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APPLYING THE LESSONS LEARNED IN THE JOINT COMPREHENSIVE PLAN OF ACTION TO COUNTERPROLIFERATION EFFORTS AIMED AT THE DEMOCRATIC PEOPLE’S REPUBLIC OF KOREA.

Capstone Creative Research Project Draft

Submitted to the Faculty

of

American Public University

by

Christopher A. Davaz

In Partial Fulfillment of the Requirements for the Degree of

Master of Arts

October 2017

American Public University

Charles Town
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DEDICATION

I dedicate this Capstone Creative Project to my wife and two sons. Without their perfect patience, support, unending love, and general all-around awesomeness all this effort would not have been possible. I also dedicate it to the professionals (throughout the world) who walk the razor’s edge between peace and Armageddon by safely, securely, and reliably maintaining, securing, and manning humankind’s most powerful weapons.
ACKNOWLEDGMENTS

I wish to thank the professors and staff of American Military University and American Public University System. Their impeccable instruction and support has been, quite literally, indispensable. Dr. Alison Becker was particularly helpful in guiding me towards completion of this effort. My time in the Philosophy department (for my undergraduate degree) and in the Legal Studies department (in pursuit of my graduate degree) have been more than enlightening. Thank you all!
ABSTRACT OF THE CREATIVE RESEARCH PROJECT

APPLYING THE LESSONS LEARNED IN THE JOINT COMPREHENSIVE PLAN OF ACTION TO COUNTERPROLIFERATION EFFORTS AIMED AT THE DEMOCRATIC PEOPLE’S REPUBLIC OF KOREA.

by

Christopher Anthony Davaz

American Military University, September 25, 2017

Charles Town, West Virginia

Professor Alison Becker, Creative Research Project Professor

Denuclearization of the Democratic People’s Republic of Korea (also colloquially called North Korea, hereinafter DPRK) is a major concern for most of the world’s governments and the intensity of the situation has been steadily increasing throughout recent years. The goal of total denuclearization of the Korean Peninsula will most probably be achieved by means of an instrument of international law (e.g. treaty, agreement, condition for armistice). The effectiveness of that instrument will largely depend on how the parties thereto approach the negotiations, the specific language that is contained therein, and the methods of execution and verification. A similar attempt at achieving denuclearization was codified in the Joint Comprehensive Plan of Action (JCPOA). By examining the JCPOA, a list of lessons learned can be formulated. The author conducted empirical and scholastic research to gather a list of lessons that can be learned from the JCPOA (at each stage of its lifecycle) and applied to the DPRK in hope that crafters and executors of the proposed agreement will ensure that the strengths of the JCPOA can be carried over, any omissions can be included, and any weaknesses mitigated.
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CHAPTER I: INTRODUCTION

“No threat poses as grave a danger to our security and well-being as the potential use of nuclear weapons and materials by irresponsible states or terrorists.”

The nuclear ambitions of the Democratic People’s Republic of Korea (DPRK) are a significant problem for a majority of the world. The concern is so immense that the Obama Administration publicly warned the Trump Administration that the DPRK would likely be a top national security problem. As the DPRK makes progress towards becoming a fully capable nuclear power, the International Community (e.g., China, Russia, Japan, the United States, France, the United Kingdom the Republic of Korea, the European Union, the United Nations, etc., hereinafter IC) is faced with a few general options: (a) allow the DPRK to become a nuclear capable state, (b) prevent the proliferation of nuclear weapons to the DPRK through means of military force, or (c) try to force a diplomatic resolution by coercing the DPRK into adoption of (and adherence to) an instrument of international law that codifies the permanent disarmament thereof. United in common purpose, most of the world will not stand-by as the DPRK becomes a fully nuclear capable power, thereby ruling out option (a). Option (b), forcing denuclearization through military action, is likely to incur prohibitive costs in terms of both lives

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1 OFF. OF THE PRESIDENT OF THE U.S., NATIONAL SECURITY STRATEGY, 11(2015), https://obamawhitehouse.archives.gov/sites/default/files/docs/2015_national_security_strategy.pdf (Per 50 U.S.C. § 15 §§ 404a, the President must annually submit to Congress a report on the Administration’s national security strategy. In recent years, the report has been submitted typically late, or not submitted at all. The most current report is from 2015. The inclusion of the quoted sentiment is almost assuredly going to remain a cornerstone of the United States’ national security strategy for the foreseeable future, emphasis added).


lost and capital expenditures\textsuperscript{4}. Option (c), coercive diplomacy and international law, is therefore the most tenable path that the IC should pursue in efforts to denuclearize the DPRK.

A potential instrument of international law codifying the terms under which the DPRK disarms should draw on the knowledge attainable from reviewing recent similar efforts. The Joint Comprehensive Plan of Action (JCPOA) was signed in 2015 and effected the disarmament (and related sanctions relief) of the Islamic Republic of Iran (hereinafter Iran).\textsuperscript{5} The proliferation situations in Iran and the DPRK share many similarities. By drawing upon the lessons learned in the JCPOA, the IC can ensure that the strongest possible DPRK-counterproliferation instrument is crafted.

