷

f) The engagement as soon as appropriate of all the nuclear-weapon States in the process leading to the total elimination of their nuclear weapons.

The phrasing “as soon as appropriate” may be a reference to the completion of Step 4, which calls for the establishment of a subsidiary body within the Conference on Disarmament to deal

²⁷⁴ In response to the new guidelines set out by the NPR, the U.S. national nuclear war plan was upgraded and re-named on March 1, 2003 (Kristensen, 2008a). The strategic war plan of the Cold War, known as the *Single Integrated Operational Plan* (SIOP), which primarily focused on the Soviet Union, was replaced by a set of smaller and more flexible scenario-driven strike plans, called *Operations Plan* (OPLAN) 8044.

²⁷⁵ Schell (2007:125), Kristensen (2008a:59)

²⁷⁶ Global Strike has taken several forms, and is still evolving. For more information on Global Strike see Kristensen (2006 and 2008a), as well as www.nukestrat.com/us/stratcom/globalstrike.htm. The offensive and pre-emptive thinking that underpins Global Strike also found its way into the revision of the *Doctrine for Joint Nuclear Operations*, which was released on March 15, 2005. The doctrine lists several scenarios where nuclear weapons might be used. Among others does it allow the use of nuclear weapons to pre-empt use of WMD against the United States, its friends and allies, to stop potentially overwhelming conventional enemy forces, to end a war on favourable U.S. terms, and even to “show U.S. intent and capability to use nuclear weapons to deter enemy from using WMDs.” After much controversy, the doctrine was formally cancelled in September 2005 and the Bush administration has refused to acknowledge that it has adopted the doctrine in U.S. policy (Speed and May, 2006:272). However, some analysts argue that the cancellation simply removed the controversial document from the public domain, and that the guidance that directs the use of nuclear weapons remains unchanged by the cancellation (www.nukestrat.com/us/jcs/canceled.htm).

²⁷⁷ The role of nuclear weapons presented in the thesis is only a brief overview. The role for nuclear weapons in U.S. security policy is subject to frequent updates via guidance documents that change the posture of the weapons and the doctrine that guide their use. A chronology of the major known nuclear weapons guidance issued by the White House and the military since the Bush administration took office in 2001 can be found on www.nukestrat.com/us/guidance.htm. A more detailed presentation of U.S. nuclear war plans, including the Global Strike mission, can be found in Kristensen (2008a).

with nuclear disarmament. As noted under Step 4, the establishment of such a body has been stalled. Nuclear weapon reductions have thus so far been confined to the United States and Russia. The other three NWSs have indicated that they will not enter into disarmament talks until U.S.-Russian levels drop down to their levels.²⁷⁸ However, the United States and Russia have replaced the START II and III with the SORT, which does not require the elimination of any nuclear weapons (see Step 5 and 7). Moreover, the START I will expire on December 5, 2009. Russia has already complained about the seeming disinterest of the Bush administration in pursuing a follow-up agreement.²⁷⁹ Now, for the first time since the process of nuclear arms reductions began in the early 1970s, there are no plans for additional agreements.²⁸⁰ The United States has clearly stated that it regards nuclear weapons as important for its national security for the foreseeable future (Step 9e). The Bush administration has called for a “revitalised” nuclear infrastructure (Step 5), and has proposed to resume industrial-scale production of nuclear weapons in order to ensure the indefinite reliability of its nuclear weapons (see Step 5, 6 and 9c).²⁸¹ These developments do not indicate that the United States seeks to eliminate its nuclear arsenal any time soon.

Step 10: *Arrangements by all nuclear-weapon States to place, as soon as practicable, fissile material designated by each of them as no longer required for military purposes under IAEA or other relevant international verification and arrangements for the disposition of such material for peaceful purposes, to ensure that such material remains permanently outside of military programmes.*

While Step 8 only addressed U.S. and Russian excess plutonium, Step 10 calls upon all the NWSs to verifiably dispose of all their excess fissile materials, both plutonium and HEU.²⁸² The rationale behind this step is not only to ensure that fissile materials are not used to build nuclear weapons, but also to prevent such materials to fall into the hands of non-state actors.²⁸³

²⁷⁸ Mærli and Lodgaard (2007)

²⁷⁹ Nuclear Threat Initiative (2008)

²⁸⁰ Cirincione (2007:186)

²⁸¹ NPR (2002)

²⁸² In mid-2008, the total global stockpile of weapon-usable plutonium and HEU was estimated to be 500 metric tons and 1.370-1.970 metric tons respectively (Global Fissile Material Report 2008).

²⁸³ Cirincione, Wolfsthal and Rajkumar (2005:45)

The Trilateral Initiative sought to allow the IAEA to monitor the disposition of plutonium which the United States and Russia had each declared excess to their military needs. As discussed under Step 8, the United States has not taken any steps towards implementing the monitoring agreement developed under the initiative. Independent of the Trilateral Initiative, the United States and Russia concluded an agreement on June 4, 2000 referred to as the *Plutonium Management and Disposition Agreement* (PMDA), under which they agreed to dispose most of their excess weapon-grade plutonium.²⁸⁴ The United States agreed to dispose of 34 metric tons of weapons plutonium. In late 2007, the United States declared excess an additional 9 tons of plutonium, for a total of 54 tons.²⁸⁵ However, the United States has yet to implement the disposal of the excess weapons plutonium it has agreed to dispose.²⁸⁶

Of the total 741 tons of HEU which the United States has produced, 96 tons had been eliminated as of mid-2008.²⁸⁷ Another 137 tons have been declared excess, awaiting disposition. The disposing occurs primarily by down-blending into LEU as nuclear reactor fuel.²⁸⁸ In this form, the material is unsuitable for use in nuclear weapons and can be used as commercial nuclear reactor fuel. Additional 128 tons have been earmarked as naval reactor fuel reserves.²⁸⁹

In addition, The United States has implemented several efforts to assist other states in the disposition of their excess fissile material. On May 26, 2004 the United States with the IAEA and other partners announced an international cooperative effort known as the Global Threat Reduction Initiative (GTRI), designed to identify and repatriate Russian and U.S. HEU and spent reactor fuel worldwide.²⁹⁰ Further, the 1992 Cooperative Threat Reduction Program (CTRP), which purpose it is to secure and dismantle WMD and their associated infrastructure in the

²⁸⁴ *Agreement between the Government of the United States of America and the Government of the Russian Federation Concerning the Management and Disposition of Plutonium Designated as no longer Required for Defensive Purposes and Related Cooperation* (1999)

²⁸⁵ As of mid-2008, the total U.S. stockpile of plutonium consists of nearly 92 tons (Global Fissile Material Report 2008).

²⁸⁶ In order to dispose of surplus U.S. weapons-grade plutonium, the United States will construct three new facilities: a facility that will disassemble the cores, or "pits," of surplus nuclear weapons; a MOX Fuel Fabrication Facility that will produce mixed oxide (MOX) fuel for nuclear reactors; and a Waste Solidification Building to dispose of the liquid waste from the other two disposition facilities (National Nuclear Security Administration, 2008b).

²⁸⁷ Global Fissile Material Report 2008

²⁸⁸ National Nuclear Security Administration (2008d)

²⁸⁹ The United States uses HEU to fuel submarine and surface ship propulsion reactors. It is estimated that the 128 tons set aside for military naval nuclear propulsion will last 40-60 years (Global Fissile Material Report 2008).

²⁹⁰ IAEA Staff Report (2004)

former Soviet Union, was extended for an additional seven years in June 2006.²⁹¹ On February 18, 1993 the United States and Russia also made a so-called *U.S.-Russian HEU Purchase Agreement*, in which the United States purchased 500 tons of HEU from Russia to be blended down to low-enriched uranium (LEU) and consumed in U.S. power reactors.²⁹² The deal will be completed in 2013.²⁹³ These measures are good example of what Christopher Ford calls additional disarmament measures, not among the Thirteen Steps.

Although the United States has made several efforts in disposing of excess fissile material worldwide, and has declared as excess to weapons requirements or for all military purposes a significant fraction of its stocks of both HEU and plutonium produced for weapons, the Bush administration has been reluctant to place its own excess fissile material under IAEA or other relevant international verification and arrangements. This is not consistent with the Step 10, which specifically calls for international verification.

Step 11: *Reaffirmation that the ultimate objective of the efforts of States in the disarmament process is general and complete disarmament under effective international control.*

General and complete disarmament refers not only to nuclear weapons, but to all types of weapons. The United States has ratified several arms control agreements, such as the 1975 Biological Weapons Convention,²⁹⁴ the 1997 Chemical Weapons Convention,²⁹⁵ the 1967 Outer Space Treaty,²⁹⁶ the 1972 Seabed Treaty,²⁹⁷ and two of the five protocols of the 1980 Convention

²⁹¹ The objective of the Cooperative Threat Reduction Program (CTRP) is to assist Russia and new states born from the collapse of the USSR in providing adequate protection to prevent terrorists and thieves from acquiring nuclear materials and technology that could be used to make nuclear weapons (www.dtra.mil/oe/ctr/).

²⁹² *Russian-U.S. HEU Agreement* (1993)

²⁹³ As of mid-2008 Russia had blended down 337 tons (Global Fissile Material Report 2008).

²⁹⁴ *Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction* (1975)

²⁹⁵ *Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and Their Destruction* (1997)

²⁹⁶ *The Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies* (1967) bans parties from placing WMD in outer space, including Earth orbit, the Moon, and other celestial bodies.

