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Dropping Nukes: US Policy of Nuclear Disarmament

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DEDICATION

I dedicate this thesis to my father, as he has always believed in me and never doubted my abilities. I also dedicate this thesis to my very supportive husband. Thank you for your patience during this challenging time. Thank you for believing in me.

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I wish to thank Dr. Stephen R. Schwalbe, my thesis professor. I am extremely grateful for his guidance through this challenging process.

ABSTRACT OF THE THESIS

DROPPING NUKES: US POLICY ON NUCLEAR DISARMAMENT

by

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American Public University System, 2013

Charles Town, West Virginia

Professor Stephen Schwalbe, Thesis Advisor

The goal of this research was to investigate whether the United States could successfully disarm its nuclear weapons program. This research examined four prerequisites that the United States (US) would have to fulfill in order to disarm successfully: maintain deterrence, reassure allies and the international community, provide funding for alternative defense sources, and provide support for international nuclear treaties and organizations. The findings indicate that the United States will need to rely on its conventional forces as the alternative to its nuclear program deterrence. It can also reassure its allies and major nuclear states by pursuing high-level dialog on US disarmament. The US must also assist the International Atomic Energy Agency (IAEA) with safeguarding nuclear materials and by adopting the additional protocol. Finally, the US should reallocate nuclear program funds to assist in the modernization of its conventional forces. This paper recommends modernizing conventional forces, refitting nuclear weapons with conventional warheads to utilize delivery systems, and allowing the IAEA to inspect US nuclear facilities.

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GLOSSARY OF TERMS

DoD	Department of Defense
CTBT	Comprehensive Nuclear-Test-Ban Treaty
IAEA	International Atomic Energy Agency
ICBM	Intercontinental Ballistic Missile
MAD	Mutual Assured Destruction
MOP	Massive Ordnance Penetrator
NATO	North Atlantic Treaty Organization
NPR	Nuclear Posture Review
NPT	Non-Proliferation Treaty
SLBM	Submarine-Launched Ballistic Missile

INTRODUCTION

In the current political climate, there is threat of nuclear proliferation and the potential for nuclear weapons to get into the hands of terrorists. The international community has tried a variety of approaches to prevent proliferation, such as non-proliferation treaties, international disarmament treaties, United Nations (UN) sanctions, and diplomatic pressure. However, these approaches have all yielded nearly the same results, which are reducing the number of nuclear weapons but not preventing proliferation in rogue nations and/or the desire for terrorists to gain nuclear weapons. Therefore, as the global superpower, the United States should take this opportunity to lead the world by unilaterally disarming its nuclear weapons system. By taking this step, the US could possibly prevent an unnecessary nuclear arms race, which is on the horizon in the Middle East and Northeast Asia.

About this Research

This paper looks at the world's current nuclear threats, the problems of nuclear proliferation, as well as the steps that the United States could take in order to prevent non-nuclear states from gaining nuclear capability. This paper discusses how the United States would benefit from unilaterally disarming its nuclear weapons programs, and how this first step would further the goal of preventing further nuclear proliferation. This research will also investigate how the United States could save billions of dollars by eliminating the costs required to maintain its nuclear weapons program, which would help to ease some of the financial difficulties currently facing the federal government and the budget under sequestration.

Problem description. In recent years, the world has seen an increase in nuclear proliferation among rogue nation states, such as North Korea and Iran. The concern about proliferation is that nuclear weapons could spread to unstable regimes, increasing the likelihood

that terrorists would be able to gain control of nuclear weapons. This threat is a real concern for the United States, as well as the international community. Since the end of the Cold War, the United States and Russia (the current government, as well as the previous Soviet Union), have entered into numerous nuclear weapons treaties. These treaties were intended to facilitate significant reductions in the number of nuclear weapons possessed by both countries. While these treaties have been successful in reducing the number of nuclear weapons in both countries, they have not played a major role in preventing nuclear proliferation throughout the greater international community. Unless this international issue of nuclear proliferation is addressed, the threat of a terrorist organization gaining access to or control of a nuclear weapon cannot be mitigated.

In order to combat the threat of nuclear proliferation, the US wants to take steps to limit the global availability of nuclear weapons and ensure that hostile or terrorist groups are unable to obtain these weapons. However, the issue of reducing nuclear proliferation comes at a time when the US is facing serious financial concerns, including a large debt and budget limitations, such as the recent sequestration imposed by Congress. As the sequestration cuts government spending, it seems appropriate to address the issue of the United States eliminating its nuclear weapons program for the financial benefits that would follow. Therefore, this paper proposes that the United States unilaterally disarm its nuclear weapons program in order to lead by example and cut costs.

Purpose of the Research. This research takes place while hostile rogue countries and terrorists are trying to gain access to nuclear weapons. It also takes place while the US is facing a huge financial crisis and is currently implementing a budget sequestration. The Obama administration addressed the issue of proliferation and preventing terrorists from obtaining

nuclear weapons in its 2010 *Nuclear Posture Review*. In this review, President Obama outlined his new policy, stating “[that] the United States will not use or threaten to use nuclear weapons against non-nuclear weapons states that are party to the NPT.”¹ His administration also outlined one of its goals of “seek[ing] the peace and security of a world without nuclear weapons.”² The goal of nuclear disarmament has some policymakers concerned; they believe that eliminating the nuclear weapons capabilities would leave the US vulnerable, as it would reduce the perceived strength of our military power and effectiveness of our retaliation force.

Limitations to the Research

One of the limitations to this research is being able to provide accurate financial information regarding the costs of the US nuclear weapons system. The available financial data are only estimates; the reason for this is that our nuclear weapons program is highly classified. Fully disclosing the costs could potentially reveal highly-classified information regarding our nuclear weapons systems, including the number of weapons, facilities, and other capabilities. Therefore, this research can only estimate the potential cost savings of disarmament, as well as the impact it may have on the defense budget.

Another limitation to this research is that while the United States can unilaterally disarm, the effects it will have on the world cannot be known. In disarming its nuclear weapons program, the US would hope to prevent further proliferation and reduce the number of nuclear weapons in the world. However, the effects of unilateral disarmament cannot be fully studied unless the US moves forward with this policy.

¹ U.S. Department of Defense. *Nuclear Posture Review*, (April 2010): viii, <http://www.defense.gov/npr/docs/2010%20Nuclear%20Posture%20Review%20Report.pdf> (accessed March 13, 2013).

² *Ibid.*, iii.

BACKGROUND

To gain a better understanding of how the United States will be able to move forward with unilateral disarmament, this paper will review the international treaties the US has signed stating its intentions of eliminating its nuclear weapons. Additionally, this paper will look at the current global threat of nuclear proliferation and the answer that unilateral disarmament can provide. Finally, it will examine how the Obama administration has changed the US's position on nuclear weapons from the goal of modernization to one of disarmament.

Nuclear Disarmament Treaties

During the Cold War, the United States and Soviet Union began a nuclear arms race that built their nuclear stockpiles to astronomical numbers. The reason for this surge was so that each country would have the capability of mutually assured destruction (MAD). MAD ensured that each country had the capability of full retaliation in kind with nuclear weapons if attacked. At the end of that era, the two countries entered into nuclear weapon reduction treaties in order to significantly reduce their nuclear stockpiles, with the US looking towards the eventual goal of complete disarmament. The non-proliferation treaties between the US and Russia have helped reduce the number of nuclear weapons on alert. However, these treaties have not helped with the global goal of complete nuclear disarmament. Non-proliferation treaties helped guide the US towards the policy of disarmament; however, the international treaties will ultimately provide the structure that the US will need in order to move forward with nuclear disarmament.

In 1968, the Non-Proliferation of Nuclear Weapons Treaty (NPT) was agreed upon by numerous nuclear and non-nuclear states (see Appendix I for list of NPT signatories). This treaty worked towards reducing nuclear proliferation and encouraging nuclear weapons disarmament. However, the treaty allows states “the right to participate in, the fullest possible exchange of

equipment, materials and scientific and technological information for the peaceful uses of nuclear energy.”³ If the countries that have signed this treaty decide to utilize nuclear energy sources, they are required to adhere to the restriction of not producing nuclear weapons with the waste material from their nuclear power plants. This requirement was intended to force non-nuclear states to remain without nuclear weapons. While the non-nuclear states that are a part of this agreement are highly encouraged to remain non-nuclear, nuclear states also have a significant responsibility of preventing nuclear proliferation and pursuing disarmament.

Under Article VI of the NPT, the nuclear states have agreed to “cessation of the nuclear arms race at an early date and to nuclear disarmament ... and complete disarmament under strict and effective international control.”⁴ By signing this treaty, the participating nuclear states have stated their understanding of their commitment to the international community that they are to stop the nuclear arms race that was occurring and should be working towards eliminating nuclear weapons. If the non-nuclear states had to agree to follow the non-proliferation guidelines, then it was declared that the nuclear states should stop increasing the number of their nuclear weapons and eventually completely disarm. This treaty also helped establish and strengthen the alliances and friendly relationships between the nuclear and non-nuclear states; states already in possession of nuclear weapons agreed to provide protection for non-nuclear states against any enemies that would threaten their security.