Nuclear disarmament, nonproliferation, and counterproliferation are inherently and technically very complicated matters. Due to the physical and technical constraints required in the DPRK’s nuclear weapons program, many of the limitations codified in the JCPOA should be able to translate directly to a similar agreement with the DPRK. The primary differences between the two situations revolves around variation in circumstance inherent therein. Some facets of the JCPOA that may have been particularly effective in countering Iranian proliferation may be counterproductive when it comes to the DPRK. Therefore, analysis of each element (at each stage) of the JCPOA demands careful review as a potential strength, weakness, or omission when applied to the proliferation situation in the DPRK. This Creative Research Project


articulated the conditions surrounding the nuclear proliferation concerns in the DPRK and Iran, before it outlined the strengths, weaknesses, and omissions within the JCPOA, and its genesis, formation, and execution as applicable to the IC’s counterproliferation goals for the DPRK.

At the outset, certain assumptions must be clarified and outlined to mitigate any possible oversight or confusion. The first assumption made herein is that the DPRK should not have nuclear weapons. While this assumption seems like it is self-evident, legal analysis demands objective investigation of the IC’s authority in coercing the DPRK’s disarmament. Legal footing for this assumption stems from the Charter of the United Nations, several resolutions adopted by the Security Council and by the circumstances under which the DPRK left the Treaty on the Non-Proliferation of Nuclear Weapons (NPT). The nearly global perception that the DPRK’s weapons program is generally destabilizing also serves to support the assumption that the IC has the authority to force disarmament.

The second assumption made herein is that war should be avoided while diplomatic solutions remain a reasonable option. This assumption is supported by both the preamble and section three of Article Two of the UN Charter. While warfare is not expressly outlawed, the obligations implied in the UN Charter demand that states exhaust peaceful means for dispute resolution. The Security Council is empowered by the UN Charter to use coercive actions, ranging from public condemnations to collective military action, to force compliance with its resolutions and those of the General Assembly.

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8 U.N. Charter pmbl. & art. 2 ¶ 3.
The third and final assumption made herein is that international law can control a state’s behavior effectively. The absence of an overarching international authority may engender a sense of the absolute anarchy that forms the basis of the two primary theoretical frameworks with International Relations. However, the UN Security Council is empowered to prevent and resolve conflict through a wide array of tools.\textsuperscript{10} Thus, if the IC determines that a state is acting in contravention of international law, then the UN can act as the focal point for international concentration of enforcement action.\textsuperscript{11}

Traditional legal scholasticism lacks the ability to predictively analyze the willingness of a state to undertake an act or accede to an instrument of international law. To establish a theoretical framework through which predictions about a state’s intentions and motives can be applied to traditional legal analysis, two major theories found within the academic discipline of International Relations must be co-opted: neorealism and neoliberalism. Without this framework, analysis of the motives driving the parties to act becomes myopic and loses the ability to adopt a more cooperative and mutually beneficial approach.

Neorealism suggests that the international system is inherently anarchic due to the lack of an external system that forces states to interact with each other in prescribed ways.\textsuperscript{12} Within that anarchy, conflict becomes inevitable as states vie with one another over resources, territory, and other desires.\textsuperscript{13} Operating under neorealist logic, states will be primarily motivated by their own

\begin{flushleft}
\textsuperscript{10} U.N. Charter art. 33-54, and 75-85.
\textsuperscript{11} Frederic L. Kirgis, \textit{Enforcing International Law}, INSIGHTS, Jan. 22, 1996, 1 at para. 3.
\end{flushleft}
survival and will distrust other states. Faced with what it perceives as a hostile world, a given state (in the case at hand, either the DPRK or Iran) will seek to advance its ability to defend itself. Perceiving the advanced defensive/offensive capability of the first as a threat to themselves, other states will decide to advance their own military capabilities. This fosters a dichotomy called a security dilemma. Therein, each state races to build defensive/offensive capabilities that outpace others. The end result of which is an arms race that, in actuality, destabilizes the world and places all states at greater risk of war. States following neorealist logic seek relative gains compared to other states.

As power centers grow within a region or on the global stage, neorealism suggests that the variation in resources, economics, and other factors will create an inherent imbalance that can be monopolar, bipolar, or multipolar. That imbalance will result in a hegemony in which the stronger power can (through threats of military force) force less powerful states to do or avoid doing certain things. In the case of the DPRK, the IC (and the U.S. in particular) is the acting hegemony, and through coercive diplomacy and threat of military force, has prevented the DPRK from achieving its goals. The DPRK therefore believes that to break the hegemony of the IC, it must develop a robust nuclear weapons program. The fruit of that program then becomes

14 id.
15 id.
16 id.
18 id.
19 id.
20 Bordner, *supra*.
21 id.
22 Alex Lockie, *North Korea doesn’t just want nuclear weapons for defense – it wants them to retake South Korea*, BUSINESS INSIDER (7 Aug. 2017) retrieved from
a new facet in the *security dilemma* that further destabilizes both the region and world at large.\(^{23}\)

Another part of the DPRK’s neorealist view of the world is that international organizations [e.g., the UN and its subordinate organs like the International Atomic Energy Agency (IAEA)] are often excessively influenced by the hegemony and thus, the DPRK will be less likely to support those organs’ efforts.\(^{24}\) In light of the DPRK’s neorealist view, implementation of, content within, and execution of a proposed counterproliferation instrument must include language and actions aimed at ensuring the continued existence of the state and its government. Anything contrary thereto would only prove the DPRK’s belief that the IC’s goal is its annihilation. Rex Tillerson, the U.S. Secretary of State, included language that affirmed the IC’s avoidance of the DPRK’s believed neorealist posture by stating:

\[
\text{…we do not seek a regime change; we do not seek the collapse of the regime; we do not seek an accelerated reunification of the peninsula; we do not seek an excuse to send our military north of the 38th parallel. And we’re trying to convey to the North Koreans we are not your enemy, we are not your threat, but you are presenting an unacceptable threat to us, and we have to respond.}^{25}\]

The inclusion of that language is illustrative of the fact that (at least part of) the administration is aware that successful implementation of an instrument of international law is largely going to depend on assurances that the effort is not geared towards annihilation of the DPRK.