²⁹⁷ *on the Prohibition of the Emplacement of Nuclear Weapons and other Weapons of Mass Destruction on the Seabed and the Ocean Floor and in the Subsoil Thereof* (1972)

on Certain Conventional Weapons (CCCW).²⁹⁸ However, the United States also opposes many arms control and disarmament efforts, such as the 1997 Mine Ban Treaty,²⁹⁹ the 2008 Convention on Cluster Munitions,³⁰⁰ the Prevention of an Arms Race in Outer Space (PAROS),³⁰¹ and three of the protocols of the CCCW. Moreover, U.S. military spending has been on the rise since 2001.³⁰²

In regard to the nuclear sphere, as already discussed under Step 1 and Step 7, the United States has refused to ratify the CTBT, has withdrawn from the ABMT, and decided to leave out any weapons elimination requirements of the 2002 SORT. Some scholars also point to the recent U.S.-India nuclear deal as an example that the United States has given up on the goal of a world free from nuclear weapons.³⁰³ The deal does not put any disarmament requirements on India, which raises questions about the commitment of the United States to nuclear disarmament.³⁰⁴ These actions and developments do not indicate that the United States follows an objective of general complete disarmament under effective international control

²⁹⁸ The *Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons Which May Be Deemed Excessively Injurious or to Have Indiscriminate Effects* (1980) consists of a set of five protocols which restrict the use of 1) fragmentation weapons, 2) landmines, 3) incendiary weapons, 4) blinding laser weapons, and 5) sets out obligations and best practice for the clearance of explosive remnants of war. The United States has only adopted two of the five protocols (Protocol 1 and 2), the minimum required to be considered a signatory.

²⁹⁹ *Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and on their Destruction* (1997)

³⁰⁰ The *Convention on Cluster Munitions* prohibits all use, stockpiling, production and transfer of cluster munitions, a type of weapon which scatters small bombs over an area. The convention was opened for signature in Oslo on December 3, 2008. The United States is in outright opposition to the ban.

³⁰¹ PAROS would complement the Outer Space Treaty by preventing space weaponisation and programs, such as BMD systems, satellite-guided weapons launched from Earth and spy satellites collecting and using data for offensive military purposes. Each year in the general assembly, member states adopt a resolution on the PAROS by an overwhelming majority. Every state votes in favour of negotiating a treaty on PAROS, except the United States. Most recently, the United States dismissed a draft proposal submitted on February 12, 2008, by Russia and China to the Conference on Disarmament on banning weaponisation of space (Reaching Critical Will, 2008).

³⁰² During fiscal years 2001-2007 U.S. military expenditure increased by 85 percent in nominal terms and by 59 percent in real terms (SIPRI Yearbook 2008).

³⁰³ The U.S. Congress on October 1, 2008, gave final approval to an agreement facilitating nuclear cooperation between the United States and India (Pan and Jayshree, 2008). Under the agreement India gets access to U.S. nuclear fuel, reactors and technology, overturning a ban on such trade instituted after India first conducted a nuclear test in 1974. In exchange, India has agreed to separate its civil and military nuclear facilities and place civil facilities under IAEA safeguards. This makes India the only known state with nuclear weapons which is not a party to the NPT but still allowed to carry out nuclear commerce with states parties to the NPT. The deal is controversial, and critics claim that the deal not only moderates the disincentives for nuclear proliferation, but may encourage more states to proliferate (Weiss, 2006).

³⁰⁴ Weiss (2006)

Step 12: *Regular reports, within the framework of the NPT strengthened review process, by all States parties on the implementation of Article VI and paragraph 4(c) of the Decision on “Principles and Objectives for Nuclear Non-Proliferation and Disarmament”, and recalling the Advisory Opinion of the International Court of Justice of July 8 1996.*

At the 1995 NPT Review and Extension Conference, the states parties to the NPT agreed to strengthen the review process of the NPT.³⁰⁵ The strengthened review process provides that substantive issues shall be considered at preparatory conferences prior to each review conference in order to promote the full implementation of the treaty. It was also agreed that the review conferences should look forward as well as back, by evaluating the implementation of the NPT in the period under review, as well as identifying areas in which, and the means through which, further progress, including the universality of the treaty, should be sought in the future. By referring to Paragraph 4(c) of the Decision on Principles and Objectives for Nuclear Non-Proliferation and Disarmament and the 1996 Advisory Opinion of the International Court of Justice, Step 12 calls upon all states parties to the NPT to report at the Preparatory Conferences and the Review Conferences both on their progress towards nuclear disarmament, as well as proposing measures by which the ultimate goal of eliminating nuclear weapons can be achieved.³⁰⁶

Although the United States regularly reports actions by which it claims to be fulfilling its Article VI-obligation, it underlines that it provides information on a *voluntary* basis.³⁰⁷ Moreover, as already noted under Step 9b, the United States in 1999 decided to classify the number of

³⁰⁵ Decision 1: “Strengthening the Review Process for the Treaty,” Final Paper of the 1995 NPT Review and Extension Conference

³⁰⁶ “The determined pursuit by the nuclear-weapon States of systematic and progressive efforts to reduce nuclear weapons globally, with the ultimate goals of eliminating those weapons, and by all States of general and complete disarmament under strict and effective international control” (Paragraph 4(c) of the Decision on “Principles and Objectives for Nuclear Non-Proliferation and Disarmament”). The 1996 ICJ Advisory Opinion on the Legality of the Threat or Use of Nuclear Weapons states that the obligation pertained in Article VI is an obligation to achieve the *result* of nuclear disarmament in all its aspects.

³⁰⁷ See for example the U.S. statement to the 2005 NPT Review Conference. Here Ambassador Jackie W. Sanders, Special Representative of the President for the Non-proliferation of Nuclear Weapons, stated that “the United States values these opportunities to volunteer information on its policies, activities, and achievements contributing to the universal implementation of all substantive articles of the Treaty, including Article VI.”

warheads being dismantled.³⁰⁸ This makes it difficult to assess the implementation of Article VI over time.

Step 13: *The further development of the verification capabilities that will be required to provide assurance of compliance with nuclear disarmament agreements for the achievement and maintenance of a nuclear-weapon-free world.*

Verification can be understood as the “process of gathering and analysing information to make a judgement about parties’ compliance or non-compliance with an agreement.”³⁰⁹ Verification of compliance is crucial for ensuring the irreversibility of nuclear disarmament.³¹⁰ It also builds trust between the states parties to a given agreement, and maintains confidence in the disarmament process.³¹¹

Although the United States is not obligated to submit to IAEA safeguards, the United States on November 18, 1977 concluded a voluntary agreement with the IAEA for applications of safeguards on some of its peaceful nuclear activities.³¹² The United States also supports the Additional Protocol to its voluntary offer agreement. However, the U.S. version of the agreement contains an exclusive clause, which permits the United States to restrict IAEA inspections in respect to activities of “direct national security significance to the United States or to locations or information associated with such activities.”³¹³

Recalling the definition of nuclear disarmament presented in chapter 1.4, nuclear disarmament cannot take place without vertical non-proliferation. This view is reflected by the importance given to a FMCT and the CTBT, which reduce the possibility of qualitative and quantitative vertical proliferation, as steps towards the achievement and maintenance of a nuclear-weapon-free world (see Step 1 and Step 3). As discussed under Step 3, the United States opposes a FMCT with verifiable capabilities. While the United States does not support the CTBT (see Step 1), the

³⁰⁸ Kile, Fedchenko and Kristensen (2008)

³⁰⁹ Persbo and Bjørningstad (2008)

³¹⁰ Schaper (2004)

³¹¹ Rauf (2001:55)

³¹² *Agreement between the United States of America and the International Atomic Energy Agency for the Applications of Safeguards in the United States of America* (1977)

³¹³ Hirsch (2004)

United States continues to work with the CTBTO on IMS-related activities. Until 2005 the United States funded 19 million \$ out of the 105 million \$ budget of the CTBTO, much of which went to the funding and the further development of the IMS.³¹⁴ On November 10, 2005, however, the U.S. Congress started to cut its share of contributions to the CTBTO funding, including its verification system, which has continued to decrease since.³¹⁵

Moreover, the United States did not put in place verification mechanisms in the SORT (see Step 5), and has withdrawn its support from the Trilateral Initiative (Step 8). However, the United States remains accountable under START I. START I was completed in 2001 and is being fully verified under a system of intrusive on-site inspections and information exchanges. However, START I is due to expire on December 5, 2009 unless extended by that time. Negotiations on extending the treaty have yet to take place. In sum, the United States does not seem to support verification measures which would effect its own compliance with nuclear disarmament agreements.

³¹⁴ www.ctbto.org/member-states/member-states-payments/

³¹⁵ Bunn (2006:85)

Table 4: Compatibility between U.S. nuclear weapons policy and the thirteen steps for nuclear disarmament and non-proliferation

Step#	Issue	U.S. policy
1	CTBT	Rejects the CTBT
2	Test moratorium	Moratorium remains in place
3	Verifiable FMCT	Opposes verification
4	Subsidiary body on nuclear disarmament	BMD-plans obstruct progress
5	Irreversibility	Not applied in the SORT; further reductions have been tied to the restoration of nuclear weapons production capability
6	Unequivocal undertaking	Disarmament efforts appear inconclusive and sporadic
7	START II and III, ABMT	Withdrew from the ABMT
8	Trilateral Initiative	Set aside without implementation
9a	Unilateral reductions	Initiated the NWSP in 2004 and announced additional unilateral cuts in 2007
9b	Transparency	Has classified information relating to the size of its nuclear arsenal
9c	Non-strategic reductions	None beyond the PNI; contemplates the development of new non-strategic weapons
9d	Reduce operational status	Alert status remains high
9e	Diminish role for nuclear weapons	Continues to rely on nuclear weapons for national security; nuclear weapons have been assigned additional tasks
9f	Total elimination of its nuclear weapons	Has made efforts for the retention and modernisation of its nuclear arsenal and complex
10	Verified removal of excess fissile materials	Has declared significant fissile materials to be excess, but has been reluctant to place the materials under international verification
11	Reaffirm goal of GCD	Opposes many arms control efforts and has increased military expenditure; has come to differentiate between “good” and “bad” nuclear weapons
12	Reporting	Has classified the number of nuclear warheads being dismantled
13	Verification	Seems to reject verification measures which would affect its own disarmament efforts

5. Discussion and conclusion

This chapter discusses the findings of the analysis (see table 4) in order to answer the research questions.

5.1. U.S. nuclear weapons policy and its impact on the NPT

The first research question the thesis set out to answer was: “*Is U.S. nuclear weapons policy compatible with a strong and effective NPT?*” In order to answer this question, the NPT and the pressures it is exposed to were explored (chapter 2). Here it was argued that the NPT can be understood as the result of a bargaining process, in which the NNWSs gained benefits and concessions which made it worthwhile to tolerate the discriminatory nature of the treaty. The obligation to disarm, pertained in Article VI of the NPT, is an essential part of this bargain. Although Article VI does not have undisputed legal standing, nuclear disarmament has great political importance and relevance. In order for the NPT to remain strong and effective, nuclear non-proliferation and disarmament must go hand in hand. Being a NWS, U.S. nuclear weapons policy first and foremost affects the viability of the NPT by the extent to which the United States is making a serious effort toward fulfilling its obligation of nuclear disarmament. In order to assess whether U.S. nuclear weapons policy is compatible with nuclear disarmament, and thus whether this policy is compatible with a strong and effective NPT, U.S. nuclear policy was analysed in light of the Thirteen Steps.