This relationship was established to deter non-nuclear states from seeking to obtain nuclear weapons in order to defend themselves. The NPT helped to establish stronger relationships among nuclear and non-nuclear states, as well as provide a way towards the goals of nuclear arms control and disarmament.

³ United Nations Office of Disarmament Affairs. Treaty on the non-proliferation of nuclear weapons (NPT), (July 1, 1968), <http://www.un.org/disarmament/WMD/Nuclear/NPTtext.shtml> (accessed March 20, 2013).

⁴ Ibid.

Another treaty that aimed to help refine the conduct of states regarding the use of nuclear weapons was the Comprehensive Nuclear Test-Ban Treaty (CTBT), which was started while President John F. Kennedy was in office. This treaty was established to globally ban all nuclear weapons testing. Most of the countries with nuclear weapons have already ratified this treaty and are currently observing this ban. The US has not been able to successfully ratify this treaty; however, it “has observed a unilateral moratorium on nuclear explosive testing.”⁵ The United States observes this treaty because it no longer views nuclear weapons as the focal point of its national security, and “it does not need to conduct nuclear explosive tests in order to ensure the safety, security and effectiveness of nuclear forces.”⁶ The Obama administration has vowed to work with the Senate to get this treaty approved, but in the meantime, President Obama maintains that the restrictions placed by the treaty will be observed by the US. The impact of this treaty is very significant, because if nuclear states are not able to conduct nuclear weapons testing, then they will be unable to determine the true reliability of their nuclear weapons. While technology exists that can estimate the impact of a nuclear weapon, these estimates cannot be verified unless the weapons are actually tested. However, this does effectively prevent states from engaging in a nuclear arms race; if they are not sure of the impact of a nuclear weapon, then it will be unlikely that the country will spend significant amounts of money to mass-produce an unproven weapon. Finally, as this treaty is being observed or ratified by nuclear states, it allows the international community a means to punish countries that are testing their nuclear weapons against the advice of the other nuclear states; offenders of this treaty will be subject to punishment, such as economic sanctions, from the international community.

⁵ U.S. Department of State. *Comprehensive Nuclear Test-Ban Treaty*. (September 10, 1996), <http://www.state.gov/t/avc/c42328.htm> (accessed April 23, 2013).

⁶ Ibid.

Road to Nuclear Disarmament

After the United States and Soviet Union agreed to nuclear non-proliferation treaties, both countries needed to begin disarming some of their nuclear weapons. As such, the US contracted numerous nuclear facilities to assist with the disassembly of these weapons. One of the largest disassembly plants is Pantex, located in Amarillo, Texas. During the Clinton administration, the Pantex plant was able to reduce the US nuclear stockpile by over 1,000 warheads a year.⁷ However, in recent years, Pantex has only been able to reduce a tenth of the warheads it was able to during the 1990s due to refurbishing old nuclear weapons and the lack of storage for plutonium pits.⁸ Without proper storage, and because it is being tasked with refurbishing these weapons, Pantex is seeing significant delays in reducing the number of nuclear warheads.

Threat of Nuclear Proliferation

Since the end of the Cold War, the United States has significantly reduced its nuclear weapons stockpile by engaging in nuclear disarmament and non-proliferation treaties. While these treaties have been effective in reducing the number of retained nuclear weapons, it has not been able to prevent proliferation among non-nuclear states. After the last atomic bomb was dropped on Japan, nuclear proliferation has increased. Over the next 20 years, the United Kingdom, France, and China developed and tested their own nuclear weapons.⁹ This more than doubled the number of states that had nuclear weapons technology, which has significantly increased the threat of a nuclear proliferation and the risk of a nuclear incident or war. After the five states developed their nuclear weapons programs, other countries began pursuing nuclear

⁷ Jeffery Lewis and Meri Lugo, "Where Nuclear Weapons go to Die", *Foreign Policy*, (April 13, 2009), http://experts.foreignpolicy.com/posts/2009/04/13/where_nuclear_weapons_go_to_die (accessed May 27, 2013).

⁸ Ibid.

⁹ International Atomic Energy Agency. Nuclear Non-Proliferation: Chronology of Key Events, (2009), http://www.iaea.org/Publications/Factsheets/English/npt_chrono.html (accessed April 23, 2013).

weapons in the belief that they needed this technology for their own defense. This belief has led India, Israel, Pakistan, and North Korea to develop their own nuclear weapons programs.

Nuclear proliferation is still occurring, such as in Iran.

Some states have not proliferated nuclear weapons, such as the US allies, because they were assured protection by the umbrella provided by the US. However, some nuclear weapons programs developed because of the perceived threat of a neighbor or a perceived enemy gaining the technology, leaving the non-nuclear state believing it was vulnerable and in need of nuclear weapons for protection. This was clear in Pakistan's production of its nuclear weapons program as, "Pakistan developed its nuclear weapons primarily to deter India's nuclear arsenal."¹⁰ In the case of North Korea and Iran, both countries initially developed peaceful nuclear energy programs, but are now in the process or have already turned this nuclear energy into nuclear weapons. These two countries have violated international disarmament treaties, UN Security Council directives, and have resisted the pressure of the international community to stop production of their nuclear weapons.¹¹ Both North Korea and Iran originally agreed to the NPT treaty, but North Korea later decided to withdraw from it in order to pursue nuclear weapons. These two countries having nuclear weapons pose a security risk to the world. For example, North Korea has recently threatened nuclear war on South Korea and the United States, while Iran has threatened neighboring Israel.

The threat of nuclear proliferation is on the rise with the increased threats from unstable regimes gaining nuclear weapons technology. The fear of unstable regimes gaining control of this capability gives the incentive for non-nuclear states to consider proliferation as the best response. The international community, especially the United States, is addressing this issue by

¹⁰ Ivo Daalder and Jan Lodal, "The Logic of Zero: Toward a World Without Nuclear Weapons", *Foreign Affairs* 87, no.8, (November/December 2008), www.foreignaffairs.com/print/64608 (accessed March 23, 2013).

¹¹ U.S. Department of Defense. *Nuclear Posture Review*, (2010), 3.

responding with increased economic sanctions and diplomatic means. However, this response has not prevented states from developing nuclear weapons programs in the past, and is unlikely to prevent them in the future. Therefore, the United States has identified this as an issue and has outlined a different approach to preventing proliferation in the future by changing its response to nuclear weapons.

The Obama Administration's Policy Goals

In the 2010 *Nuclear Posture Review*, the Obama administration identifies its main policy goals as preventing further nuclear proliferation, reducing the role of nuclear weapons in its national security strategy, and work towards eliminating the United States' nuclear weapons arsenal.¹² The goal to prevent nuclear proliferation is to prevent unstable regimes from terrorizing the different regions of the world. If unstable regimes are allowed to acquire or keep nuclear weapons, they are allowed the ability to use these weapons against non-nuclear states as a form of intimidation, forcing the neighbors of these regimes to submit to the requests and demands of the nuclear state. It also allows these regimes the ability to use nuclear weapons as a first response.

The Obama administration has changed its policy from the previous administration's policy of modernizing nuclear weapons and utilizing them as a part its national security strategy, to one where: "the United States will not use or threaten to use nuclear weapons against non-nuclear weapons states that are party to the NPT and in compliance with their nuclear non-proliferation obligations."¹³ In establishing policies that do not allow the use of nuclear weapons against complying non-nuclear states, the United States is encouraging the option of settling disputes through diplomatic means, or in the case of an attack, by using conventional forces

¹² U.S. Department of Defense. *Nuclear Posture Review*, (2010), iii.

¹³ *Ibid.*, viii.

rather than a nuclear response. This policy reduces the US reliance upon nuclear weapons for deterrence and compels the administration to change the focus of its national security strategy to strictly conventional weapons rather than conventional and nuclear forces.

Another of the stated goals of the Obama administration is to work towards a world without nuclear weapons. As President Obama addressed in the 2010 *Nuclear Posture Review*, the steps the US should take to help get the world towards “global zero” are to prevent proliferation, provide greater transparency into nuclear weapon capabilities, ensure better verification of nuclear weapons programs to confirm that states are not violating agreements, and enforce strong measures to prevent violations.¹⁴ He has outlined a plan that will help all nuclear countries reduce their nuclear weapon programs; there must be strict verification procedures in place to provide evidence to the world that nuclear programs are being disarmed. There also must be strict enforcement to discourage “cheaters” from proliferating nuclear weapons when they have already agreed to these restrictions. There must be a sense of trust in the international community that nuclear states such as the United States are moving forward with their decision to disarm with the full cooperation of international organizations. President Obama is moving towards the idea of unilateral disarmament of the United States, as it is the one way the US can fulfill its commitment to creating a world without nuclear weapons.

Nuclear Weapons’ Impact on the Budget

The United States is currently facing a debt crisis, as Congress in 2011 passed a law that tried to force both the Democrats and Republicans to come to a consensus on the 2012 budget or face automatic spending cuts of roughly \$1 trillion over ten years.¹⁵ Since Congress did not pass the 2013 budget, automatic-spending cuts took place on March 1, 2013, which forced the federal

¹⁴ U.S. Department of Defense. *Nuclear Posture Review*, (2010), xv.