A contrary (albeit somewhat complementary) theory within International Relations is neoliberalism.\(^{26}\) Neoliberals also presume that the international system is inherently anarchic.\(^{27}\)

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\(^{23}\) Tang, *supra*, at 605.

\(^{24}\) Bordner, *supra*.


They slightly differ, however, in that they assume that, within the anarchic world, conflict is *eventually* inevitable.\textsuperscript{28} Neoliberals assume that conflict can be deferred, restricted or otherwise positively affected via direct international action. From there, the beliefs of neoliberals further diverge from those found in neorealism.\textsuperscript{29} Neoliberals contend that states are not purely motivated by survival but by broader self-interest.\textsuperscript{30} Out of that self-interest, states will align themselves with others and/or with international organizations to achieve their goals.\textsuperscript{31} Another facet of neoliberalism is that many of its adherents assume that economic interdependence can act to prevent conflict as states are not willing to risk their economic wellbeing when peaceful measures are still possible.\textsuperscript{32} States operating under neoliberal logic seek absolute gains. In the case of the DPRK’s proliferation, the IC should use neoliberal language to assuage the DPRK’s neorealist concerns.

Following the introduction (Chapter 1), this Creative Research Project began with an argument in favor a diplomatic resolution of the proliferation situation in the DPRK (Chapter 2). It then covered the relevant history of nuclear proliferation in both Iran and the DPRK (Chapter 3 and 4, respectively) for contextual background. That background allowed comparisons to be made between the circumstances that drove the two to proliferate. It then outlined the current international *corpus juris* treating upon nuclear weapons, nuclear war and nuclear proliferation (Chapter 5). Following that, it covered the JCPOA’s implementation, creation and execution (Chapter 6). That analysis formed a basis for understanding the strengths, weaknesses and

\begin{itemize}
  \item \textsuperscript{27} *id.*
  \item \textsuperscript{28} *id.*
  \item \textsuperscript{29} Bordner, *supra*.
  \item \textsuperscript{30} *id.*
  \item \textsuperscript{32} *id.*
\end{itemize}
omissions at each stage of the agreement’s lifecycle. Next, the lessons learned from the JCPOA were explained (Chapter 7). From there, the process and method of applying the lessons learned to an agreement with the DPRK were explored (Chapter 8). Finally, this effort concluded with a consolidation of the suggested elements, learned from the JCPOA, that should be applied to an agreement with the DPRK (Chapter 9).

The body of this Creative Research Project is supplemented by the addition of six addenda to clarify and bolster the information herein. Addendum One consists of an annotated copy of the relevant sections of the JCPOA. Addendum Two consists of a list of selected fundamental requirements that any proposed agreement with the DPRK should have. Addendum Three contains technical and legal definitions and explanations that will assist in deeper understanding of the technical nature of counterproliferation efforts. Addendum Four will list suggested further readings on the topic of nuclear disarmament, counterproliferation, and nonproliferation.

The criticality of nuclear proliferation demands that every effort be taken to ensure that the instruments related to the prevention thereof are crafted as flawlessly as possible. Through painstaking analysis of the JCPOA, at each stage of its lifecycle, the IC can learn lessons that, when applied to an instrument of international law regarding the DPRK, could more effectively counter the proliferation of nuclear weapons.
CHAPTER 2: THE CASE FOR A PEACEFUL RESOLUTION

“Blessed are the peacemakers: for they shall be called the children of God.”

Beginning in the summer of 2017, relations between the DPRK and much of the world deteriorated from an already poor initial level. Following the test of two Hwasong-14 Intercontinental Ballistic Missiles in July 2017, the IC reacted with harsh condemnation. Fitted with a nuclear warhead, the Hwasong-14 could possibly have a range well over 6,000 miles and reach a significant portion of the US mainland. On August 5, 2017, the UN Security Council unanimously passed Resolution 2371 (2017) that prohibited any trade with the DPRK for coal, iron, iron ore, seafood, lead and lead ore and limited the number of expatriate workers from the DPRK. Those sanctions are likely to eviscerate a full third of the DPRK’s exports.

The support of both Russia and China for Resolution 2371 suggests that the sanctions may be more effective than many past sanctions have been. That impact is a result of the fact that both China and Russia are the DPRK’s leading trading partners and thus, the economic

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33 Matthew 5:9 (King James).
39 id.
pressure will be more profoundly felt in the DPRK.\textsuperscript{40} The Ambassador to the UN from the U.S., Nikki Haley stated that the sanctions:

\begin{quote}
…put the dictator of the Democratic People’s Republic of Korea on notice by matching its words with action. Through the resolution, the Council had taken a strong and united step, increasing the penalty of that country’s ballistic missile activity to a whole new level. The text represented the single largest package of economic sanctions ever levelled at the regime. The price it would pay would be one third of its exports and hard currency. Furthermore, the resolution represented the most stringent sanctions on any country in years.\textsuperscript{41}
\end{quote}

President of the United States, Donald Trump, and North Korean leader Kim Jong Un thereinafter engaged in a rhetorical quarrel, both threatening the other using escalating intimidations.\textsuperscript{42} The exchange led many to believe that war (whether conventional or otherwise) was much more realistic than had previously been thought.\textsuperscript{43} However, many experts caution that conflict is not as probable as the hype may suggest.\textsuperscript{44} Even considering the heightened tensions, the IC should moderate its use of incendiary language and seek a diplomatic and peaceful resolution to the problem. The reasons why a peaceful resolution would be preferable are relatively basic.