As seen in table 4, U.S. nuclear policy contravenes the Thirteen Steps in a number of respects. *Contrary* to the steps, the United States has rejected the CTBT (Step 1); it does not support a verifiable FMCT (Step 3); it has not applied the principle of irreversibility in the SORT, and has tied further reductions of its nuclear arsenal to the capacity to produce new nuclear warheads (Step 5); its nuclear disarmament efforts appear sporadic and inconclusive, thus leaving room for doubt about its intentions to rid itself of its nuclear arsenal (Step 6); it has withdrawn from the ABMT, thus ensuring the failure of the START II and START III (Step 7); it set aside the Trilateral Initiative without implementation (Step 8); it has classified information relating to the size of its nuclear weapons stock (Step 9b and 12); it has not announced additional reductions in its non-strategic nuclear arsenal, but has contemplated the development of new non-strategic nuclear weapons (Step 9c); it has not only decided to keep its ICBMs and SSBNs on high alert,

but the Global Strike mission seems to have put nuclear equipped bombers back on high alert as well (Step 9d); it has reemphasised the importance of nuclear weapons in its security policy and even expanded the role for nuclear weapons (Step 9e); it has called for the modernisation and indefinite retention of its nuclear weapons and nuclear complex (Step 9f); it opposes verified removal of U.S. fissile materials which it has declared to be excess to its military needs (Step 10); it opposes several arms control agreements, has greatly increased its military spending, and has come to except key allies from pressure to disarm (Step 11); and it rejects having its nuclear activities subjected to international verification (Step 3, 8, 10 and 13).

The tendency of incompatibility stands at great risk of outweighing U.S. nuclear policy initiatives which are in support of the Thirteen Steps. In conformity with the Thirteen Steps, the United States has upheld its moratorium on nuclear testing (Step 2), and it has announced unilateral nuclear weapon cuts (Step 9a). However, U.S. disarmament efforts relating to Step 2 and 9a are not unequivocal (see Step 6). Although the United States has, in consistency with Step 2, not tested or decided to conduct nuclear tests since it put in place its moratorium on nuclear testing, it has made clear that it does not rule out future testing and has undertaken measures to restore its ability to conduct underground nuclear testing. Similarly, although the United States has, in consistency with Step 9a, declared unilateral cuts in its nuclear arsenal in 2004 and 2007, the announced reductions have occurred largely on paper. In sum, therefore, the findings of the analysis strongly indicate that U.S. nuclear weapons policy is *incompatible* with a strong and effective NPT.

The second research question builds on the first: “*In what ways does U.S. nuclear policy underpin the role and strength of the NPT, and how could this policy be policy detrimental to the viability of the treaty?*” As shown in the theoretical chapter (chapter 2), the failure to disarm constitutes a “pressure from above.” Although the United States may not be violating the NPT in a legal sense, the findings of the analysis suggest that U.S. nuclear weapons policy is overall *detrimental* to the viability of the NPT. The United States does not live up to the expectations of the NNWSs with regards to nuclear disarmament, as reflected by the Thirteen Steps.

It is truly extraordinary that so many states agreed to forsake weapons which at the time the NPT was negotiated were hailed as the ultimate national security guarantor, and in doing so, in theory, submitted themselves at the mercy of the handful of states with the capability to annihilate states with “the push of a button.” Without receiving in exchange a promise from the NWSs to rid themselves of their nuclear arsenals, the NPT would probably not have been possible in 1970, nor would it have been extended in 1995. Regardless of the legal dimension, many NNWSs see disarmament as part of the grand bargain that lies at the heart of the NPT: states without nuclear weapons agreed to forsake them; states with nuclear weapons agreed to eliminate them.

By continuing a policy which not only disregards nuclear disarmament, but in many respects runs directly contrary to nuclear arms reductions, the United States is undermining the foundation of the NPT. The health, effectiveness, progress and future of the NPT depends on the reactions of the large number of NNWSs which see Article VI as important. It affects their incentives to respect the regime, their willingness to cooperate, the likelihood that some of them will wish to seek nuclear weapons, their willingness to support strong enforcement measures against those who violate or abuse the regime.³¹⁶

Over the long run, the bifurcation of the world into nuclear “haves” and “have-nots” is an unstable situation.³¹⁷ Lack of progress on nuclear disarmament may cause NNWSs to withdraw individually or collectively. If some states withdraw from the NPT, many others may follow. This would not only increase “pressure from outside,” but the negative spiral of nuclear proliferation where one nuclear arsenal gives birth to another, a process which the NPT successfully halted more than 35 years ago, may start anew. More than 40 states could produce nuclear weapons, if their governments decided to invest the time, money, and political effort to do so.³¹⁸ However, although the DPRK on January 10, 2003, announced its withdrawal from the NPT,³¹⁹ withdrawal from the NPT comes with some difficulties. The NPT is almost universal, and states which would withdraw would be isolated and come under political pressure. The immediate unravelling of the NPT through mass withdrawal therefore does not seem very likely at this time.

³¹⁶ Miller (2007:68)

³¹⁷ Miller (2007:65)

³¹⁸ Crioncione, Wolfsthal and Rajkumar (2005:45).

³¹⁹ Mærli and Lodgaard (2007)

A more likely scenario is that the NPT continues to exist, but that the treaty could become more and more marginalised. Even if no states leave the treaty, the lack of progress on nuclear disarmament is already causing dissatisfaction and frustration. Frustration due to the United States not living up to its disarmament obligations could make some NNWSs dig in their heels against new ideas that could strengthen non-proliferation efforts and make the NPT more effective, regarding restrictions on their nuclear freedom as another form of nuclear apartheid. The NPT is only as strong as its member states make it. Not disarming means that the discriminatory nature of the NPT, the bifurcation into nuclear haves and not-haves, remains intact. This is a total disregard of the interests of the NNWSs, which is further strengthened by the unwillingness of the United States to subject its nuclear activities to international verification (Step 3, 8, 10 and 13). Despite voluntary safeguards agreements on some of their civilian nuclear activities, the NWSs are exempted from international monitoring.³²⁰ With some exceptions, accurate information on nuclear materials is lacking.³²¹ Introducing verification mechanisms on at least some of the nuclear activities of the NWSs, for example in relation with a FMCT, would contribute to the reduction of the discriminatory nature of the NPT. Opposing verification sends a signal to the NNWSs that the United States intends to uphold the discriminatory nature of the NPT not only when it comes to nuclear weapons, but also when it comes to verification and transparency. In addition, as I will come back to, U.S. opposition towards verification holds a risk of undermining the IAEA safeguards system.

By not disarming in a more dedicated, swift way, the United States projects a message which claims that nuclear weapons enhance U.S. security, while in the hands of others, especially states not allied with the United States, they are a threat. The United States has for example exempted India, a key ally of the United States from pressure to disarm (see Step 11). Differentiating between “good nukes” and “bad nukes” goes against the fundamental principle which guides the application of the NPT: that all nuclear weapons, regardless of who controls them, constitute a threat to world peace and thus should be eliminated. The apparent double standard of the United States undermines non-proliferation efforts and thus the goal of achieving a world free from

³²⁰ *Agreement between the United States of America and the International Atomic Energy Agency for the Applications of Safeguards in the United States of America* (1977)

³²¹ Schaper and Mærli (2007:241)

nuclear weapons. Success in preventing the proliferation of nuclear weapons depends at some fundamental level on the ability to make a credible and compelling argument that nuclear weapons, regardless of the politics of a particular regime, are neither necessary nor desirable, that whatever advantages they confer are outweighed by their costs.³²²

The ideal normative environment for promoting non-proliferation is one in which nuclear weapons are widely or even universally regarded to be illegal, illegitimate and immoral. A universal approach is also crucial to rallying international opinion against states that attempt to remain outside the NPT.³²³ Demanding that NNWSs renounce nuclear weapons while claiming that nuclear weapons are important to ensure its own national security is hypocritical. If the United States does not intend to abide to nuclear disarmament, but rather chooses to rely on sustained nuclear capabilities, it will become harder to point to the salience of the non-proliferation pledge of nuclear abstinence for NNWSs in Article II of the NPT, as well as convincing the DNWSs to commit themselves to the same disarmament obligation.³²⁴

Similarly, by opposing FMCT-verification measures on the argument that effective monitoring of compliance cannot be achieved (Step 3), the United States implies that the NPT itself is not verifiable.³²⁵ IAEA safeguards can thus be devaluated and their importance as well as acceptance could fade. This would make it much more difficult to manage “pressure from within.” Dividing nuclear weapons into “good” and “bad” depending on the politics of a particular regime is also problematic in this regard because it renders verification superfluous. Contrary to nuclear weapons capacity, the intentions of a particular regime cannot be verified. As acknowledged in the 2002 NPR, it is difficult to predict whether a current ally or friend will become a future adversary or opponent. Intentions can change. Although verification cannot ensure compliance, it can produce, if effective, convincing evidence of non-compliance.³²⁶ Verification measures would also consolidate and strengthen the recognition that nuclear materials are not only a

³²² Miller (2007:65)

³²³ Diehl and Moltz (2008:83)

³²⁴ van Dassen and Mærli (2007:16)

³²⁵ van Dassen and Mærli (2007)

³²⁶ Schaper and Mærli (2007:239)

national affair but an international concern.³²⁷ As a consequence the nuclear security could improve, which would make it easier to manage proliferation “pressure from below.”³²⁸

Further, by relying on nuclear weapons for national security while possessing the world’s most powerful conventional forces, the United States may be constructing an incentive or increasing an existing demand in some NNWSs for seeking nuclear weapons. Acknowledging that possession of nuclear weapons in itself can be a powerful motive for other states to acquire nuclear weapons (see chapter 2), negative security guarantees play an important role in reassuring NNWSs that they do not need to acquire nuclear weapons themselves to deter a nuclear attack by its nuclear adversaries. U.S. nuclear weapons policy erodes these assurances. The 2002 NPR contains a list of states which could become targets for U.S. nuclear weapons (Step 9e). The states which find themselves on the list, may address little value to the negative security assurances given by the United States in connection with the extension of the NPT in 1995. Because several of the states on the list are NNWSs, the NPR also sends a strong signal to other NNWSs that there is no guarantee that NNWSs are immune to U.S. nuclear weapon use.³²⁹ U.S. nuclear policy may thus drive some states towards nuclear acquisition in order to deter a potential U.S. nuclear strike.