¹⁵ The White House. *The Sequester*, (2013), <http://www.whitehouse.gov/issues/sequester> (accessed May 28, 2013).

government into sequestration, significantly reducing federal programs such as defense. Former Secretary of Defense, Leon Panetta, estimated that “the reduction in defense spending under maximum sequestration would amount to 23 percent.”¹⁶ A reduction of this magnitude could severely cripple the US military. Therefore, DoD is trying to figure out ways to cut the defense budget without cutting back on the critical defense programs.

¹⁶ Leon Panetta, *Letter to John McCain, Armed Forces Committee*, (November 14, 2011), http://armedservices.house.gov/index.cfm/files/serve?File_id=ae72f319-e34f-4f78-8c88-b8e7c9dee61f (accessed May, 13, 2013).

LITERATURE REVIEW

In order to understand the context of nuclear disarmament, this research will begin by examining the literature regarding the state of nuclear weapons and the relevant arms control treaties, beginning in the 1960s and through to the present time. Beginning in the 1960s, with the US agreeing to NPT and observing the CTBT, it attempted to focus the US towards a policy of disarmament and non-proliferation. However, the Obama administration has made it clear that it is working towards a goal of complete disarmament, and will do so by reducing the role of nuclear weapons and placing greater emphasis on conventional forces. Examining this new role for the United States requires looking at three areas: reducing the role of nuclear weapons in the US, taking steps towards nuclear disarmament, and relying on only conventional forces as an alternative.

Reducing the Role of Nuclear Weapons

The Obama administration outlined its goal of reducing the role of nuclear weapons in his 2010 *Nuclear Posture Review*. Perkovich (2008) suggests that the high value placed on nuclear weapons has had a negative impact, as it has made nations reluctant to help prevent nuclear proliferation.¹⁷ Walker (2009) agrees that the prestige of possessing nuclear weapons is still heavily prized, and this is keeping states from reducing their nuclear arms.¹⁸ This prestige becomes a part of the nation's identity and allegedly gives them a bigger voice in the international community. Walker (2009) suggests that an effort should be made to change the way nuclear weapons are perceived; the way this can be accomplished is by persuading these

¹⁷ George Perkovich, "Abolishing nuclear weapons: Why the United States should lead," Washington, DC: Carnegie Endowment for International Peace, (October 2008): 4, <http://carnegieendowment.org/2008/10/21/abolishing-nuclear-weapons-why-united-states-should-lead/25em> (accessed March 11, 2013).

¹⁸ William Walker, "President-elect Obama and Nuclear Disarmament Between Elimination and Restraint," *Institut Francias des Relations Internationales*, (Winter 2009): 20, www.ifri.org/downloads/Walker_Obama_nuclear_disarmament.pdf (accessed March 20, 2013).

countries that there are “better ways of affirming their political stature.”¹⁹ This will assist these countries in moving towards nuclear weapons reduction and disarmament. He also discusses nuclear deterrence as a motivation to keep nuclear weapons.²⁰ The current political climate asserts that, if a country possesses nuclear weapons, it will deter other nuclear states from attack. Walker (2009) suggests that a shift in forces, such as moving away from nuclear weapons programs, will help eliminate the concern of being attacked by a nuclear state.²¹ Harrison (2006) suggests that if the “United States is no longer using them to assert global dominance” then the international community will also move away from using nuclear weapons for deterrence.²² While the US will still maintain its global military power and presence, Perkovich and Acton (2009) suggest that the US will reassure the international community that it will maintain its position of abiding by international law.²³

Steps to Nuclear Disarmament

The literature suggests numerous steps that the US can take toward nuclear disarmament. One of these is the Senate ratification of the Comprehensive Nuclear Test Ban Treaty (CTBT). While the US is currently observing this treaty, Albright et al. (2010) believe that actual ratification could show additional commitment of the United States towards nuclear disarmament and against weapons proliferation.²⁴ Albright et al. (2010) suggest ratifying this treaty and advancing it further by “declaring that it is their policy to discontinue nuclear trade with any

¹⁹ Walker, (2009), 20.

²⁰ Ibid., 19.

²¹ Ibid.

²² Selig S. Harrison, “The Forgotten Bargain Nonproliferation and Nuclear Disarmament,” *World Policy Journal* 23, no. 3, (2006): 3. *Business Source Elite*, EBSCO host (accessed March 18, 2013).

²³ George Perkovich and James M. Acton, “Abolishing nuclear weapons: A debate,” Washington, DC: Carnegie Endowment for International Peace, (2009): 30, http://www.carnegieendowment.org/files/abolishing_nuclear_weapons_debate.pdf (accessed March 11, 2013).

²⁴ Madeline Albright, Strobe Talbott, Igor Ivanov, and Aleksander Dynkin, “Next Steps on U.S.-Russian Nuclear Negotiations and Nuclear Non-Proliferation,” Washington DC: Brookings Institution, (June 23, 2010), <http://www.brookings.edu/research/papers/2010/10/nonproliferation-albright-talbott> (accessed March 6, 2013).

country that conducts a nuclear test.”²⁵ While the US would be unable to physically conduct these tests on its nuclear weapons, it would retain the ability to use computerized simulations to estimate the cause and effects of the nuclear materials.

Another suggested step toward nuclear disarmament is improving the role of the International Atomic Energy Agency (IAEA). Burt and Lodal (2011) note that the IAEA currently serves the international community by monitoring and verifying nuclear materials and activities on behalf of the NPT.²⁶ This organization has played a large role in nuclear disarmament and detecting proliferation. However, it has been limited by the authority and financial resources provided by its international supporters. To improve the IAEA, Albright et al. (2010) suggest all NPT signatories agree to the Additional Protocol.²⁷ This protocol, as noted by Burt and Lodal (2011), would give the IAEA the authority to conduct more thorough inspections of all nuclear facilities, both declared and undeclared.²⁸ These IAEA inspections would require all signatory nuclear states to become more transparent with their nuclear weapons programs, and would help to encourage countries that are lacking transparency, to do the same.

Another suggested step towards nuclear disarmament is to provide greater transparency and verification of the reduction in nuclear weapons. Kissinger et al. (2013) have suggested the US launch a “verification initiative that [involve] the U.S. nuclear weapons laboratories and global scientific experts in developing essential technologies and innovations for reducing and controlling nuclear weapons and materials.”²⁹ This initiative would assist the US in becoming

²⁵ Albright et al., (2010).

²⁶ Richard Burt and Jan Lodal, “The Next Step for Arms Control: A Nuclear Control Regime,” *Survival: Global Politics and Strategy* 53, no. 6, (2011): 56.

²⁷ Albright et al., (2007).

²⁸ Burt and Lodal, (2011), 57.

²⁹ Henry A. Kissinger, Sam Nunn, William Perry, and George P. Shultz, “Next steps in reducing nuclear risks: The pace of nonproliferation work today doesn’t match the urgency of the threat,” *Wall Street Journal*, (March 5, 2013), <http://online.wsj.com/article/SB10001424127887324338604578325912939001772.html> (accessed April 7, 2013).

more transparent in its nuclear weapons program and would also help facilitate a verification system, which would help to build trusting relationships between the US and international community. However, Glaser (2012), an opponent of this initiative, believes that revealing too much information could be dangerous, such as “isotopic or other properties of their weapons plutonium and Highly Enriched Uranium (HEU); these isotopic signatures would reveal insight into their production strategies.”³⁰ This would effectively be releasing the US’s classified nuclear weapons production information to other countries. This vulnerability would allow other countries the ability to produce weapons similar to those of the US and potentially use this technology against the US.

Finally, another step towards nuclear disarmament is to prevent the spread of nuclear weapons materials to non-nuclear states. As suggested by Shultz et al. (2007), the way to prevent the spread of nuclear materials is to halt the production of enriched uranium and by phasing it out in civil commerce.³¹ Eliminating the use of enriched uranium would prevent non-nuclear states with nuclear energy from having the capability of creating a nuclear weapon. Perkovich and Acton (2009) also suggest another method to prevent non-nuclear states from acquiring weapons: forcing stricter standards on the nuclear states. These standards would consist of “requiring [nuclear states] to submit detailed ‘baseline’ declarations specifying the location, type, and possibly the history of each warhead.”³² Additionally, they suggest allowing inspectors to be able to “count the total number of warheads present at each declared site to ensure that none had been omitted from the declaration.”³³ This would allow for better accounting of nuclear materials

³⁰ Alexander Glaser, “Facilitating Nuclear Disarmament: Verified Declarations of Fissile Material Stocks and Production,” *The Nonproliferation Review* 19, no.1, (2012): 123.

³¹ George Shultz, William J. Perry, Henry Kissinger, and Sam Nunn, “A World Free of Nuclear Weapons,” *Wall Street Journal*, (January 4, 2007), www.hoover.org/publications/hoover-digest/article/6109 (accessed March 23, 2013).

³² Perkovich and Acton, (2009), 55.

³³ Ibid.

and prevent nuclear states from providing this capability to non-nuclear states without the knowledge of the international community.