Any war on the Korean Peninsula is likely to be one of the largest military conflicts in more than the past 70 years. The De-Militarized Zone between the DPRK and the Republic of Korea (colloquially referred to as South Korea, hereinafter ROK) is the most heavily fortified

\begin{flushright}
\textsuperscript{40} \textit{id.}
\textsuperscript{42} Merica, Liptak, & Dewan, supra.
\textsuperscript{44} \textit{id.}
\end{flushright}
border on earth.\textsuperscript{45} Predictions about the number of deaths range from a few thousand in the first artillery salvo to tens-of-millions over the course of a long protracted urban conflict in which both militaries are backed by thousands of artillery pieces and hundreds of combat-aircraft.\textsuperscript{46}

In the most conservative estimates, a preemptive conventional strike by the DPRK would be forced to use the three traversable land routes (all valleys) into the South, all of which are thoroughly defended by U.S. and ROK forces.\textsuperscript{47} The DPRK’s military would likely suffer tremendous losses as its forces file down defined and pre-targeted avenues of approach.\textsuperscript{48} The ROK’s combined artillery and air power, and the prepositioned U.S. forces would likely inflict 20\% casualties per day.\textsuperscript{49} The pre-war planning would likely call for specifically targeting fuel resupply, thus stripping the DPRK’s forces of critical mobility.\textsuperscript{50} Under that scenario, the DPRK is likely to lose potentially hundreds-of-thousands of troops and decimate its conventional forces. Because of the DPRK’s dismal prospects of a conventional attack targeting military, some experts suspect the DPRK might resort to conventional, chemical, or biological bombardment of Seoul and its surrounding suburbs.\textsuperscript{51} Estimates thereunder reach up to 300,000 dead in the first few days of fighting.\textsuperscript{52} Of note is the fact that limited strikes against the DPRK’s nuclear capability could cause it to respond with a conventional (or chemical, biological, nuclear) attack

\begin{footnotes}
\textsuperscript{46} \textit{id}.
\textsuperscript{48} \textit{id}.
\textsuperscript{49} \textit{id}.
\textsuperscript{50} \textit{id}.
\textsuperscript{52} \textit{id}.
\end{footnotes}
against the South.\textsuperscript{53} Therefore, action similar to that taken against the Syrian chemical weapons capability on April 6\textsuperscript{th}, 2017 would probably have drastic repercussions.\textsuperscript{54}

Any military action on the peninsula will result, eventually, in the DPRK’s defeat and removal of the Kim government.\textsuperscript{55} Suffice it to say, a resumption of any conflict on the peninsula would be deadlier than either side probably wants. In view of the facts that the IC can eventually defeat the DPRK in conventional (or other forms of) conflict and the DPRK is motivated by the survival of its government, the IC can coerce the DPRK into adopting an instrument of international law affecting the denuclearization thereof.

The DPRK faces a neorealist conundrum: it seeks to survive an anarchic international system that seems to be arraying itself against the DPRK. Under neorealist logic, the DPRK is primarily motivated by its regime’s survival. Therefore, it can be expected to resort to any means to protect its government.

The DPRK also lacks the economic fortitude and natural resources to sustain itself domestically. The DPRK’s Gross Domestic Product (Purchasing Power Parity, hereinafter GDP) amounts to an estimated $40 billion U.S. Dollars (USD), 21.6\% of which comes from agriculture, 46.2\% stemming from industry, and 32.2\% from services.\textsuperscript{56} Due to the DPRK’s small economic foundation, sanctions and other forms of international pressure can be (if carefully targeted) very useful at forcing capitulation. In 2015, the DPRK boasted an estimated

\textsuperscript{53} \textit{id.}
\textsuperscript{56} \textit{Central Intelligence Agency, World Factbook: North Korea; Economy} (2017).
$4.125 billion USD export portfolio, 76.3% of which was with China.\textsuperscript{57} The full effect of the August 5, 2017 UN sanctions will not be discernable for some time, but a 1/3 reduction in export income is clearly going to have a major impact throughout the DPRK’s economy. The preceding facts induce a situation wherein the IC can slowly and carefully increase international pressure on the DPRK, which will, hopefully, lead to submission, thus avoiding the risks of war.