Moreover, the United States may serve as an improper role model for the other NWSs. By conveying a policy which does not contribute to the achievement of the Thirteen Steps, the United States provides a potential *excuse* for the other NWSs not to worry about the comprehensive fulfilment of their disarmament obligations. Especially the modernisation of U.S. nuclear weapons and infrastructure sends a signal to the other NWSs that the United States appears to be planning for the indefinite retention of its nuclear arsenal. Renewed interest in the usability of non-strategic nuclear weapons (Step 9c) also sets a negative example which could be followed by other NWSs.

By making efforts that integrate nuclear weapons better into the armed forces some scholars argue that the United States may even “raze the firewall between nuclear and conventional

³²⁷ Schaper and Mærli (2007:240-241)

³²⁸ Schaper and Mærli (2007:241)

³²⁹ Kimball and Kucia (2003)

weapons.”³³⁰ Since the obliteration of Hiroshima and Nagasaki in 1945, the first and only use of nuclear weapons, an international taboo against the use of nuclear weapons has been in existence.³³¹ This taboo is based on a belief that nuclear weapons are fundamentally different than conventional weapons because nuclear weapons cause indiscriminate long-term destruction which conventional weapons cannot produce. The Bush administration, however, proposes a “new mix” of combining nuclear and conventional weapons (see Step 9e). This has led some analysts to the conclusion that the United States thinks of and may use nuclear weapons as it would any other weapon.³³² A breakdown of the firewall between nuclear and conventional weapons may prompt other nuclear weapon states to reconsider whether nuclear weapons can be used alongside conventional weapons, and thus lower the threshold for nuclear weapon use. Russia, for example, expressed alarm about the direction U.S. nuclear weapons policy has taken, and has warned that an attempt to remove any distinction between nuclear and conventional weapons in combat could lead Russia to reconsider its basic policies and expenditures.³³³ Moreover, the U.S. withdrawal from the ABMT (Step 7) combined with U.S. plans to establish a BMD (Step 3 and 4) are interpreted as a potential threat by Russia and China. Thus, U.S. nuclear policy may not only provide Russia and China with an excuse not to disarm, but may constitute an *incentive* for Russia and China to proliferate vertically. If this would happen, “pressure from above” would increase further.

In sum, U.S. nuclear weapons policy is incompatible with a strong and effective NPT. By not disarming, U.S. nuclear policy constitutes pressure on the NPT from above. In the long run, this could cause states to withdraw from the treaty, possibly leading to a new wave of horizontal nuclear proliferation. In the short run, U.S. unwillingness to disarm can make cooperation with NNWSs more difficult. This would make it more difficult to run the NPT effectively and manage specific proliferation challenges. U.S. nuclear weapons policy could also function as an incentive for some NNWSs to acquire nuclear weapons, as well as for the NWSs, especially China and Russia, to proliferate vertically.

³³⁰ Kimball and Kucia (2003)

³³¹ Intriligator (2008)

³³² Intriligator (2008)

³³³ Bunn (2006:272)

In order to mediate these harmful aspects of U.S. nuclear weapons policy, the United States should actively change its nuclear policy. In the next chapter section, some recommendations are thus offered in regard to the final research question of the thesis: “*Should and could the nuclear policy of the United States be changed in order to align with the NPT?*”

5.2. Recommendations

As with any arms control treaty, the contracting states need to see it as more beneficial to be part of the treaty than to stand outside. The security interests of *all* states involved must be recognised.³³⁴ The bargain on which the NPT is based, can be understood as a balance of the security interests of the NWSs and the NNWSs. In order for the NPT to remain viable, disarmament and non-proliferation must go hand in hand, which means that curbs must be imposed on both NWSs and NNWSs. The United States must adhere to its obligation to disarm in order for the NPT to be viable. Hence, U.S. nuclear weapons policy must change track.

The United States should reaffirm its political commitment to reducing the dangers that arise from *all* existing nuclear weapons, as well as from further horizontal and vertical proliferation, and to seeking the achievement of a nuclear weapon-free world. In addition to an official statement of reaffirmation, the United State should back up its support by implementing concrete disarmament measures. Because the Thirteen Steps have been agreed upon by all states parties through consensus, U.S. actions should reflect these steps. At the very least, *some* of the steps should be swiftly implemented. Bring into force the CTBT, for example, would not only signal a change of track, but could spur other states, like China and India, to ratify the treaty as well.

Cutting nuclear weapon numbers is perhaps the easiest and symbolically most eye-catching effort. However, such cuts must be irreversible and internationally verifiable in order to give both states inside and outside the NPT the assurance that the nuclear weapons stay dismantled. In this regard, the United States should negotiate with Russia to extend the START I and to codify the SORT. This could perhaps be done in relation with negotiations on finding a mutually acceptable political solution to the U.S.-planned BMD, which Russia sees a potential threat to its national security.

³³⁴ Schaper and Mærli (2007:249)

Ideally, the United States should publish regular reports on its nuclear stockpile and dismantlement. This would also send out the message that the United States is willing to soften the discriminatory segregation of the NPT, and that it takes the interests of the NNWSs seriously. Whatever steps the United States takes to signal its willingness to live up to its disarmament obligation, U.S. commitment must be unequivocal: it must be clear and beyond any doubt. This means that the United States must refrain from any modernisation and new development of nuclear weapons. Significant progress in the direction of nuclear disarmament should be visible by the time of the next NPT Review Conference in 2010. A constructive idea in this regard, as proposed by Sverre Lodgaard, could be to call a UN summit meeting in the autumn of 2009 at which the link between non-proliferation and nuclear disarmament could be reconfirmed in order to lay the foundations for a successful review conference in 2010.³³⁵

As Christopher Ford points out, the overall security environment plays an important role in making nuclear disarmament possible, and all states parties, both NWSs and NNWSs, have an obligation in ensuring the continuation of nuclear disarmament.³³⁶ However, the linkage between nuclear possession and proliferation goes both ways. Just as NNWSs which seek to acquire nuclear weapons undermine nuclear disarmament efforts, so does the United States run the risk of providing states with an excuse or incentive to proliferate, vertically or horizontally. Removing excuses and reducing proliferation incentives should thus be made a priority in U.S. nuclear weapons policy. Most importantly in this regard, the United States should de-emphasise the importance of nuclear weapons by reducing its dependency on nuclear weapons for national security. In order to reduce the incentives for China and Russia to proliferate vertically, the United States should reconsider the establishment of a BMD, including the militarization of space. A possible BMD must be based on an agreement of all concerned parties in order not to jeopardize the progress achieved thus far in reducing nuclear weapons. Sino-Russian concerns must be resolved. Making legally binding negative security guarantees to NNWSs would moreover offer a strong disincentive for NNWSs to seek nuclear weapons in order to ensure their national security. Respecting existing restraints on both use and threat of military force is also

³³⁵ Lodgaard (2007:317)

³³⁶ Ford (2007)

important in this regard.³³⁷ Moreover, the United States should be careful not to de-evaluate existing IAEA-safeguards by arguing that verification measures are ineffective and unreliable. It should therefore revert to its former position on a verifiable FMCT. Achieving a good standing for serious disarmament efforts would also give the United States more legitimacy in dealing with incidents of treaty violations at the hands of NNWSs.

In sum, the following changes are essential to mediate harmful aspects of U.S. nuclear weapons policy:

- Reinstatement of the main principle underlying the NPT: *all* nuclear weapons are a threat and should be abolished, regardless of their possessors and their intentions
- Reconfirm the validity of the NPT-bargain through words and action(s), for example by ratifying the CTBT
- Reductions must be irreversible and verifiable; negotiate with Russia on extending the START, codifying the SORT and making further reductions
- Refrain from modernising and developing new nuclear weapons
- Deemphasise the role for nuclear weapons in national security policy
- Reconsider the establishment of a BMD; engage Russia and China in order to negotiate a political solution
- Provide legally binding negative security guarantees to the NNWSs
- Revert to former position on a verifiable FMCT

5.3. Looking ahead

What is needed in order to lift the negative impact of U.S. nuclear weapons policy on the NPT is one thing; what can be achieved within the political mindsets of the United States may be quite another.³³⁸ U.S. policy on nuclear weapons at any given time represents a number of competing

³³⁷ The most important treaty when it comes to restraining resort to war is the UN Charter. The UN Charter forbids the use *and* threat of force by states against other states (Chapter I, Article 2, my emphasis), but acknowledges the “inherent right of individual or collective self-defence if armed attack occurs” (Chapter VII, Article 51). More controversially, the Charter also opens up for the possibility that use of force may be the only option to deal with aggressions or threats to peace. After other measures have been tried Chapter VII, Article 42, gives the UN the right to take “actions by air, sea, or land forces necessary to maintain or restore international peace.”

³³⁸ Lodgaard (2007:296)

interests.³³⁹ In order to overcome opposition to change, a personal commitment of the U.S. president is vital.³⁴⁰ The president must have the will and courage to take the lead, as well as the political capacity to push through changes.³⁴¹ The inauguration of Barack Hussein Obama as president of the United States of America on January 20, 2009, thus poses a window of opportunity to bring U.S. nuclear policy into a different track. Looking at Obama's standing on issues related to nuclear weapons can give some indication of the future direction of U.S. nuclear weapons policy, and thus whether a change of track is possible.