United States Conventional Forces as an Alternative

For the United States to work towards disarming its nuclear weapons program, it will need to have an alternative method of deterrence and protection from attacks on itself and its allies. Kissinger et al. (2013), Albright et al. (2010), and Daadler and Lodal (2008) have suggested that the US look towards its conventional forces as an alternative. As these scholars have noted, the United States conventional forces are much greater than those of any other country, as the conventional forces of other nations are many years behind the United States.³⁴ With the United States having the most powerful conventional force in the world, it does not have to rely strictly on nuclear weapons to deter or combat threats. As Stanford Affiliate Podvig (2011) suggests, the United States' conventional forces have "the accuracy of non-nuclear strike systems ... [which] could allow the United States to use its conventional forces to augment or even replace nuclear systems in mission."³⁵ If the US focuses only on its nuclear weapon systems as a means of protection, Sharad (2006) suggests that it could be ignoring other alternatives that could achieve the same objectives, such as "destroying deep bunkers or chemical/biological storage facilities."³⁶ Therefore, by maintaining a modernized conventional force, Podvig (2011) suggests that the US could explore warfare options that are not "subject to arms control limits" and test weapons that could be used immediately.³⁷ Without having a cap on

³⁴ Daadler and Lodal, (2008).

³⁵ Pavel Podvig, "Instrumental Influences: Russia and the 2010 Nuclear Posture Review," *Nonproliferation Review* 18, no.1, (2011): 45.

³⁶ Sharad Joshi, "Unilateralism and Multilateralism: Analyzing American Nuclear Nonproliferation Policy," *World Affairs* 167, no.4, (2005): 151.

³⁷ Podvig, (2011), 46.

the number of conventional weapons the US can possess, it increases its ability to address numerous threats simultaneously.

The idea of the US relying on conventional forces instead of nuclear weapons has numerous countries concerned. As suggested by Perkovich and Acton (2009), US conventional forces may prove to be a better alternative than nuclear weapons; countries such as China are worried that US conventional forces could attack China's military forces before it had a chance to respond, leaving China extremely vulnerable.³⁸ US conventional forces are also a major concern for Russia, and Panofsky (2007) states that Russia sees that "the United States, now the world's unchallenged conventional military power, can address almost all of its military objectives by nonnuclear means."³⁹ This is a concern for Russia, as Podvig suggests,

The growth in capability of the US conventional strike force ... has Russia watching with significant concern. Many Russian analysts believe that improvements to the accuracy of non-nuclear strike systems and the supporting reconnaissance, communication, and command and control infrastructure could allow the United States to use its conventional forces to augment or even replace nuclear systems.⁴⁰

The US is aware that its conventional forces are unmatched by any other country, which could help the US move away from its nuclear weapons program and toward its conventional forces.

While US conventional forces could be the alternative to its nuclear weapons program, the subject of the US being able to continue to provide protection for its allies becomes an issue. Before the United States could look at conventional forces as an alternative, it would need to consult its allies. Perkovich (2008) suggests that the US should include its allies in disarmament talks, as it would strengthen the ties between the US and its allies and could help bolster the US

³⁸ Perkovich and Acton, (2009), 32.

³⁹ Wolfgang K.H. Panofsky, "Nuclear Insecurity". *Foreign Affairs* 86, no 5, (2007): 109-114. www.foreignaffairs.com/print/62832 (accessed March 23, 2013).

⁴⁰ Podvig, (2011), 45.

position in disarming.⁴¹ He also suggests that including allies in talks of disarming would help to prevent proliferation among them, as a plan for protection would still be provided by the US.⁴² However, proponents such as Swango (2008) and Walker (2009) believe US nuclear weapons are the one thing that is holding back an even larger increase in proliferation among its allies and rogue nations.⁴³ They also believe that if the US gets rid of its nuclear weapons, its allies would consider nuclear proliferation to help provide deterrence. Drell and Goodby (2005) suggest that the US nuclear umbrella has prevented allied states from building up their arms and will only continue to do so if the US maintains its nuclear weapons capabilities.⁴⁴ However, as suggested by Perkovich (2009), if US allies are included in the discussions of disarmament, proliferation among allies could be deterred.⁴⁵

Reducing the Defense Budget

The United States is currently in a fiscal crisis and needs to reassess which programs are necessary and which to reduce or eliminate. In order to help provide answers for these budget issues, the Arms Control Association (2013) conducted an assessment on the current US nuclear weapons program. The results suggest that the US would be able to cut back its nuclear weapons budget significantly by reducing the number of its nuclear weapons, estimating that the defense budget could be reduced by \$50 billion over the course of 10 years.⁴⁶ Schwartz and Choubey (2009) suggest that not only can the US reduce the defense budget, but it can also reduce the budgets of seven other executive branch departments that help represent the overall cost of US

⁴¹ Perkovich, (2008), 3.

⁴² Ibid., 3.

⁴³ Dane Swango, "US Nuclear Weapons and Proliferation by US Allies," Center for Strategic & International Studies, (2008): 129, http://csis.org/images/stories/poni/110921_Swango.pdf (accessed March 18, 2013).

⁴⁴ Sidney D. Drell and James E. Goodby, "What are Nuclear Weapons for?," (April 2005): 11, http://www.armscontrol.org/pdf/USNW_2005_Drell-Goodby.pdf (accessed April 4, 2013).

⁴⁵ Perkovich, (2009).

⁴⁶ Arms Control Association, "Options for Reducing U.S. Nuclear Weapons Spending, 2013-2022," (March 18, 2013), www.armscontrol.org/files/FactSheet_Nukes_03_2013.pdf (accessed March 20, 2013).

nuclear weapons and materials.⁴⁷ If the current strategy of nuclear weapons is not changed, Schwartz et al. (2009) expect that the nuclear budget will increase significantly, as there are proposals to “rebuild the nuclear weapons production complex.”⁴⁸ Doyle (2013) suggests that in the current fiscal crisis and with the “benefits of nuclear weapons uncertain, this level of expenditure is unjustifiable.”⁴⁹ However, there are opponents to the argument that the US nuclear weapons program is contributing to the budget crisis. Bendikova and Spring (2013) emphasize that conventional forces are contributing more to the fiscal crisis than nuclear weapons, refuting the claim that the US nuclear weapons program has a significant impact on the DoD budget and is contributing to the current fiscal crisis.⁵⁰

⁴⁷ Stephen I. Schwartz and Deepti Choubey, “Nuclear Security Spending: Assessing Costs, Examining Priorities,” Washington DC: Carnegie Endowment For International Peace, (2009): 8, http://carnegieendowment.org/files/nuclear_security_spending.pdf (accessed May 12, 2013).

⁴⁸ Schwartz and Choubey, (2009), 8.

⁴⁹ James E. Doyle, “Why Eliminate Nuclear Weapons?,” *Survival: Global Politics and Strategy* 55, no. 1, (2013): 22, <http://dx.doi.org/10.1080/00396338.2013.767402> (accessed March 18, 2013).

⁵⁰ Michaela Bendikova and Baker Spring, “Bait and Switch on Nuclear Modernization Must Stop,” Washington DC: The Heritage Foundation (January 4, 2013): 3, <http://www.heritage.org/research/reports/2013/01/bait-and-switch-on-nuclear-modernization-must-stop> (accessed March 6, 2013).

ANALYSIS

This research revealed four prerequisites that the US would have to address in order to successfully eliminate its nuclear weapons program. First, the US would have to maintain deterrence by having alternative means of defense. Second, it would have to reassure its allies and the international community of its policies after it disarms its nuclear weapons. Third, there are international treaties and organizations that need the backing of the US to allow disarmament to be a possibility. Finally, the US would need to consider the effects of disarmament on the budget required to maintain the same level of deterrence.

Maintaining Deterrence

In order for the United States to disarm its nuclear weapons program, an important issue to address is its ability to maintain deterrence. In reviewing the literature and data, the most obvious and viable alternative to the US's nuclear program is its conventional forces. In the 2010 *Nuclear Posture Review*, President Obama outlined one of his key objectives: strengthening the US conventional forces and expanding its capabilities so it can effectively deter attacks on itself and its allies.⁵¹ This is a significant shift in policy, as the focus will be on conventional forces to deter attacks, rather than relying, as in the past, upon the threat of its nuclear weapons. While some critics do not believe conventional forces can adequately deter a nuclear attack, US conventional forces play a large defensive role and are extremely capable. This research found many reasons and strong supporting evidence for reliance upon conventional forces to deter attack.

Looking at current military capabilities, evidence indicates that no other country can compare to the United States. For example, while Russia has a very large military force, it is still

⁵¹ U.S. Department of Defense. *Nuclear Posture Review*, (2010), ix.

years behind the technological capability of US conventional forces.⁵² Currently, Russia maintains only one aircraft carrier and has only a little over a million military personnel.⁵³ The Russian military also does not deploy military forces beyond its border such as the US, and its military consists of both voluntary and involuntary personnel.⁵⁴ While China's conventional force has "2,285,500 military personnel", it lacks sea and air power in comparison to the US⁵⁵. China is currently building its first aircraft carrier and maintains 6 submarines, compared to the 11 carriers and 57 submarines operated by the US.⁵⁶ The current strength of US conventional forces would allow it to maintain deterrence in the future as it does in the present.