The IC faces a conundrum of its own; the denuclearization of the DPRK may be its primary goal but there are other concerns, like humanitarian, civil, and human rights issues, and violation of other international laws.\textsuperscript{58} The neoliberal logic, with which the IC has been approaching the proliferation situation in the DPRK, demands that the IC work with the DPRK to come to an agreement that effectively and permanently denuclearizes the DPRK while allowing the regime continued existence. The problem therein is that, if the IC allows the DPRK to exist after disarmament, the situation may reintroduce itself over human rights and like concerns. The instrument through which the IC pursues disarmament could also help with the human rights issues, if it can be used to nudge the DPRK into a less abusive posture towards its citizens.\textsuperscript{59} In getting the DPRK to the table for the denuclearization, it is possible for the IC to also begin the process of coercively encouraging the DPRK to gradually become less totalitarian and repressive.\textsuperscript{60}

The long-term impact of using military force to denuclearize the DPRK is largely lost in the fog of war. Even if battlefield causalities can be kept as low as the most conservative

\begin{footnotesize}
\begin{enumerate}
\item id.
\item UN Commission of Inquiry on Human Rights in the Democratic People’s Republic of Korea, MANDATE dated Mar. 21 2013, at para. 7.
\item id.
\end{enumerate}
\end{footnotesize}
estimates guess, the long-term impacts of a war could be devastating. Beyond the potentially catastrophic loss of life that a war could cause, the economic and humanitarian concerns associated with conflict are also substantial. The 1950-1953 Korean War killed 1.2 million South Koreans and induced an over 80% drop in the ROK’s GDP. The increase in economic interdependence between the major Pacific states since that war is also a cause for much concern. A war that endangers the economic and logistical lifelines of even one of the major Pacific trade powers risks destabilizing others. Additionally, some estimates for people who would be displaced by conflict on the peninsula reach up to tens-of-millions. In that event, the refugees from the conflict would be more than double the combined refugee populations from Syria, Afghanistan, the Lake Chad basin, South Sudan, and Somalia. Suffice it to say that the first, second and third order effects of denuclearization of the DRPK by means of military force could ferment the largest humanitarian, economic and socio-political crisis in living memory.

On the other hand, even in the event of a complete failure of the IC to come to a counterproliferation agreement with DPRK, nothing is lost but the time required for the discussions to run their course. While the DPRK could use that opportunity to bolster its defenses and further its nuclear program, any advancement in the ability to project that force is subject to debate. As the situation now stands, the DPRK’s army is just short of 1.2 million people strong (with another 7.7 million reservists) supported by 3500 battle tanks, 72

submarines, more than 300 helicopters, more than 560 combat-aircraft and over 20,000 artillery pieces.\textsuperscript{64} Any time the DPRK earns by undertaking counterproliferation negotiations in bad faith is not likely to make any substantial improvements in its conventional capability. Advancements in the DPRK’s nuclear delivery and weapons systems are where the IC fears wasting time on diplomacy.\textsuperscript{65} Proponents of that theory assume, for each day that passes without action on the part of the IC, the DPRK can increase the yield of its weapons and the range of its delivery systems. This would put ever more of the world at risk of sudden nuclear annihilation. By pushing for a diplomatic solution, the IC may be allowing the DPRK to become a full nuclear power, which would drastically alter the calculus moving forward. While diplomacy may not be a perfect solution, it will probably work better and kill a lot less people than any attempt to use force to denuclearize the DPRK.

A diplomatic resolution to the situation in the DPRK may be similar in many respects to the solution achieved in Iran by the JCPOA. Even the most steadfast opponents of the JCPOA are hard-pressed to argue that the situation would be improved if the denuclearization of Iran was induced through protracted warfare. By leaning on the lessons learned in the JCPOA, the crafters of an instrument of international law regarding counterproliferation within the DPRK can avoid many of the mistakes made in the JCPOA.

The question of whether the denuclearization of the DPRK should be delayed while a diplomatic solution can be reached or whether the IC should press forward with military options hinges on objective assessment of the situation. Essentially, it boils down to two other


fundamental questions: What does victory in this situation look like, and, what is the IC willing to pay to achieve that victory. If the answer to the first question is simply nuclear-disarmament of the DRPK, then the answer to the second becomes paramount: suffer all the ill effects of war or run the risk that DPRK will fully develop its nuclear weapons and the means to deliver them.

Even if the DPRK achieves full nuclear capability, it is unlikely to start a war with the IC because it is motivated primarily by its own survival (under neorealist logic) and a nuclear strike is no assurance it will survive. The use of force to denuclearize the DPRK will result assuredly in the loss of many lives, disruption of a substantial part of the global economy and the displacement of an unprecedented number of persons. Therefore, it is better to run the risk of delay for a diplomatic solution, wherein the DPRK may further its nuclear capability, than to take military action, wherein all the ill effects of war discussed above may occur.
CHAPTER 3: RELEVANT TIMELINE OF IRANIAN NUCLEAR PROLIFERATION

...Iran’s goal is not to become another North Korea – a nuclear weapons possessor but a pariah in the international community – but rather Brazil or Japan, a technological powerhouse with the capacity to develop nuclear weapons if the political winds were to shift, while remaining a non-nuclear-weapon state under the NPT.66

The history of Iranian nuclear proliferation up to the point of implementation of the JCPOA bears review as its effect upon and culmination in the JCPOA may shed light on the interrelation of situation-to-agreement content. Review thereof is necessary for writing any counterproliferation instrument aimed at ensuring the DPRK’s denuclearization. Furthermore, the history of Iran’s proliferation attempts bears heavily on the JCPOA’s content and any lessons learned therefrom. As applied to the DPRK, the correlation of circumstance to agreement content frames the lessons learned.