Although nuclear weapons provoked little discussion during the presidential election campaign, Obama has promised to reinstate nuclear disarmament as a central goal of U.S. foreign and security policy.³⁴² During the presidential campaign, he pledged to “set a new direction in U.S. nuclear weapons policy and show the world that America believes in its existing commitment under the nuclear Non-Proliferation Treaty to work to ultimately eliminate all nuclear weapons.”³⁴³ Obama opposes the development of new nuclear weapons, wants to negotiate with Russia about taking missiles off high alert, backs talks on extending the START I, is willing to make further nuclear reductions together with Russia, and is open to whether to go ahead with missile defence plans. Obama also pledged to “reach out to the Senate to secure the ratification of the CTBT at the earliest practical date and will then launch a diplomatic effort to bring on board other states whose ratifications are required for the treaty to enter into force.”³⁴⁴

However, Obama has also pledged to “maintain a strong deterrent as long as nuclear weapons exist.”³⁴⁵ This position presents a conundrum for a policy which seeks nuclear disarmament: How can one achieve a world without nuclear weapons when all states with nuclear weapons insist on keeping their nuclear weapons as long as nuclear weapons exist? Someone has to take the lead.³⁴⁶ Despite this shortfall, the nuclear policy Obama has put forward, if it became U.S. policy, would significantly ease U.S. pressure on the NPT. Further clues about the future of U.S. nuclear

³³⁹ Diehl (2008:79)

³⁴⁰ Sauer (2005)

³⁴¹ Sauer (2005)

³⁴² Obama (2008a and 2008b)

³⁴³ Kimball (2008)

³⁴⁴ Kimball (2008), Obama (2008b)

³⁴⁵ Kristensen (2008b)

³⁴⁶ Kristensen (2008b)

weapons policy may be given in the congressionally mandated 2009-2010 Nuclear Posture Review (NPR).³⁴⁷ The 2009-2010 NPR poses a good opportunity for the Obama administration to realign U.S. nuclear weapons policy with the NPT, and thus send a message to the international community that the United States is taking nuclear disarmament seriously.

5.4. Final reflections

This thesis does not claim to take into account all aspects of U.S. nuclear policy which have an impact on the viability of the NPT. The thesis is built on a simplified understanding of the pressure dynamics affecting the strength and efficiency of the treaty, and has focused on the main venue of U.S. impact: nuclear disarmament. With the help of the Thirteen Steps, this thesis has shown that current U.S. nuclear policy is incompatible with a strong and effective NPT. The Thirteen Steps were well suited as a methodological tool to answer the research questions. Addressing both nuclear weapons and the materials required to build them, the Thirteen Steps are observable, and thus measurable, over time. Although some of the steps could have been more clearly formulated, I believe to have succeeded in interpreting them in the context of the final objective of the NPT: a world free from nuclear weapons.

³⁴⁷ Grotto and Cirincione (2008)

References

Advisory Opinion of the International Court of Justice on the Legality of the Threat or Use of Nuclear Weapons (1996)

www.un.org/law/icjsum/9623.htm (accessed February 21, 2008)

Agreement between the Government of the United States of America and the Government of the Russian Federation Concerning the Management and Disposition of Plutonium Designated as no longer required for Defensive Purposes and Related Cooperation (1999)

www.state.gov/documents/organization/18557.pdf (accessed November 17, 2008)

Agreement between the United States of America and the International Atomic Energy Agency for the Applications of Safeguards in the United States of America (1977)

<http://dosfan.lib.uic.edu/treaties/usiaea2.htm> (accessed December 6, 2008)

Amorim, Celso, Gheit, Ahmed Ali Aboul, Cowen, Brian, Bautista, Luis Derbez Bautista, Goff, Phil, Dlimini-Zuma, Nkosazana, and Freivalds, Laila (2004): "Non-proliferation and disarmament go hand in hand." *International Herald Tribune* (September 22, 2004).

www.acronym.org.uk/docs/0409/doc24.htm (accessed February 8, 2008)

Anti-Ballistic Missile Treaty (1972)

www.fas.org/nuke/control/abmt/ (accessed June 5, 2008)

Applegarth, Claire and Tyson, Rhianna (April 2005): *Major Proposals to Strengthen the Nuclear Nonproliferation Treaty – A Resource Guide*.

www.armscontrol.org/pdf/NPTRevConf2005_MajorProposals.pdf (accessed February 4, 2008)

Arms Control Association (2003): *Congress Approves Research on New Nuclear Weapons*

www.armscontrol.org/act/2003_06/newnuclear_june03 (accessed September 8, 2008)

Arms Control Association (2007): *Arms Control and Proliferation Profile: the United States*.

www.armscontrol.org/factsheets/unitedstatesprofile (accessed May 6, 2008)

Atomic Archive (2008): *The Effects of Nuclear Weapons*.

www.atomicarchive.com/Effects/index.shtml (accessed June 6, 2008)

Barash, David P. and Webel, Charles P. (2002): *Peace and Conflict Studies*. London: Sage.

Bennett, Drake (2005): "Give nukes a chance – Can the spread of nuclear weapons make us safer?" In: *The Boston Globe*, 20 March 2005.

Blair, Bruce (2007): *A Rebuttal of the U.S. Statement on Alert Status of U.S. Nuclear Forces*.

www.cdi.org/program/document.cfm?documentid=4135&programID=32&from_page=../friendlyversion/printversion.cfm (accessed November 16, 2008)

Blix, Hans (2008): *Why Nuclear Disarmament Matters*. United States of America: The MIT Press.

Bryman, Alan (2004): *Social Research Methods*. Great Britain: Oxford University Press.

Bunn, George (2003): *The Nuclear Nonproliferation Treaty: History and Current Problems*.

http://armscontrol.org/act/2003_12/Bunn.asp (Accessed February 5, 2008)

Bunn, George (2005): "The World's Non-Proliferation Regime in Time." In: *The IAEA Bulletin* 46/2. March 2005.

Bunn, George (2006): *The nuclear non-proliferation regime and its history*. In: Bunn, George and Chyba, Christopher (ed.) (2006): *US Nuclear Weapons Policy*. Washington: Brookings Institution Press.

- Bunn, George and Chyba, Christopher (ed.) (2006): *US Nuclear Weapons Policy*. Washington: Brookings Institution Press.
- Bunn, George, and Rhinelander, John B. (2008): *Looking Back: The Nuclear Nonproliferation Treaty Then and Now*. www.armscontrol.org/act/2008_07-08/lookingback. (26.07.08, 15:26)
- Bunn, Mathew (2003a): *IAEA Monitoring of Excess Nuclear Material*. www.nti.org/e_research/cnwm/monitoring/trilateral.asp (accessed December 6, 2008)
- Bunn, Matthew (2003b): *U.S.-Rusiand HEU Purchase Agreement* www.nti.org/e_research/cnwm/reducing/heudeal.asp (Accessed May 13, 2008)
- Bush, George W. (2008): *Statement by the President on the Nonproliferation of Nuclear Weapons* (July 1, 2008) www.whitehouse.gov/news/releases/2008/07/20080701.html (accessed November 19, 2008)
- Campbell, Kurt M., Einhorn, Robert J. and Reiss, Mitchell (eds.) (2005): *The Nuclear Tipping Point: Why States Reconsider Their Nuclear Choices*. New Delhi: Manas Publications.
- Carranza, Mario E. (2006): "Can the NPT Survive? The Theory and Practice of US Nuclear Non-Proliferation Policy after September 11." In: *Contemporary Security Policy*, Vol. 27, No. 3 (December 2006), pp. 489-525.
- Cheema, Pervaiz Iqbal (2007): *Nuclear World Order and Nonproliferation II*. In: *Strategic Insights*, Volume VI, Issue 4 (June 2007).
- Chyba, Christopher, Braun, Chaim and Bunn, George (2006a): *New Challenges to the Nonproliferation Regime*. In: Bunn and Chyba (2006).
- Chyba, Christopher, Braun, Chaim, and Bunn, George (2006b): *Strategies for Tackling Proliferation Challenges*. In: Bunn and Chyba (2006).
- Cirincione, Joseph (2007): *Bomb Scare: The Nuclear History and Future of Nuclear Weapons*. United States of America: Columbia University Press.
- Cirincione, Joseph, Wolfsthal, Jon B., Rajkumar, Miriam (2005): *Deadly Arsenals: Nuclear, Biological, and Chemical Threats*. Washington: Carnegie Endowment for International Peace.
- Charter of the United Nations* (1945) www.un.org/aboutun/charter (accessed March 1, 2008)
- Communication Received from Members Regarding the Export of Nuclear Material and Certain Categories of Equipment and Other Material* (1974). IAEA Information Circular (INFCIRC) 209. <http://iaea.org/Publications/Documents/Infcircs/Others/infcirc209.pdf> (accessed March 29, 2008)
- Complex Transformation SPEIS* (2008) www.complextransformationspeis.com (accessed November 27, 2008)
- Comprehensive Nuclear Test Ban Treaty* (1996) www.ctbto.org/treaty_text.pdf (accessed April 6, 2008)
- Comprehensive Test-Ban Treaty Organisation (2008): *Members State's Payments*. www.ctbto.org/member-states/member-states-payments/ (accessed 15 October, 2008)
- Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction*: www.fas.org/nuke/control/bwc/text/bwc.htm (accessed March 23, 2007)

Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and in their Destruction:

www.opcw.org/html/db/cwc/eng/cwc_frameset.html (accessed March 23, 2007)

Daalder, Ivo and Lodal, Jan (2008): *The Logic of Zero – Toward a World Without Nuclear Weapons*. In: From Foreign Affairs, November/December 2008

www.foreignaffairs.org/20081001faessay87606/ivo-daalder-jan-lodal/nuclear-policy-and-the-next-administration.html (accessed November 27, 2008)

Declaration on Principles of International Law concerning Friendly Relations and Cooperation between States (1970)

www.whatconvention.org/en/conv/0703.htm (accessed January 5, 2008)

Defence Authorisation Act for Fiscal Year 2004

www.dod.mil/dodgc/olc/docs/2004NDAA.pdf (accessed June 9, 2007)

Department of Energy (2000): *United States Nuclear Tests: July 1945 through September 1992*

www.nv.doe.gov/library/publications/historical/DOENV_209_REV15.pdf (accessed November 12, 2008)

Department of Energy (September 2004): *Stockpile Stewardship Program Fact Sheet*

www.nv.doe.gov/library/FactSheets/DOENV_1017.pdf (accessed November 15, 2008)

Department of Energy (2005): "DOE to Remove 200 Metric Tons of Highly Enriched Uranium from U.S. Nuclear Weapons Stockpile," press release, November 7, 2005. www.doe.gov/news/2617.htm (accessed September 17, 2008)

Department of Defence (2006): *Deterrence Operations Joint Operating Concept*

www.dtic.mil/futurejointwarfare/concepts/do_joc_v20.doc (accessed October 28, 2008)

Diehl, Sarah J., and Moltz, James Clay (2008): *Nuclear Weapons and Nonproliferation*. United States of America: ABC-CLIO.