Currently, US nuclear weapon delivery platforms have the ability to hit targets with great precision. However, US conventional weapons can achieve the similar objectives of bunker busting and precision targeting of enemy facilities.⁵⁷ An example of this is the US Air Force's Massive Ordnance Penetrator (MOP), which was "designed to go deeper than any existing nuclear bunker-busting weapon."⁵⁸ Modernization of conventional forces has also allowed the US to target and strike enemies with minimal to zero detection. With today's technology and US military capability, Mueller (2010) states that it is rare "to find a target that cannot be struck just as well by conventional weapons."⁵⁹ While the US still maintains its nuclear weapons program,

⁵² Daalder and Lodal, (2008).

⁵³ Amanda Chan and Owen Wang, "Infographic: China's Military," University of Southern California, (November 22, 2011), http://www.uschina.usc.edu/w_usci/showarticle.aspx?articleID=17718&AspxAutoDetectCookieSupport=1 (accessed May 11, 2013).

⁵⁴ U.S. Central Intelligence Agency. The World Factbook: Russia. (May 7, 2013), <https://www.cia.gov/library/publications/the-world-factbook/geos/rs.html> (accessed June 4, 2013).

⁵⁵ Chan and Wang, (2011).

⁵⁶ U.S. Central Intelligence Agency, (2013).

⁵⁷ Joshi, (2005), 151.

⁵⁸ John Keller, "Air Force ready to deploy 30,000-pound 'super bomb' on stealthy B-2 jet bomber," *Military & Aerospace Electronics*, (January 18, 2007), <http://www.militaryaerospace.com/articles/2007/01/air-force-ready-to-deploy-30000-pound-super-bomb-on-stealthy-b-2-jet-bomber.html> (accessed June 4, 2013).

⁵⁹ John Mueller, "Think Again: Nuclear Weapons," *Foreign Policy* 89, no.1, (2010), http://www.foreignpolicy.com/articles/2010/01/04/think_again_nuclear_weapons (accessed March 6, 2013).

without modernization or the willingness to test those weapons, these nuclear forces cannot have the same reliability as conventional forces.

Other countries have taken notice of the US's ever-growing conventional force strength. As noted by Perkovich and Acton (2009), while China has a very large military, it "fear[s] that a conventional [US] attack on China's strategic missile forces could render China vulnerable and leave it without a deterrent."⁶⁰ However, the US is economically tied to China, as it holds more than "\$1.2 trillion dollars in US reserve assets."⁶¹ While the US has the capability to attack China, it would not be in its best interest. As for the Russian, they share the same concern as the Chinese, that an attack by US conventional forces could leave them vulnerable. Since China and Russia are both concerned about US conventional forces and capabilities, it would seem that this alternative to our nuclear weapons system would be very effective. With even major world powers fearing the US, countries with smaller and less powerful forces would also see US conventional forces as an effective deterrent.

However, not everyone agrees that the US should rely only on its conventional forces. Foster and Payne (2009) oppose the concept of relying on conventional forces because,

Strategic nuclear weapons can threaten an adversary's valued targets from afar, and are likely to remain, essential for holding particularly well-protected targets at risk for deterrence. These targets, for practical purposes, [are] invulnerable to non-nuclear threats and are likely to remain in the foreseeable future.⁶²

However, the US has changed this vulnerability in conventional forces by creating the MOP, which has the ability to deliver a "30,000-pound bunker buster with 5,300 pounds of high

⁶⁰ Perkovich and Acton, (2009), 32.

⁶¹ Kenneth Rogoff, "Foreign Holdings of U.S. Debt: Is Our Economy Vulnerable?" Washington DC: The Brookings Institution, (June 26, 2007), <http://www.brookings.edu/research/testimony/2007/06/26budgetdeficit-rogoff> (accessed May 31, 2013).

⁶² John S. Foster and Keith B Payne, "What are nuclear weapons for?," *The American Physical Society* 36, no. 4, (October 2007), <http://www.aps.org/units/fps/newsletters/2007/october/foster-payne.html> (accessed June 1, 2013).

explosives to a target.”⁶³ MOP can achieve the goal of bunker busting and could easily replace a nuclear warhead. While some of the nuclear platforms are only fitted for nuclear warheads, this capability could change if the US refits them with conventional warheads and utilizes them for conventional use. This would give the US the capability to hit valued targets from afar because it would utilize the same delivery method as nuclear warheads. Gerson believes that substituting conventional for nuclear weapons is crucial to “developing a credible and robust twenty-first century deterrent.”⁶⁴ Refitting nuclear missiles with conventional warheads would also prove beneficial to the US, as conventional forces are not “subject to arms control limits”, and would allow the US to have increased methods of delivery and deterrence, and allow them the ability to attract more supporters.⁶⁵

In order to attract support for US conventional forces, the US would have to detail the weapon delivery systems it plans to use, which should be intercontinental ballistic missiles (ICBMs) and submarine-launched ballistic missiles (SLBMs) and heavy bombers (which already have conventional weapons capability). Currently, the US has 557 ICBM launchers, 336 SLBM launchers, and 141 heavy bombers.⁶⁶ The US could utilize those delivery systems with conventional warheads, which would give the US a strategic advantage. This would allow the US the capability of a conventional force that has ICBM missiles that can be launched within 20 minutes with an accuracy of roughly 650 feet.⁶⁷ It would also allow the US the ability to attack

⁶³ Keller, (2007).

⁶⁴ Michael S. Gerson, “Conventional deterrence in the second nuclear age,” *Parameters* 39, no.3 (October 2009), <http://strategicstudiesinstitute.army.mil/pubs/parameters/Articles/09autumn/gerson.pdf> (accessed June 4, 2013).

⁶⁵ Podvig, (2011), 46

⁶⁶ U.S. Congressional Research Service. 2013. The New START treaty: Central limits and key provisions (R41219; Feb. 20, 2013), Ed. Amy F. Woolf. www.fas.org/sgp/crs/nuke/R41219.pdf (accessed March 11, 2013).

⁶⁷ National Museum of the US Air Force. “Boeing LGM-30G Minuteman III,” (September 28, 2009), <http://www.nationalmuseum.af.mil/factsheets/factsheet.asp?id=540> (accessed June 3, 2013).

from its submarines with SLBMs that can launch within 10 minutes, with an accuracy of 300-390 feet.⁶⁸

In order to determine the costs of refitting ICBMs and SLBMs with conventional warheads, the Bush administration attempted to get Congress to provide the funds for research and development. The president was looking to provide the US “with the ability to attack fixed, hard and deeply buried, mobile and re-locatable targets with improved accuracy anywhere in the world.”⁶⁹ While Congress did not initially support researching this idea, over time they have decided to allocate funding and investigate it further. However, the actual costs involved with refitting these nuclear missiles remains classified.

If the US disarms its nuclear weapons, it will make these weapons seem more appealing to other nations as a means of deterrent. The strength and size of US conventional forces is very intimidating to other countries; disarming could give non-nuclear states the perception that they could challenge the US if they had nuclear weapons. Perkovich and Acton (2009) argue that “US conventional power-projection capability and the concern that it may be used to intimidate, attack, or overthrow regimes’ elevates interest in nuclear weapons as equalizers and deterrents of US conventional power.”⁷⁰ While this is a concern of the international community, the US would “reassure other nations that it abides by international law as understood by other major powers in determining whether, when and how to use military force.”⁷¹ With the US utilizing a conventional means of defense, it does not mean it will lose its sense of international law and its authority. The US would still need to maintain its alliances and working relationships with other

⁶⁸ Federation of American Scientists. “Trident II D-5 Fleet Ballistic Missile,” (May 1, 1998), <http://www.fas.org/nuke/guide/usa/slbn/d-5.htm> (accessed June 3, 2013).

⁶⁹ U.S. Congressional Research Service. Conventional prompt global strike and long-range ballistic missiles (R41464; April 26, 2013), Ed. Amy F. Woolf. <http://www.fas.org/sgp/crs/nuke/R41464.pdf> (accessed June 6, 2013).

⁷⁰ Perkovich and Acton, (2009), 30.

⁷¹ *Ibid.*, 31.

countries, and would continue to work closely with the United Nations and the international community to deter any potential proliferators from gaining nuclear weapons.

In eliminating its nuclear weapons, the US could increase its conventional force capability, which would make other great power nations more concerned. This transition could prove to be beneficial for its allies and itself, as the US would still maintain its status as a superpower.

Reassuring the International Community

In order for the United States to successfully disarm its nuclear weapons program, it will be necessary to reassure its allies that it will still be able to provide protection against any potential enemies. In the 2010 *Nuclear Posture Review*, President Obama outlined the different ways US conventional forces will help to continuously provide protection and maintain a secure relationship with its allies. This report states that the US will continue to “forward deploy forces in key regions, strengthening of U.S. and allied non-nuclear capabilities, and the continued provision of extended deterrence.”⁷² The US has forward deployed some of its weapon capabilities to its NATO allies for decades now, in an effort to enable faster reaction times to attacks. President Obama is promising US allies that he will maintain these weapon capabilities within their countries, as well as work towards strengthening its conventional forces. With the US perpetually improving its forces, it will still continue to share this technology with its allies, therefore reaffirming their security position with the US and maintaining this assurance.