Iranian investment in nuclear technology began in the 1950s with U.S. assistance.67 The U.S. Atoms for Peace program allowed technology to proliferate to the Shah of Iran.68 Iran’s first nuclear reactor, the Tehran Research Reactor (TRR), was built by the U.S. in November 1967; a 5-megawatt facility, it supplied Highly Enriched Uranium.69 The TRR originally used

66 MOHAMED ELBARADEI, THE AGE OF DECEPTION: NUCLEAR DIPLOMACY IN TREACHEROUS TIMES 212 (1st ed. 2011) (The quoted assertion, written in 2011, is suggestive of the fact that Iran’s goals may have been different from those of the DPRK. The circumstances that lead to the codification of the JCPOA are still relevant in analysis of lessons learned therein).
68 Ariana Rowberry, Sixty Years of “Atoms for Peace” and Iran’s Nuclear Program. Brookings at ¶ 1 (Dec. 18, 2013) retrieved from https://www.brookings.edu/blog/up-front/2013/12/18/sixty-years-of-atoms-for-peace-and-irans-nuclear-program/.
69 Kelsey Davenport, Timeline of Nuclear Diplomacy With Iran, ARMS CONTROL ASSOCIATION (Jul. 2017) retrieved from https://www.armscontrol.org/factsheet/Timeline-of-Nuclear-Diplomacy-With-Iran (Uranium that is enriched so that it contains over 20% of the isotope U-235, hereinafter HEU).
U.S. supplied 93% HEU, which is above the threshold for weapons grade material. In 1993, the TRR was converted to run on 20% U-235.

In February 1970, the Iranian Parliament ratified the NPT as a non-nuclear weapons state. The Shah then established the Atomic Energy Organization of Iran (AEOI) in 1974; its mandate was to facilitate the infrastructure development required to generate 23,000 megawatts over the next 20 years. This plan included 23 powerplants and a complete fuel cycle. Between 1973 and 1979, Iran invested heavily in training and partnerships with France, Namibia, South Africa, and others.

In 1979, the Iranian Revolution toppled the Shah and installed Ayatollah Ruhollah Khomeini as the leader of the Islamic Republic. An opponent of nuclear technology, Khomeini stalled much of the nation’s nuclear power program, causing many skilled people to flee, a fact that was potentially exacerbated by the 1980 invasion by Iraq. Additionally, the seizure of the U.S. embassy in Tehran and related hostage situation led to the severance of ties between the U.S. and Iran, thus cutting off a major source of support for Iranian nuclear development. In 1984, the U.S. added Iran to the list of state sponsors of terrorism, which effectively led to the imposition of sweeping economic sanctions. Meanwhile Iran and Iraq were embroiled in a

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71 Davenport, *supra*.
72 *id*.
73 *id*.
74 *id* (the fuel cycle is one of the major hurdles to the cultivation of a nuclear weapons program, thus, it is one of the major concerns in terms of counter/non-proliferation).
75 NUCLEAR THREAT INITIATIVE, *supra*.
76 *id*.
77 *id*.
78 Davenport, *supra*.
brutal war that lasted between 1980 and 1988 in which chemical weapons were heavily used.\textsuperscript{79}

Khomeini developed an interest in pursuit of nuclear power around 1984.\textsuperscript{80} Sometime in 1987, Iran received the plans for P-1 centrifuges from the A. Q. Khan network, which enabled marked advancement of its enrichment capability.\textsuperscript{81} Following its war with Iraq, Iran undertook a renovation of its nuclear program that included agreements with Pakistan, China, and Russia. Fearing that Iran might have been attempting to proliferate covertly, the U.S. passed the Iran-Iraq Nonproliferation Act of 1992.\textsuperscript{82} That law stated:

> It shall be the policy of the United States to oppose any transfer to Iran or Iraq of any goods or technology, including dual-use goods or technology, wherever there is reason to believe that such transfer could contribute to that country's acquiring chemical, biological, nuclear, or advanced conventional weapons.\textsuperscript{83}

The Act initiated the U.S.’ counterproliferation efforts towards Iran which included pressuring suppliers to forgo or limit cooperation with Iran.\textsuperscript{84} Also in 1992, Iran and Russia signed a bilateral agreement which was followed by an even stronger accord in 1995.\textsuperscript{85} That agreement

\textsuperscript{80} NUCLEAR THREAT INITIATIVE, supra.
\textsuperscript{81} Davenport, supra. (The R-1 centrifuge is an advanced design for enriching uranium from the naturally occurring 0.7 percent U-235 up to the 4-5% required for reactors or the 90%+ required for weapons. The more advanced the design the more efficiently the centrifuge can enrich the material. Even with more advanced enrichment equipment the process requires many successive cycles through the centrifuges. The A. Q. Khan network was based around the efforts of Dr. Abdul Qadeer Khan, the former leader of Pakistan’s nuclear weapons program, In 2004 he confessed to selling nuclear weapons technology to Iran, the DPRK and Libya, see generally, Shi-chin Lin, The AQ Khan Revelations and Subsequent Changes to Pakistani Export Controls, NUCLEAR THREAT INITIATIVE, at ¶ 1 (Dec. 1, 2004) retrieved from http://www.nti.org/analysis/articles/aq-khan-revelations/).
\textsuperscript{82} Davenport, supra.
\textsuperscript{84} NUCLEAR THREAT INITIATIVE, supra.
\textsuperscript{85} id.
included offers for the construction of a major reactor and a fuel fabrication facility. Upon hearing about the agreement, then-U.S. President Bill Clinton brokered a deal with then-Russian President Boris Yeltsin to scale back Russian-Iranian cooperation. However, it is believed that several individual Russian scientists assisted the advancement of Iranian proliferation efforts even after the agreement. With the assistance of the Russian scientists, Iran covertly built nuclear facilities at Arak and Natanz. The existence of those facilities was brought the IC’s attention through a press conference by the political wing of the Mujahedeen-e Khaliq (MeK). The ouster of the Arak and Natanz facilities garnered the IC’s attention.