Doctrine for Joint Nuclear Operations (March 15, 2005)

www.globalsecurity.org/wmd/library/policy/dod/jp3_12fc2.pdf (accessed July 17, 2008)

Dougherty, James and Pfaltzgraff, Robert (2001): *Contending Theories of International Relations*. New York: Longman.

Drell, Sidney D. and Goodby, James E. (April 2005): *What are nuclear weapons good for? Recommendations for Restructuring U.S. Strategic Nuclear Forces*.

http://www.armscontrol.org/pdf/USNW_2005_Drell-Goodby.pdf (accessed June 26, 2008)

Eriksson, Magnus and Osland, Kari. M. (eds.) (2008): *Nuclear Weapons in the 21st Century: Old Players, New Game – New Players, Old Game*. Conference Proceedings. The Military Power Seminar 2007. NUPI.

Excerpts of Classified Nuclear Posture Review (2002):

Available at <http://GlobalSecurity.org/wmd/library/policy/dod/npr.htm> (accessed May 15, 2008)

Federation of American Scientists (2008): *Nuclear Non-Proliferation Treaty Background*.

www.fas.org/nuke/control/npt/back.htm (accessed January 8, 2008)

Final Act of the Helsinki Conference (1975)

www.hri.org/docs/Helsinki75.html (accessed January 6, 2008)

Final Document of the 1995 NPT Review and Extension Conference (1995)

<http://disarmament.un.org/wmd/npt/1995revconf.html> (accessed April 4, 2004)

- Final Document of the 2000 NPT Review Conference* (2000)
<http://disarmament.un.org/wmd/npt/2000FD.pdf> (accessed March 30, 2008)
- Final Report of the Joint Working Group to the Trilateral Initiative Principals* (2002)
- Ford, Christopher (2007a): *Debating Disarmament: Interpreting Article VI of the Treaty on the Non-Proliferation of Nuclear Weapons*. In: *Nonproliferation Review*, Vol. 14, No. 3, November 2007.
- Ford, Christopher (2007b): *Disarmament, the United States, and the NPT*. Delivered at the Conference on “Preparing for 2010: Getting the Process Right,” Annecy, France, March 17, 2007. www.state.gov/t/isn/rls/other/81946.htm (05.09.2007, 11:26)
- Forland, Astrid (2007): *Preventive war as an alternative to treaty-based nuclear non-proliferation*. In: Mærli and Lodgaard (2007).
- Freedom of Information Act* (1966)
www.usdoj.gov/oip/foiastat.htm (accessed December 8, 2008)
- Galtung, Johan (1996): *Peace by Peaceful Means: Peace, Conflict, Development and Civilization*. London: Sage.
- Goldblat, Jozef (2005): *The right to withdraw from arms control treaties*. In: NUPI (2005): *Policy Briefs on the Implementation of the Treaty on the Non-Proliferation of Nuclear Weapons*. Oslo: NUPI.
- Goldblat, Jozef (2007): *Ban on Nuclear Weapon Proliferation in Light of International Law*. In: Mærli and Lodgaard (2007).
- Goldblat, Jozef and Schaper, Annette (2005): *“Cessation of the Nuclear Arms Race” Envisaged by Article VI of the Non-Proliferation Treaty*. In: NUPI (2005): *Policy Briefs on the Implementation of the Treaty on the Non-Proliferation of Nuclear Weapons*. Oslo: NUPI.
- Gottemoeller, Rose (2008): *What further steps could non-nuclear weapon states take to strengthen the non-proliferation regime?* Remarks, “Achieving the Vision of a World Free of Nuclear Weapons,” seminar on Nuclear Disarmament, Oslo, February 26-27, 2008.
http://disarmament.nropa.no/wp-content/uploads/2008/02/Statement_Gottemoeller.pdf (accessed November 5, 2008)
- Grotto, Andrew and Cirincione, Joseph (2008): *Orienting the 2009 Nuclear Posture Review*.
www.americanprogress.org/issues/2008/11/nuclear_posture_review.html (accessed December 7, 2008)
- Harding, Luke (2007): “Russia threatening new Cold War over missile defence.” In: *The Guardian* (April 11, 2007).
www.guardian.co.uk/world/2007/apr/11/usa.topstories3 (accessed December 6, 2008)
- Harrison, Selig S. (2006): *The forgotten bargain: non-proliferation and disarmament*. In: *World Policy Journal*, Fall 2006.
www.mitpressjournals.org/doi/pdf/10.1162/wopj.2006.23.3.1?cookieSet=1 (accessed May 18, 2008)
- Heinemann-Grüder, Andreas, Hippler, Jochen, Weingardt, Markus, Mutz, Reinhardt, and Bruno, Schoch (eds.) (2008): *Friedensgutachten 2008*. Berlin: LIT Verlag.
- Hirsch, Theodore (2004): “The IAEA Additional Protocol: What It Is and Why It Matters.” In: *The Nonproliferation Review*, Fall/Winter 2004.
<http://cns.miis.edu/npr/pdfs/113hirsch.pdf> (accessed December 6, 2008)
- Holliday, Adrian (2006): *Doing and writing qualitative research*. London: Sage Publications.
- IAEA Information Circular (1972): *The Structure and Content of Agreements between the Agency and States required in connection with the Treaty on the Non-Proliferation of Nuclear Weapons (INFCIRC/153)*
www.iaea.org/Publications/Documents/Infcircs/Others/infcirc153c.pdf (accessed December 6, 2008)

- IAEA Information Circular (1974): *Communication Received from Members Regarding the Export of Nuclear Material and of Certain Categories of Equipment and Other Material* (INFCIR/209)
www.iaea.org/Publicatons/Documents/Infcir/Infcir209.shtml (accessed December 6, 2008)
- IAEA Information Circular (1997): *Model Protocol Additional to the Agreement(s) between State(s) and the International Atomic Energy Agency for the Application of Safeguards* (INFCIRC/540)
www.iaea.org/Publicatons/Documents/Infcir/1997/infirc540c.pdf (accessed December 6, 2008)
- IAEA Staff Report (May 27, 2004): *IAEA Welcomes US New Global Threat Reduction Initiative*.
www.iaea.org/NewsCenter/News/2004/GTRI_Initiative.html (accessed December 2, 2008)
- International Panel on Fissile Materials (2008): *Global Fissile Material Report 2008: Scope and Verification of a Fissile Material (Cutoff) Treaty*
www.ipfmlibrary.org/gfmr08.pdf (accessed November 23, 2008)
- Intriligator, Michael (2008): *A Special Threat: U.S. Nuclear Weapons Policy Under the Bush Doctrine*.
www.proteusfund.org/files/pdfs/Special%20Threat.pdf (accessed June 19, 2008)
- Jane's Information Group (November 17, 2005): *US dumps bunker-buster – or not?*
www.janes.com/defence/news/jid/jid051117_1_n.shtml (accessed October 18, 2008.)
- Johnsen, Rebecca (2003): *Incentives, Obligations and Enforcement: Does the NPT meet its States Parties' Needs?* In: *Disarmament Diplomacy*, issue no. 70, April – May 2003.
www.acronym.org.uk (accessed January 15, 2008)
- Johnsen, Rebecca (2004): “Is the NPT up to the challenge of proliferation?” In: *Disarmament Forum* 4/2004.
- Kile, Shannon, N., Fedchenko, Vitaly and Kristensen, Hans. M. (2008): *Word Nuclear Forces 2008*. In: SIPRI Yearbook 2008.
- Kimball, Daryl (2002): *U.S. Implementation of the 13 Practical Steps on Nonproliferation and Disarmament Agreed to at the 2000 NPT Review Conference*.
<http://armscontrol.org/node/3134> (accessed March 18, 2008)
- Kimball, Daryl (March 2006): *The presidential nuclear initiative (PNI) on tactical nuclear weapons at a glance*.
www.armscontrol.org/factsheets/pniglance (accessed October 20, 2008)
- Kimball, Daryl (2008): *Change Nuclear Weapons Policy? Yes, We Can*.
www.fpif.org/fpiftxt/5700 (accessed December 7, 2008)
- Kimball, Daryl and Kucia, Christine (2003): *New Nuclear Policies, New Weapons, New Dangers*. Available at www.armscontrol.org/factsheets/newnuclearweaponsissuebrief.asp (accessed May 25, 2008)
- Krepon, Michael, and Scheinman Lawrence (2001): *Arms Control Treaties and Confidence-Building Measures as Management Tools*. In: Crocker, Chester, Hampson, Fen Osler, and Aall, Pamela (eds.) (2001): *Turbulent Peace: The Challenges of Managing International Conflict*. Washington D.C.: United States Institute of Peace Press
- Krieger, David (2003): *Why Nations Go Nuclear*.
www.wagingpeace.org/aticles/2005/11/00_krieger-why-nations-go-nuclear.htm (accessed January 10, 2008)
- Krieger, David (2007): *US Leadership for a Nuclear Weapons Free World?* Available at www.wagingpeace.org (accessed July 26, 2008)
- Krieger, David (2008): *Debating Article VI*.
www.wagingpeace.org (accessed July 26, 2008)