In order to ensure their continuing support, the Obama administration plans to consult its allies regarding its goal of nuclear disarmament. US and NATO allies would have an open dialog about the current position of US forces, as they provide protection for its allies, which will be enhanced when the previously nuclear delivery systems become a conventional force capability

⁷² U.S. Department of Defense. *Nuclear Posture Review*, (2010), 31.

and the future of US protection. President Obama maintains that, “Any changes in NATO’s nuclear posture should only be taken after a thorough review within- and decision by- the Alliance.”⁷³ Including its allies in the decision-making process allows the US to maintain these alliances and continue to provide for a mutually trusting relationship, as the position and concerns of these allies will be heavily considered.

Another reassurance that the US can provide its allies is to follow through with the commitment to the 1968 Treaty on the Non-Proliferation of Nuclear Weapons, commonly referred to as the Non-Proliferation Treaty (NPT). The NPT was agreed upon by the US, other major nuclear states, and numerous non-nuclear states. The treaty included terms that required the nuclear states to agree to stop the nuclear arms race, with the eventual goal of completely disarming all nuclear weapons.⁷⁴ After this treaty was signed, the United States and Russia worked together to halt the nuclear arms race and entered into agreements to reduce the number of nuclear weapons that each country possessed. While the treaties between the US and Russia significantly reduced the number of nuclear weapons that existed, complete disarmament has not been the goal of these treaties. However, if the US were to disarm its nuclear weapons program, it would prove to its allies that it would follow through with the commitment it has made through NPT. As the Obama administration said, the US will “continue to assure our allies and partners of our commitment to their security and to demonstrate this commitment not only through words, but also through deeds.”⁷⁵

While it is important to reassure US allies, it is also important to reassure the international community. In the 2010 *Nuclear Posture Review* (NPR), President Obama outlines his policy on nuclear disarmament, stating that the “United States will therefore pursue high-

⁷³ U.S. Department of Defense. *Nuclear Posture Review*, (2010), 31.

⁷⁴ United Nations, (1968).

⁷⁵ U.S. Department of Defense. *Nuclear Posture Review*, (2010), 31.

level, bilateral dialogues with Russia and China aimed at promoting more stable, resilient, and transparent strategic relationship.”⁷⁶ For example, the NPR states that this administration will work with Russia by “explain[ing] that our missile defense and any future U.S. conventional-armed ... missile systems are designed to address newly emerging threats, and are not intended to affect” their relationship.”⁷⁷ The Obama administration wants to continue discussions with Russia in order to reassure them the US has not changed its policy towards them and believes it is necessary to continue discussions on defense strategies.

The US also believes it is necessary to continue dialog with China, and the goal is to “enhance confidence, improve transparency, and reduce mistrust.”⁷⁸ The US wants to maintain a strong relationship with both China and Russia, as they are major powers in the international community. The US also wants to reduce any potential conflict that might arise from this changed policy.

Steps to Nuclear Disarmament

For the United States to be able to eliminate its nuclear weapons systems effectively, there are numerous steps required for the transition to be successful. One step prior to eliminating its nuclear weapons program is to ratify the Comprehensive Test Ban Treaty (CTBT). This step is important for the role of US in the international community, as it will signal the transition in defense and help international communities refocus their defense capabilities towards the reduction of nuclear weapons. The Obama administration needs to initiate the ratification within the Senate, as this treaty is crucial in the future of disarmament. As suggested by Shultz et al. (2007), the US would be able to take advantage of “technical advances” and

⁷⁶ U.S. Department of Defense. *Nuclear Posture Review*, (2010), 28.

⁷⁷ *Ibid.*, 28.

⁷⁸ *Ibid.*, 29.

work towards ratifying this treaty for itself and other key nuclear states.⁷⁹ The technical advances are very important to the US, as it would lock in what the US knows “about nuclear weapons and nuclear tests ... between 1945-1992, the United States [has] conducted some 1,030 nuclear tests as many as all other nuclear states combined.”⁸⁰ The US is already at an advantage, therefore, ratifying this treaty would help to encourage the international community to comply with the treaty and punish those that are noncompliant. It is likely that if the United States approves the treaty, it would encourage others, such as China, to ratify it as well.⁸¹ Ratification of the CTBT by China would signal to the US and the international community that China, as noted by Liping (2010), is “open, transparent, and responsible...committed to following the road of peaceful development,” therefore, reducing the impact of nuclear weapons within the international community.⁸²

However, not everyone agrees that the US should ratify this treaty, as it would require all nuclear weapons testing to cease. Although the US has not conducted any testing in decades, critics do not want the US to be constrained by international treaties, which they believe CTBT would do. These opponents argue that testing is “indispensable to ensure the future reliability of the modernized nuclear stockpile,” and ratifying the treaty would prevent the US from physically testing its modernized nuclear weapons.⁸³ While opponents of the treaty want to retain the option to test nuclear weapons, “[the] United States has not conducted a yield-producing experiment

⁷⁹ Shultz et al., (2007).

⁸⁰ Steven Pifer, “New Support for the Comprehensive Test Ban Treaty,” Washington DC: Brookings Institution, (March 30, 2012), <http://www.brookings.edu/blogs/up-front/posts/2012/03/30-nuclear-pifer> (accessed May 2, 2013).

⁸¹ Steven Pifer, “Memorandum to the President: Nuclear Arms Control: Another New START,” Washington DC: Brookings Institution, (January 17, 2013), <http://www.brookings.edu/research/papers/2013/01/nuclear-arms-control-another-new-start> (accessed March 11, 2013).

⁸² Xia Liping, “The CTBT and China’s New Security Concept,” *CTBTO Spectrum 15*, (November 2010), http://www.ctbto.org/fileadmin/user_upload/pdf/Spectrum/2010/Spectrum15_page11_Liping.pdf (accessed May 4, 2013).

⁸³ Den Dekker, (2010), 86.

since 1992, when George H.W. Bush was forced by Congress to stop U.S. nuclear weapons testing.”⁸⁴ The US is politically restricted from testing nuclear weapons because of the negative impact it would have on the international community, such as encouraging proliferation or even starting an arms race.

Another step towards disarmament is supporting the role of the International Atomic Energy Agency (IAEA), which assists with the important process of verification and monitoring of nuclear materials within the international community. The literature suggests the US should help to improve IAEA safeguards for securing nuclear material. If the IAEA were able to safeguard fissile material and conduct inspections more frequently, it would be better able to detect non-nuclear weapon states’ production of nuclear weapons, provided that nuclear states would allow unlimited access. However, while illegal proliferation and production can still take place, the IAEA safeguards will make it considerably more difficult. It has also been suggested that the US work with the IAEA and Russia to review the “physical protection of fissile material” and create a high standard for securing this material.⁸⁵ The other alternative for ensuring the security of fissile materials is to halt any further production of this material for nuclear weapons.⁸⁶ By both providing security for this material and/or halting its production, the IAEA would be able to better account for the global supply of these nuclear materials. With the US allowing the IAEA access to this information, it would help provide a thorough accounting and ensure the security of participating countries’ nuclear stockpiles. Lastly, NPT parties should subscribe to the IAEA’s additional protocol. This protocol would allow the IAEA to “conduct more comprehensive and frequent inspections of declared and undeclared facilities.”⁸⁷ These

⁸⁴ Bendikova and Spring, (2013), 5.

⁸⁵ Albright et al., (2010).

⁸⁶ Shultz et al., (2007).

⁸⁷ Panofksy, (2007).

inspections would allow the IAEA to be more aware of the nuclear materials in the world and to detect if a state has the capabilities and is hiding the nuclear materials.

Another step the US would have to take towards disarmament is verification of the transition to zero nuclear weapons. For the US to disarm its nuclear weapons, it will need to be transparent and provide verification of disarmament to the international community. Recently, the United States has provided specific numbers of how many deployable nuclear warheads and the total number of nuclear weapons it currently possesses.⁸⁸ By disclosing these capabilities, the US is helping to build confidence within the international community. Transparency is also important for verification as well, as strict verification procedures would be crucial to US allies who have “chosen to rely on the US nuclear umbrella to counterbalance a nuclear-armed neighbor.”⁸⁹ Because many of its allies are relying on the US for defense, the allies would want to be kept informed of the means of their protection. This would also help to build trust throughout the greater international community, since the US would be providing full disclosure of its weapons capabilities.

While NATO allies would be likely to support the move towards US conventional forces, Russia and China would still remain skeptical of this change as well as any consideration of following the US lead. As previously noted, the US has a very strong conventional force that has the Russians very concerned. Perkovich (2010) suggests that, “Russian leaders will cling to nuclear weapons as potential balancers, whether or not it is realistic.”⁹⁰ The reason the Russians need these nuclear weapons is because they believe it allows them to be a major world power, and these weapons “will be attractive symbols of this power as long as Russia lacks other means

⁸⁸ Glaser, (2009), 126.

⁸⁹ Perkovich and Acton, (2009), 49.