In 2003, the IAEA’s Board of Governors adopted a resolution demanding that Iran suspend fuel processing. Entitled Implementation of the NPT Safeguards Agreement in the Islamic Republic of Iran, that resolution also called on Iran to both declare all material related to uranium processing and allow inspectors to conduct environmental sampling at will, all by October 31, 2003. In November 2003, the IAEA adopted a resolution applauding Iran’s submission to the inspections and adoption of Additional Protocols.

By June 2004, Iran had run afoul of the IAEA inspectors and drawn international rebuke. In turn, Iran refused to suspend all enrichment activities as promised. After being threatened with further sanctions, Iran agreed to meet with the EU-3 (France, Germany, and the

86 *id.*
87 *id.*
88 *id.*
89 Davenport, *supra.*
90 *id.*
91 *id.*
94 Davenport, *supra.*
95 *id.*
United Kingdom). That meeting initially resulted in the Paris Agreement. Thereunder, Iran agreed to suspend its enrichment and centrifuge programs while negotiations proceeded.

In February 2005, Russia and Iran signed an agreement for a nuclear fuel transfer program, which aggravated the U.S. Later that year, Iran began producing uranium hexafluoride (UF₆), a gaseous suspension (at certain temperatures) that allows U-235 to be separated centrifugally from U-238. The EU-3 halted the negotiations that began in 2004, and the IAEA responded in September with a resolution that stated:

…the history of concealment of Iran’s nuclear activities referred to in the Director General’s report, the nature of these activities, issues brought to light in the course of the Agency’s verification of declarations made by Iran since September 2002 and the resulting absence of confidence that Iran’s nuclear programme is exclusively for peaceful purposes have given rise to questions that are within the competence of the Security Council, as the organ bearing the main responsibility for the maintenance of international peace and security…

Resolution 2005-77 began to shift the onus for responding to proliferation concerns on the UN Security Council. Then-U.S. President George W. Bush responded to Iran’s action with Executive Order 13382, which stated:

… in order to take additional steps with respect to the national emergency […]

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96 Nuclear Threat Initiative, supra.
97 IAEA, Information Circular dated Nov. 26, 2004, Communication dated 26 November 2004 received from the Permanent Representatives of France, Germany, the Islamic Republic of Iran and the United Kingdom concerning the agreement signed in Paris on 15 November 2004, at 4, U.N. Doc. INFCIRC/637, retrieved from https://www.iaea.org/sites/default/files/publications/documents/infcircs/2004/infcirc637.pdf (the pagination of the Information Circular is at the top right of the page while the pagination of the Agreement’s text is at the lower right, the pagination of the Information Circular is used herein).
99 Davenport, supra.
100 id (UF₆ is a caustically hydro-reactive molecule of one uranium atom bonded with six fluorene atoms, refer to the Fuel Cycle section in Addendum 3 for more information).
regarding the proliferation of weapons of mass destruction and the means of delivering them […] all property and interests in property of the following persons, that are in the United States, that hereafter come within the United States, or that are or hereafter come within the possession or control of United States persons, are blocked and may not be transferred, paid, exported, withdrawn, or otherwise dealt in…

Executive Order 13382 blocked the assets of individuals suspected of assisting in the proliferation of nuclear weapons.

The IAEA officially referred the Iran proliferation situation to the Security Council with Resolution 2006-14 on February 4, 2005. Two days later, Iran announced it would stop voluntary compliance with the Additional Protocols and other non-legally binding instruments. In June, the P5+1 (China, France, Germany, Russia, the United Kingdom and the U.S.) proposed a framework agreement under which the IC would provide Iran with leading peaceful nuclear technology if it permanently suspended enrichment and resumed the Additional Protocols. Iran declined the offer; the UN Security Council adopted Resolution 1696, which made the cessation of Iranian enrichment activities legally binding, proscribed the transfer of missile and nuclear technologies to Iran, and seized assets of individuals suspected of being involved in Iranian proliferation efforts. Iran ignored the resolution and proceeded with its enrichment activities, which drove the UN Security Council to adopt Resolution 1737 (2006).

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103 NUCLEAR THREAT INITIATIVE, supra.
105 Davenport, supra.
106 NUCLEAR THREAT INITIATIVE, supra.
107 id.
In June 2008, the P5+1 offered a renewed deal to Iran wherein the IC would supply economic incentives, Light Water Reactor designs and a guaranteed fuel supply for cessation of enrichment activities.\textsuperscript{109} Iran declined the offer. The UN Security Council then adopted Resolution 1835, which reaffirmed previous demands for cessation.\textsuperscript{110} Late in 2009, Iran notified the IAEA that it was constructing a second enrichment facility in a tunnel complex on a military base outside of Qom, Iran.\textsuperscript{111} The facility was named the Fordow Fuel Enrichment Plant (hereinafter Fordow) and was designed to run almost 2,800 centrifuges.\textsuperscript{112} Many considered the circumstances surrounding Fordow to be highly indicative of a covert weapons program.\textsuperscript{113} Also in 2009, Iran conducted a satellite launch that indicated it had stridently advanced its missile technology.\textsuperscript{114}