- Kristensen, Hans (2006): *Global Strike: A Chronology of the Pentagon's New Offensive Strike Plan*. www.nukestrat.com/pubs/GlobalStrikeReport.pdf (accessed September 15, 2008)
- Kristensen, Hans M. (2007a): *A Rebuttal of the U.S. Statement on Nuclear Weapons Alert, Dismantlements and Reductions*. www.lcnp.org/disarmament/kristensen-rebuttal_oct07.pdf (accessed February 19, 2008)
- Kristensen, Hans M. (2007b): *White House Announces (Secret) Nuclear Weapons Cuts*. www.fas.org/blog/ssp/2007/12/white_house_announces_secret_n.php (accessed September 15, 2008)
- Kristensen, Hans M. (2008a): *The Nuclear Posture of the United States*. In: Eriksson, Magnus, and Osland, Kari. M. (eds.) (2008).
- Kristensen, Hans M. (2008b): *Presidential Candidates Need to See Beyond Warhead Numbers*. www.fas.org/blog/ssp/2008/07/obama.php (accessed December 7, 2008)
- Kydd, Andrew H. (2005): *Trust and Mistrust in International Relations*. United States of America: Princeton University Press.
- Lichterman, Andrew and Cabassa, Jaqueline (2005): *War is Peace, Arms Racing is Disarmament: The Non-Proliferation Treaty and the U.S. Quest for Global Military Dominance*. Western States Legal Foundation. Special Report (May 2005). www.wslfweb.org/docs/warispeace.pdf (accessed May 18, 2008)
- Lodgaard, Sverre (2007): *Regaining common ground*. In: Mærli and Lodgaard (2007).
- Marks, Anne W. (ed.) (1975): *NPT: Paradoxes and Problems*. http://armscontrol.org/projects/npt2005/pdf/NPT_Paradoxes_and_Problems.pdf (accessed February 8, 2008)
- Medalia, Jonathan (December 3, 2007): *Nuclear Warheads: the reliable replacement warhead program and the life extension program*. CRS report for Congress. www.fas.org/sgp/crs/nuke/RL33748.pdf (accessed September 10, 2008)
- Medalia, Jonathan (September 12, 2008): *The Reliable Replacement Warheads Program: Background and Current Development*. CRS report for Congress. www.fas.org/sgp/crs/nuke/RL32929.pdf (accessed September 10, 2008)
- Mello, Greg (2008): *The U.S. nuclear weapons complex: Pushing for a new production capability*. www.thebulletin.org/web-edition/features/the-us-nuclear-weapons-complex-pushing-a-new-production-capability (accessed November 24, 2008)
- Millar, Alistair and Mærli, Morten Bremer (2005): *Nuclear Non-Proliferation and United Nations Security Council Resolution 1540*. In: Norwegian Institute of International Affairs (NUPI) Policy Briefs on the Implementation of the Treaty on the Non-Proliferation of Nuclear Weapons. April 2005.
- Miller, Steven E. (2007): *Proliferation, Disarmament and the Future of the Non-Proliferation Treaty*. In: Mærli and Lodgaard (2007).
- Mærli, Morten Bremer and Lodgaard, Sverre (ed.) (2007): *Nuclear Proliferation and International Security*. UK: Routledge Global Security Studies.
- Mærli, Morten Bremer (2008): *The Nuclear Non-Proliferation Treaty*. In: Eriksson, Magnus, and Osland, Kari. M. (eds.) (2008).
- Mutz, Reinhard and Neuneck, Götz (2008): "Manie der Unverwundbarkeit – Welche Sicherheit bietet die Raketenabwehr?" In: Heinemann-Grüder, Andreas, Hippler, Jochen, Weingardt, Markus, Mutz, Reinhardt, and Bruno, Schoch (eds.) (2008): *Friedensgutachten 2008*. Berlin: LIT Verlag.

Müller, Harald and Schaper, Annette (2004): *US Nuclear Policy after the Cold War*. Peace Research Institute Frankfurt Report No. 69.

National Security Strategy of the United States (2002)
www.whitehouse.gov/nsc/nss/2002/index.html (accessed April 14, 2008)

National Security Strategy of the United States (2006)
www.whitehouse.gov/nsc/nss/2006/ (accessed August 18, 2008)

National Strategy to Combat Weapons of Mass Destructions (December, 2002)
www.acronym.org.uk/docs/0212/doc05.htm (accessed May 20, 2008)

Neuman, William Lawrence (2006): *Social Research Methods: Qualitative and Quantitative Approaches*. United States of America: Pearson.

National Nuclear Security Administration (2006): *Stockpile Stewardship Plan Overview* (November 13, 2006)
http://nnsa.energy.gov/defense_programs/documents/Stockpile_Overview_November_13_2006.pdf (accessed September 5, 2008)

National Nuclear Security Administration (2007): "NNSA releases report on plans for future of the nuclear weapons complex," press release, February 2, 2007. <http://nnsa.energy.gov/news/1140.htm> (accessed September 18, 2008)

National Nuclear Security Administration (2008a): *Life Extension Programs*
http://nnsa.energy.gov/defense_programs/life_extension_programs.htm (accessed November 16, 2008)

National Nuclear Security Administration (2008b): *Plutonium Disposition*
http://nnsa.energy.gov/nuclear_nonproliferation/1979.htm (accessed December 7, 2008)

National Nuclear Security Administration (2008c): *Reliable Replacement Warhead*
http://nnsa.energy.gov/defense_programs/reliable_replacement_warhead.htm (accessed November 21, 2008)

National Nuclear Security Administration (2008d): *Surplus U.S. Highly Enriched Uranium (HEU) Disposition*
http://nnsa.energy.gov/nuclear_nonproliferation/1978.htm (accessed December 7, 2008)

Norris, R., and Kristensen, Hans (2007): "The U.S. Nuclear Stockpile, Today and Tomorrow." In: *Bulletin of the Atomic Scientists*, September/October, 2007

Nuclear Information Project (2005): *Global Strike Command Becomes Operational*.
www.nukestrat.com/us/stratcom/globalstrike.htm (accessed November 20, 2008)

Nuclear Information Project (2006): *Pentagon cancels controversial nuclear doctrine*
www.nukestrat.com/us/jcs/canceled.htm (accessed November 20, 2008)

Nuclear Information Project (2008): *U.S. Nuclear Weapons Guidance*
www.nukestrat.com/us/guidance.htm (accessed November 18, 2008)

Nuclear Threat Initiative (October 20, 2008): *Russia, U.S. Plan START Talks in November*
http://gsn.nti.org/gsn/nw_20081020_6401.php (accessed December 5, 2008)

Obama, Barrack (2008a): *Nuclear policy of Obama*
www.barackobama.com/pdf/Defense_Fact_Sheet_FINAL.pdf (accessed September 10, 2008)

Obama, Barrack (2008b): *Arms Control Today 2008 Presidential Q&A: President-elect Barack Obama*.
www.armscontrol.org/2008election (accessed December 7, 2008)

Ogilvie-White, Tanya (1996): "Is there a theory of nuclear proliferation? An analysis of the contemporary debate." In: *The Nonproliferation Review* (Fall 1996).

Pan, Esther and Bajoria, Jayshree (2008): "The U.S.-India Nuclear Deal." In: *The Washington Post*, September 4, 2008)
www.washingtonpost.com/wp-dyn/content/article/2008/09/04/AR2008090401614.html (accessed December 7, 2008)

Persbo, Andreas (2001): *Good Faith Negotiations in Accordance with Article VI of the Non-Proliferation Treaty*. Thesis in Public International Law. Available from the Faculty of Law at the University of Stockholm.

Persbo, Andreas, and Bjørningstad, Marius (2008): *Verifying Nuclear Disarmament: The Inspector's Agenda*.
www.armscontrol.org/act/2008_05/PersboShea.asp (accessed August 5, 2008)

Pielke, R. (2006): *Normative Science*.
http://sciencepolicy.colorado.edu/prometheus/archives/science_policy_general/000662normative_science.html
(accessed December 8, 2008)

Pineus, Walter: "Pentagon revises nuclear strike plan." In: *Washington Post*. September 11, 2005.

Plassnik, Ursula (September 17, 2007): *Statement by the Federal Minister for European and International Affairs of the Republic of Austria to the 51st Regular Session of the IAEA General Conference 2007*.
www.iaea.org/NewsCenter/Statements/Misc/2007/plassnik17092007.html (accessed November 25, 2008)

Potter, William (2007): *Non-state actors and nuclear proliferation*. In: Mærli and Lodgaard (2007).

Punch, Keith F. (2001): *Introduction to Social Research: Quantitative and Qualitative Approaches*. Great Britain: SAGE Publications.

Quinlan, Michael (2007): *Abolishing Nuclear Armouries: Policy or Pipedream?* In: *Survival*, 49:4, 7-15.

Rauf, Tariq (2001): *Towards NPT 2005: An Action Plan for the 13 Steps Towards Disarmament Agreed at NPT 2000*. Available at www.cns.miis.edu/pub/reports/pafs/npt2005.pdf (accessed August 5, 2008)

Reaching Critical Will (2008): *Preventing an Arms Race in Outer Space: A backgrounder on the militarization and weaponisation of outer space*
www.reachingcriticalwill.org/legal/paros/wgroup/PAROS-factsheet.pdf (accessed November 19, 2008)

Report on the Plan for Transformation of the National Nuclear Security Administration Nuclear Weapons Complex, January 31, 2007.
http://nnsa.energy.gov/news/documents/Trans_of_NNSA_WC_2007-31-01.pdf (accessed November 13, 2008)

Robbins, James S. (2002): *Why the Leak?*
www.nationalreview.com/contributors/robbins031502.shtml (accessed December 8, 2008)

Routio, Pentti (2007): *Normative Study*
www.uiah.fi/projects/metodi/178.htm (accessed December 8, 2008)

Russel, James and Wirtz, James (2002a): *A Quiet Revolution: The New Nuclear Triad*.
www.ccc.nps.navy.mil/si/may02/triad.pdf (accessed June, 5, 2008)

Russel, James and Wirtz, James (2002b): *Negative Security Assurances and the Nuclear Posture Review*.
www.ccc.nps.navy.mil/si/july02/nukes2.asp (accessed May 25, 2008)

Russian-U.S. HEU Agreement (1993)
www.fissilematerials.org/ipfm/site_down/heu93.pdf (accessed November 14, 2008)