⁹⁰ George Perkovich, “The Obama nuclear agenda one year after Prague,” Washington D.C.: Carnegie Endowment for International Peace, (March 31, 2010), <http://carnegieendowment.org/files/prague4.pdf> (accessed June 5, 2013).

to make itself feel prominent in international affairs.”⁹¹ China takes a different perspective than Russia when it comes to US disarmament. The Chinese believe that the US should have already taken a much more proactive position on disarmament, and that the US should “drastically reduce their nuclear arsenal in a verifiable [manner]... so as to create the necessary conditions for the participation of other nuclear-weapon states in the process of nuclear disarmament.”⁹² China encourages the US and other major nuclear powers to disarm their nuclear weapons, and welcomes dialog about the future of nuclear disarmament.

Currently, the US utilizes numerous nuclear weapons plants to assemble and disassemble its nuclear warheads. The Pantex facility assists in disassembling nuclear warheads and storing the remaining plutonium pits. However, the facility has a “20,000 pit-storage limit” which it is closely approaching.⁹³ Options are in review to expand its storage capacity, as it is necessary in order to help accommodate the storage requirements of further reductions.⁹⁴ During the Clinton administration, Pantex was highly successful in reducing the number of nuclear warheads at the significant pace of “more than 1,000 warheads a year.”⁹⁵ After that administration, Pantex was contracted to begin refurbishing the weapons, which drastically reduced the number of nuclear warheads being dismantled to “fewer than 100 warheads” a year.⁹⁶ With the US changing its policy towards disarmament, it would be able to amend the contract with Pantex, which could detail only destroying warheads. This change could allow it to get back to the previous level of destruction of more than 1,000 warheads a year.

⁹¹ Perkovich, (2010), 6.

⁹² Lavina Lee, “Beyond Symbolism? The U.S. nuclear disarmament agenda and its implications for Chinese and Indian nuclear policy,” Washington DC: CATO Institute, (February 8, 2011), <http://www.cato.org/sites/cato.org/files/pubs/pdf/fpb91.pdf> (accessed June 4, 2013).

⁹³ Scott Kovac. *Letter to Dr. Peter S. Winokur, Defense Nuclear Facilities Safety Board* (May 24, 2013), http://www.dnfsb.gov/sites/default/files/Board%20Activities/Letters/2013/ltr_2013524_22071_0.pdf (accessed June 7, 2013).

⁹⁴ Kovac, (2013).

⁹⁵ Lewis and Lugo, (2009).

⁹⁶ Ibid.

The US can effectively disarm its nuclear weapons program by taking certain steps to ensure a successful drawdown process. The US should consult its allies to gauge the political climate of the international community prior to disarming its nuclear weapons program. However, if the US is going to disarm its nuclear program and makes that its declaration, that declaration cannot be revoked.⁹⁷

Disarmament Impacting the Budget

Another topic investigated in this research is the impact that disarmament would have on the defense budget. In order to resolve the fiscal difficulties the US is currently experiencing, the federal government needs to find areas within the budget that can either be reduced or eliminated. One target of these reductions is the Department of Defense, which has the potential for a “\$52 billion reduction [annually] if sequestration becomes an annual event.”⁹⁸ Therefore, the goal of eliminating the nuclear weapons program could help the federal government reduce the debt and alleviate the stress of reducing or cutting other mission-critical programs. The actual amount dedicated to the US nuclear program is classified, but some estimates suggest that the United States, “spends about \$31 billion annually” to maintain the program.⁹⁹ The nuclear program affects other organizations as well, spanning across seven different departments (see Appendix II) within the federal government.¹⁰⁰ Maintaining this nuclear program is a large expense for the federal government, and therefore eliminating it would improve the ability of the government to pay for other vital defense programs, as well as make huge strides towards the Obama administration’s plans for nuclear arms reductions.

⁹⁷ Den Dekker, (2010), 83.

⁹⁸ Cheryl Pellerin, “DOD Comptroller: Sequestration Devastates U.S. Military Readiness,” *American Forces Press Service*, (May 10, 2013), <http://www.af.mil/news/story.asp?id=123348049> (accessed May 14, 2013).

⁹⁹ Arms Control Association, (2013).

¹⁰⁰ Schwartz and Choubey, (2009), 8.

Not only could the funds currently allocated to the nuclear weapons program be used to help alleviate budget concerns, but they could also be used to improve other means of defense. If the United States is going to eliminate its nuclear weapons program, it will need to set aside funds for the DoD to help improve the alternative defenses it will use instead of nuclear weapons. The US has established plans to modernize its nuclear weapons, which is estimated to cost “hundreds of billions of dollars over the next 20 years.”¹⁰¹ Therefore, the long-term effects of eliminating nuclear weapons could allow the US to reallocate funds towards improving conventional forces and reducing the overall budget.

In an effort to help the fiscal difficulties the US is currently facing, the US could eliminate its nuclear weapons program and potentially save \$31 billion a year.¹⁰² By cutting this program, the US would instead be able to spend the saved money on defense programs that are more cost-effective and ready to use, and it would help alleviate some of the budget concerns of the Department of Defense.

¹⁰¹ Doyle, (2013), 22.

¹⁰² Arms Control Association, (2013).

RECOMMENDATIONS

Based on the analysis of this research, there are three recommendations that would help the United States transition to unilaterally disarming its nuclear weapons program. These three recommendations are: 1) strengthening and maintaining quality conventional forces, 2) reallocating Department of Defense funding, and 3) reassuring allies by maintaining deterrence.

Strengthen and Maintain Quality Conventional Forces

Many sources in the literature suggest that, in order for the United States to move away from its nuclear weapons program, it needs rely only on its conventional forces as a means of deterrence and defense. One method to strengthen its conventional forces would be to refit previously nuclear-armed missiles with conventional warheads, which would allow the United States to maintain a *conventional force triad* where it previously had a nuclear triad. This “triad” would consist of heavy bombers (B-1 and B-52) and B-2 stealth bombers that previously carried nuclear payloads SLBMs on nuclear powered submarines, and land based missiles (ICBMs). If these nuclear-weapon delivery systems were refitted with conventional warheads, the United States would be able to improve its military readiness and respond to, or preempt, an attack on the US or its allies with a conventional ICBM within 20 minutes or with an SLBM within 10 minutes.^{103 104}

The analysis briefly reviewed how the US is currently reducing its nuclear weapons by contracting with Pantex. It would prove beneficial for the US to speed the process of disassembly by reviewing the contract with Pantex and instead only contract them to disassemble the nuclear weapons. This would allow the US to get back to the disassembly numbers of the Clinton era of 1,000 nuclear warheads a year, allowing the US to reduce its nuclear stockpile within a few

¹⁰³ National Museum of the US Air Force, (2009).

¹⁰⁴ Federation of American Scientists, (1998).

years, rather than a few decades.¹⁰⁵ Such a reduction would show the international community the US's commitment to disarmament and to the NPT agreement.

This research also indicated that the plutonium pits in storage at Pantex are almost at capacity. It was briefly suggested that a new storage facility was to be created for storing these pits. In order to move forward with disarmament, the government will have to either expand the storage at Pantex or build a new facility, possibly the Nevada National Security Site, to accommodate more plutonium pits.¹⁰⁶ Having proper storage for these pits will allow the US to further its disarmament agenda.

Reallocate Department of Defense Funding

The United States is currently spending approximately \$31 billion a year on its nuclear weapons program.¹⁰⁷ In recent years, policymakers have called to modernize our nuclear weapons, which would cost roughly \$640 billion over ten years.¹⁰⁸ Over ten years, that equates to close to \$1 trillion dollars! However, the amount of money the US is spending on research for this modernization is also having a significant impact on the defense budget. The US is currently observing a sequestration and is looking to reduce the budget of the Department of Defense; therefore, spending billions of dollars on maintenance of its nuclear facilities and weapons seems unjustifiable. It would financially benefit the US to eliminate the role of nuclear weapons and halt its costly plans for modernizing these weapon systems. The funds saved by eliminating the

¹⁰⁵ Lewis and Lugo, (2009).

¹⁰⁶ U.S Department of Energy. Life Extension Programs. (n.d.), <http://nnsa.energy.gov/ourmission/managingthestockpile/lifeextensionprograms> (accessed June 10, 2013).

¹⁰⁷ Doyle, (2013), 22.

¹⁰⁸ Ploughshares Fund. "What Nuclear Weapons Cost Us?," (September 2012), [http://www.ploughshares.org/sites/default/files/resources/What%20Nuclear%20Weapons%20Cost%20Us%20Final%20\(100212\).pdf](http://www.ploughshares.org/sites/default/files/resources/What%20Nuclear%20Weapons%20Cost%20Us%20Final%20(100212).pdf) (accessed May 21, 2013).

required maintenance and further development of nuclear weapons, roughly \$10 billion a year, could instead be reallocated to improve conventional US forces.¹⁰⁹

The US could devote funds towards modernizing and providing new technology to conventional forces, which would assist the US in its transition away from its nuclear weapons program. The \$640 billion that the US currently spends on its nuclear weapons program (in a decade) would allow the US to invest in new technology, such as the MOP bunker-busting missile that has better bunker busting capabilities than that of a nuclear warhead. This change to US forces would help ease budget issues at a time when the US is seeking to reduce spending. Eliminating the US nuclear weapons program will provide a substantial reduction in Department of Defense spending, and give the US a chance to reinforce and improve upon the best conventional force in the world.

Reassure the International Community

In order for the US to disarm its nuclear weapons successfully, it will need to maintain a strong relationship with its allies. In order to accomplish this, the US will need to involve its allies in disarmament talks to reassure them of their protection and to maintain a strong working relationship. The US will also need to pursue high-level dialog with China and Russia to create stable and secure relationships. An open dialog with both of these countries is important as the US will need to reassure both countries that its policy towards them has not changed and will not affect their relationship. With the US changing its defense policy, it will change international policy and make non-nuclear states push for more major nuclear states to disarm.

¹⁰⁹ U.S. Government Accountability Office. Modernizing the Nuclear Security Enterprise, (July 2012), <http://www.gao.gov/assets/600/593152.pdf> (accessed May 21, 2013).

Strengthening International Organizations

Lastly, the literature discussed the implementation of the IAEA additional protocol on NPT parties. This protocol would allow the IAEA the ability to conduct more thorough and frequent inspections on nuclear facilities and materials. This would be a benefit to US national security, as the IAEA would have the potential to detect if participating governments were attempting to build their nuclear weapons stockpiles or misuse their nuclear materials. However, if a country that did agree to the protocol but did not allow the IAEA to conduct its inspections, it would help to build a case against potential violations and allow the international community time to react to violators.

CONCLUSION

The United States agreed to work toward disarming its nuclear weapons program decades ago by agreeing to Article VI of the Nuclear Non-Proliferation Treaty.¹¹⁰ Since that time, the US has successfully reduced its nuclear weapons, but it has not actively worked towards total disarmament. The current administration has outlined its goal to work towards disarmament and fulfill its NPT agreement. This paper has explored the different factors that the US must consider and the steps it will have to take in order to make a successful transition to disarmament.

Summary

The purpose of this research was to investigate whether the US can successfully disarm its nuclear weapons program. In order for this transition to be a successful, the US needs to investigate and take into account several different factors. These factors include whether or not the US can still maintain adequate deterrence for itself and its allies. Another factor is whether the US can properly reassure its allies and major world powers to prevent further proliferation and demonstrate its ability to maintain protection. The US also needs to have a path forward towards disarmament, which would include assistance from international treaties and organizations. The last factor to consider is how the US nuclear budget is affecting defense, and whether reallocating funds will help to reduce the deficit and help to modernize conventional forces. By understanding these issues, the US can develop a clear path to disarmament, and the current administration can actively begin to work towards disarmament.

The historical research indicated that the international treaties have set the foundation for the future disarmament of the nuclear states. However, these treaties did not set strict enough guidelines for nuclear states to disarm, which is the reason some states have only been passively

¹¹⁰ Christopher A. Ford. "Debating Disarmament: Interpreting Article VI of the Treaty on the Non-Proliferation of Nuclear Weapons," *Nonproliferation Review* 14, no.3 (2007): 401-428.

working towards disarmament. In past years, the United States has agreed to reduce its nuclear weapons; however, it did not have the leadership to pursue disarmament aggressively like it does now under the Obama administration. These international treaties have assisted the current administration in its goal towards nuclear disarmament.

The analysis of the data identified four prerequisites that the US would have to adhere to in order to disarm successfully. First, in order for the US to maintain deterrence, it will rely on its conventional forces because they are the most effective alternative to its nuclear program. Second, it must reassure the international community that the US will still be able to maintain protection to its allies without its nuclear weapons, and that it will not result in an overbearing threat to the rest of the international community. Third, in working towards disarmament, the US will need to ratify the CTBT treaty to lock in the technical advances the US has already made and to prevent further nuclear testing by other countries. Another step towards disarmament is to help aid the IAEA with safeguarding nuclear materials. Additionally, the US will need to reallocate the funds from its nuclear weapons program to the task of modernizing its conventional forces and preventing any further cuts to the budgets of its critical missions. Finally, the US will also need to reassess its plutonium pit storage and ensure it is adequate before moving forward with disarmament.

Future Research

The purpose of this research was to discover how unilateral disarmament would affect the United States and its national security, as well as the steps required to implement the disarmament plans effectively. A topic discussed within this research was the possible effects that disarmament of the United States would have on the international community, and the literature review briefly discussed the possible impact it would have on China and Russia.

However, the disarmament of the United States would have many global effects and would change US policy, potentially sparking large changes to international policy as well. As research can only be conducted after disarmament has begun, a possible area of future research is the actual correlation between US disarmament and any subsequent changes to international policy.

APPENDIX I: NPT SIGNATORIES

Afghanistan	1 Jul 1968	Guatemala	26 Jul 1968	New Zealand	1 Jul 1968
Australia	27 Feb 1970	Haiti	1 Jul 1968	Nicaragua	1 Jul 1968
Austria	1 Jul 1968	Honduras	1 Jul 1968	Nigeria	1 Jul 1968
Barbados	1 Jul 1968	Hungary	1 Jul 1968	Norway	1 Jul 1968
Belgium	20 Aug 1968	Iceland	1 Jul 1968	Panama	1 Jul 1968
Benin	1 Jul 1968	Indonesia	2 Mar 1970	Paraguay	1 Jul 1968
Bolivia	1 Jul 1968	Iran	1 Jul 1968	Peru	1 Jul 1968
Botswana	1 Jul 1968	Ireland	1 Jul 1968	Philippines	1 Jul 1968
Bulgaria	1 Jul 1968	Italy	28 Jan 1969	Poland	1 Jul 1968
Burkina	25 Nov 1968	Jamaica	14 Apr 1969	Republic of Korea	1 Jul 1968
Cameroon	17 Jul 1968	Japan	3 Feb 1970	Romania	1 Jul 1968
Canada	23 Jul 1968	Jordan	10 Jul 1968	Russia	1 Jul 1968
Chad	1 Jul 1968	Kenya	1 Jul 1968	San Marino	1 Jul 1968
Colombia	1 Jul 1968	Kuwait	15 Aug 1968	Senegal	1 Jul 1968
Congo	26 Jul 1968	Laos	1 Jul 1968	Singapore	5 Feb 1970
Costa Rica	1 Jul 1968	Lebanon	1 Jul 1968	Somalia	1 Jul 1968
Cote d'Ivoire	1 Jul 1968	Lesotho	9 Jul 1968	Sri Lanka	1 Jul 1968
Cyprus	1 Jul 1968	Liberia	1 Jul 1968	Sudan	24 Dec 1968
Democratic Republic of the Congo	22 Jul 1968	Libya	18 Jul 1968	Swaziland	24 Jun 1969
Denmark	1 Jul 1968	Luxembourg	14 Aug 1968	Sweden	19 Aug 1968
Dominican Republic	1 Jul 1968	Madagascar	22 Aug 1968	Switzerland	27 Nov 1969
Ecuador	9 Jul 1968	Malaysia	1 Jul 1968	Syria	1 Jul 1968
Egypt	1 Jul 1968	Maldives	11 Sep 1968	Togo	1 Jul 1968
El Salvador	1 Jul 1968	Mali	14 Jul 1969	Trinidad and Tobago	20 Aug 1968
Ethiopia	1 Jul 1968	Malta	17 Apr 1969	Tunisia	1 Jul 1968
Finland	1 Jul 1968	Mauritius	1 Jul 1968	Turkey	28 Jan 1969
Gambia	4 Sep 1968	Mexico	26 Jul 1968	United Kingdom	1 Jul 1968
Germany	28 Nov 1969	Mongolia	1 Jul 1968	United States	1 Jul 1968
Ghana	1 Jul 1968	Morocco	1 Jul 1968	Uruguay	1 Jul 1968
Greece	1 Jul 1968	Nepal	1 Jul 1968	Venezuela	1 Jul 1968
		Netherlands	20 Aug 1968	Yemen	23 Sep 1968

Withdrawn States

North Korea	10 Jan 2003

Non-Signatory States

India	Israel
Pakistan	South Sudan

Source: U.S. Department of State. Signatories and Parties to the Treaty on the Non-Proliferation of Nuclear Weapons. (December 2, 1998), <http://www.state.gov/www/global/arms/treaties/npt3.html> (accessed May 28, 2013).

APPENDIX II: US NUCLEAR BUDGET DEPARTMENTS

Department of Defense
Department of Energy
Department of Health and Human Services
Department of Homeland Security
Department of Justice
Department of Labor
Department of State

Source: Schwartz, Stephen I. and Deepti Choubey. Nuclear security spending: Assessing costs, examining priorities. Washington DC: Carnegie Endowment For International Peace, (2009), http://carnegieendowment.org/files/nuclear_security_spending.pdf (accessed May 12, 2013).

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The thesis for the master's degree submitted by

under the title

has been read by the undersigned. It is hereby recommended

for acceptance by the Faculty with credit to the amount of

3 semester hours.

(Signed) _____ (Date) _____

(Signed) _____ (Date) _____

Recommended for approval on behalf of the Department

(Signed) _____ (Date) _____

Recommendation accepted on behalf of the

Dean, School of Arts and Sciences

(Signed) _____ (Date) _____

Approved Academic Dean and Vice-President