- Sagan, Scott and Waltz, Kenneth (2003): *The Spread of Nuclear Weapons – A Debate Renewed*. New York: W. W. Norton & Company.
- Salomon, Gabriel and Nevo, B. (2002): *Peace Education: The Concept, Principles and Practices around the World*. NJ: LEA.
- Sanders, Jackie W. (2005): *Statement to the 2005 Review Conference of the Treaty on the Nonproliferation of Nuclear Weapons*, New York, May 20, 2005
<http://nuclearfiles.org/menu/key-issues/nuclear-weapons/issues/policies/us-nuclear-policy/future-of-nuclear-disarmament.html> (18.08.08, 12:34)
- Santoro, David (2006): *Of the Utility of the Non-Proliferation Regime: The Essential Dialectic between Supply and Demand*. In: Pacific Forum Center for Strategic and International Studies (CSIS) May 2006, Issues and Insights Vol. 6 – No. 7.
www.csis.org/pacfor/issues (accessed March 30, 2008)
- Sauer, Tom (2005): *Nuclear Inertia: U.S. Nuclear Weapons Policy After the Cold War*. Great Britain: I. B. Tauris.
- Shannon, Gerald E. (1995): *Report of Ambassador Gerald E. Shannon of Canada on Consultations on the Most Appropriate Arrangement to Negotiate a Treaty Banning the Production of Fissile Material for Nuclear Weapons or Other Nuclear Explosive Devices*, CD/1299, 24 March 1995
www.reachingcriticalwill.org/political/cd/shannon.html (accessed September 18, 2008)
- Schaper, Annette (2004): *Looking for a demarcation between nuclear transparency and nuclear secrecy*. www.hsfk.de/fileadmin/downloads/PRIF-68.pdf (accessed October 28, 2008)
- Shaper, Annette (2008): *Die Modernisierung von Nuklearwaffen und deren Weiterverbreitung – Zwei Seiten einer Medaille*. In: Heinemann-Grüder, Andreas, Hippler, Jochen, Weingardt, Markus, Mutz, Reinhardt, and Bruno, Schoch (eds.) (2008): *Friedensgutachten 2008*. Berlin: LIT Verlag.
- Shaper, Annette, and Mærli, Morten Bremer (2007): *The Fissile Material Cut-off Treaty as a nuclear security policy driver*. In: Mærli and Lodgaard (2007).
- Sharp, Travis (2007): *The Audacity of Rearmament: Complex 2030*
www.fpif.org/fpifxtx/3995 (accessed November 26, 2008)
- Shea, Thomas E. (2008): *The Trilateral Initiative: A Model for the Future?*
www.armscontrol.org/act/2008_05/PersboShea.asp (accessed May 8, 2008)
- Shell, Jonathan (2007): *The Seventh Decade – The New Shape of Nuclear Danger*. USA: Metropolitan Books.
- Shell, Jonathan (2008): *A Powerful Peace*.
www.yesmagazine.org/article.asp?ID=2693 (accessed July 26, 2008)
- Shultz, George, Perry, William, Kissinger, Henry and Nunn, Sam (2007): “A World Free of Nuclear Weapons.” In: *Wall Street Journal*, January 4, 2007.
www.fcni.org/issues/item.php?item_id=2252&issue_id=54 (accessed November 28, 2008)
- Shultz, George, Perry, William, Kissinger, Henry and Nunn, Sam (2008): “Toward a Nuclear-Free World.” In: *Wall Street Journal*, January 15, 2008.
www.nti.org/c_press/TOWARD_A_NUCLEAR_FREE_WORLD_OPED_011508.pdf (accessed November 28 2008)
- Silverman, David (ed.) (2006a): *Qualitative research: theory, method and practice*. London: Sage Publications.
- Silverman, David (2006b): *Doing Qualitative Research*. London: Sage Publications.

Simpson, John (2004): "The nuclear non-proliferation regime: back to the future?" In: *Disarmament Forum*, 2004 Issue nr. 4. www.unidir.org/pdf/articles/pdf-art2015.pdf (accessed November 2, 2008)

SIPRI Yearbook 2008: Armaments, Disarmament and International Security. Great Britain: Oxford University Press. *Special Briefing on the Nuclear Posture Review* (January 9, 2002): www.defense.gov/transcript/2002/t01092002_t0109npr.html (accessed May 15, 2008)

Speed, Roger and May, Michael (2006): *Assessing the United States' Nuclear Posture*. In: Bunn and Chyba (2006).

Spiegel interview with Mohamed ElBaradei (2007): "We are moving rapidly towards an abyss." www.spiegel.de/international/world/0,1518,503841-3,00.html (accessed December 6, 2008)

Statute of the International Atomic Energy Agency (1957) www.iaea.org/About/statute-text.html (accessed December 6, 2008)

Strategic Deterrent Joint Operation Concept (2005)

Strategic Offensive Reductions Treaty (2002): www.armscontrol.org/documents/sort.asp (accessed June 25, 2008)

The Structure and Content of Agreements between the Agency and States required in connection with the Treaty on the Non-Proliferation of Nuclear Weapons (1972). IAEA Information Circular (INFCIRC) 153. <http://iaea.org/Publications/Documents/Infcirc/Others/infcirc153.pdf> (accessed March 29, 2008)

Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water (Limited Test Ban Treaty) (1963) www.state.gov/t/ac/trt/4797.htm (accessed September 28, 2008)

Treaty Between the United States of America and the Union of Soviet Socialist Republics on the Reduction and Limitation of Strategic Offensive Arms (START I) (1994) www.brad.ac.uk/acad/bdrc/nuclear/armscontrol/STARTI.pdf (accessed November 22, 2008)

Treaty Between the United States of America and the Union of Soviet Socialist Republics on the Reduction and Limitation of Strategic Offensive Arms (START II) www.brad.ac.uk/acad/bdrc/nuclear/armscontrol/STARTII.pdf (accessed November 22, 2008)

Treaty Between the United States of America and the Union of Soviet Socialist Republics on the Elimination of their Intermediate-range and Shorter-range Missiles (1988) www.brad.ac.uk/acad/bdrc/nuclear/armscontrol/INF.pdf (accessed November 22, 2008)

Treaty on the Prevention of the Placement of Weapons in Outer Space, the Threat or Use of Force Against Outer Space Objects. Draft treaty introduced to the Conference on Disarmament by Russia and China, February 12, 2008 www.reachingcriticalwill.org/political/cd/papers08/1session/Feb12%20Draft%20PPWT.pdf (accessed November 17, 2008)

Treaty on the Non-Proliferation of Nuclear Weapons (1969) <http://disarmament.un.org/wmd/npt/npttext.html> (accessed January 14, 2008)

Treaty on the Prohibition of Nuclear Weapons in Latin America and the Caribbean (1967) www.opanal.org/opanal/Tlatelolco/Tlatelolco-i.htm (accessed February 18, 2008)

Treaty on the Prohibition of the Emplacement of Nuclear Weapons and other Weapons of Mass Destruction on the Seabed and the Ocean Floor and in the Subsoil Thereof (1972) www.brad.ac.uk/acad/bdrc/nuclear/armscontrol/seabed.pdf (accessed November 18, 2008)

Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies (1967)
www.brad.ac.uk/acad/bdrc/nuclear/armscontrol/Space.pdf (accessed November 18, 2008)

Turco, Richard P., Toon, Owen B., Ackerman, Thomas P., Pollack James B., and Sagan, Carl (1983): "Nuclear Winter: Global Consequences of Multiple Nuclear Explosions." In: *Science*, (December 1983), Vol. 222.

UN Charter
www.un.org/aboutun/charter/ (accessed March 3, 2007)

UN General Assembly Resolution 1665: Prevention of the wider dissemination of nuclear weapons (1961)
Available at www.un.org/documents/ (accessed March 30, 2008)

UN General Assembly Resolution 2028: Non-Proliferation of Nuclear Weapons (1965)
Available at www.un.org/documents/ (accessed March 30, 2008)

UN General Assembly Resolution 2373 (1968)
Available at www.un.org/documents/ (accessed March 30, 2008)

UN Security Council Resolution 1540 (2004)
<http://daccessdds.un.org/doc/UNDOC/GEN/N04/328/43/PDF/N0432843.pdf?OpenElement> (accessed December 3, 2008)

U.S. Department of State (December 13, 2001): *U.S. Announcement of Withdrawal from the ABM Treaty*
www.state.gov/t/ac/rls/fs/2001/6848.htm (accessed July 13, 2008)

U.S. Department of State (June 3, 2004): *U.S. Plans to Reduce Nuclear Weapons Stockpile Substantially*
www.america.gov/st/washfile-english/2004/June/20040604160216adynned0.1944849.html (accessed October 12, 2008)

U.S. Draft on a Fissile Material Cut-off Treaty (2006)
www.state.gov/t/isn/rls/other/66901.htm (accessed August 4, 2008)

Van Dassen, Lars and Mærli, Morten Bremer (2007): *Defence as the Best Offence? Missile Defences and Nuclear Non-Proliferation*. In: The Norwegian Atlantic Committee, Security Policy Library 4/2007.

Vienna Convention of the Law of Treaties (1969)
www.untreaty.un.org/ilc/texts/instruments/english/conventions/1_1_1969.pdf (accessed April 6, 2008)

Wang, Justine (December 9, 2003): *Congressional Bills Passed Support Bush Agenda for New Nuclear Weapons*.
www.wagingpeace.org/articles/2003/12/09__wang_congressional-bills.htm (accessed September 15, 2008)

Weiss, Leonard (2006): *The Impact of the U.S.-India Deal on the Nonproliferation Regime*.
www.armscontrol.org/events/200602015_Weiss_Prepared_Remarks (accessed December 7, 2008)

White House, Office of the Press Secretary, December 18, 2007: *President Bush Approves Significant Reduction in Nuclear Weapons Stockpile*.
www.whitehouse.gov/news/releases/2007/12/20071218-3.html (accessed October 4, 2008)

WMD Commission (2006): *Weapons of Terror: Freeing the World of Nuclear, Biological and Chemical Arms*. Stockholm: Weapons of Mass Destruction Commission/Swedish Ministry of Foreign Affairs.
www.wmdcommission.org/files/Weapons_of_Terror.pdf (accessed August 5, 2008)

Woolf, Amy F. (2008): *Nonproliferation and Threat Reduction Assistance: U.S. Programs in the Former Soviet Union*. CRS Report for Congress. January 3, 2008. www.fas.org/sgp/crs/nuke/RL31957.pdf (accessed September 23, 2008)

Woolf, Amy F. (2008): *U.S. Nuclear Weapons: Changes in Policy and Force Structure*. Report for Congress. January 23, 2008. www.fas.org/sgp/crs/nuke/RL31623.pdf (accessed July 13, 2008)