Over the next four years, Iran, the IAEA, and the IC at large entered a period of oscillating talks, recusals, offers, and nuclear technological advancement that seemed to be ineffective excepting only the steady advancement of Iran’s nuclear program.\textsuperscript{115} Throughout 2008 to 2013, the IC incrementally increased sanctions on Iran, which devastated the Iranian economy. Iran suffered up to 300 percent currency devaluation due to the sanctions.\textsuperscript{116} Finally, in November 2013, Iran and the P5+1 reconvened in Geneva, where the Joint Plan of Action (JPOA) was signed.\textsuperscript{117}

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\textsuperscript{109} Nuclear Threat Initiative, \textit{supra}.
\textsuperscript{110} S.C. Res. 1835 ¶ 4 (Sept. 27, 2008).
\textsuperscript{111} Nuclear Threat Initiative, \textit{supra}.
\textsuperscript{112} \textit{id}.
\textsuperscript{113} \textit{id}.
\textsuperscript{114} Davenport, \textit{supra}.
\textsuperscript{115} \textit{id}.
\textsuperscript{117} Davenport, \textit{supra}.
The JPOA outlined a 6 month, one-phase agreement and contained the framework for a comprehensive agreement.\textsuperscript{118} Under the JPOA, Iran was required to take positive steps towards scaling back its ability to proliferate covertly and the IC was required to take positive steps to lessen the impact of sanctions.\textsuperscript{119} Over the next two years, the P5+1 and Iran met several times to coordinate the details of the comprehensive agreement.\textsuperscript{120} On July 14, 2015, the JCPOA was announced by Iran and the P5+1.\textsuperscript{121} Six days later, the UN Security Council unanimously passed Resolution 2231 (2015) endorsing the deal.\textsuperscript{122} Implementation Day was achieved on January 16, 2016.\textsuperscript{123} Between October 2015 and March 2016, Iran conducted four missile launches, which were considered by many to be violative of UN resolutions because the missile launches could be retrofitted to deliver nuclear weapons.\textsuperscript{124}

The arc of Iran’s nuclear proliferation history is lengthy and complicated. However, by comparing that history with the JCPOA’s implementation, content and execution, lessons can be learned that can be tailored to improve efforts aimed at combatting the DPRK’s proliferation efforts. Even though many have objected to the JCPOA, the IAEA’s reports and the U.S. Department of State quarterly recertification reports evidence adherence to the JCPOA’s intent and spirit.

\textsuperscript{118} id.
\textsuperscript{119} id.
\textsuperscript{120} id.
\textsuperscript{121} id.
\textsuperscript{122} S.C. Res. 2231 ¶ 7-8 (Jul. 20, 2015).
\textsuperscript{123} Davenport, \textit{supra}.
\textsuperscript{124} id.
CHAPTER 4: RELEVANT TIMELINE OF THE DPRK’S NUCLEAR PROLIFERATION

Should the U.S. dare to show even the slightest sign of attempt to remove our supreme leadership, we will strike a merciless blow at the heart of the U.S. with our powerful nuclear hammer, honed and hardened over time.\(^{125}\)

Just as the JCPOA is inextricably tied to Iran’s proliferation history and lessons learned therefrom must draw on the conditions which precipitated the agreement, application of those lessons to counterproliferation efforts aimed at the JCPOA requires review of the DPRK’s proliferation history. By examining the relevant portions of the DPRK’s proliferation history, the IC can tailor the lessons learned from the JCPOA to best combat the DPRK’s weapons program through an instrument of international law.

Legal issues involving counterproliferation began in 1985 when the DPRK acceded to the NPT as a non-nuclear weapons state.\(^{126}\) However, interest within the DPRK for development of a nuclear capability began much earlier than that.\(^{127}\) The DPRK missed the 18-month deadline for establishment of a safeguards agreement with the IAEA, citing the U.S. weapons deployments as a concern.\(^{128}\) In 1991, ROK President Roh Tae Woo announced the denuclearization of the Korean Peninsula and publicly promised the ROK would not produce, retain, store, deploy or use nuclear weapons, nor would it enrich uranium.\(^{129}\) The U.S. also

\(^{125}\) Kevin Lui, *North Korea Vows to Strike U.S With a 'Powerful Nuclear Hammer' If Kim Jong Un's Regime is Threatened*, TIME MAG. (Jul. 25, 2017) retrieved from http://time.com/4873973/north-korea-nuclear-weapons-kim-jong-un/ (the quote in Lui’s article is attributed to a spokesperson of the DPRK’s foreign ministry and is cited to the Korean Central News Agency).


\(^{128}\) Davenport 2, *supra*.

\(^{129}\) *id.*
alleviated the primary concerns that the DPRK had expressed in avoiding the IAEA safeguards requirement. In late 1991, both Koreas signed a joint declaration on the denuclearization of the entire peninsula.

Shortly thereafter, the DPRK concluded its safeguards agreement with the IAEA. In March 1992, the U.S. imposed sanctions on two North Korean manufacturing firms (Lyongaksan Machineries and Equipment Export Corporation and Changgwang Sinyong Corporation) in response to their missile related proliferation activities. When the DPRK submitted the required declaration to the IAEA on May 4, 1992, it declared seven sites and admitted to having 90 grams of plutonium allegedly recovered from defective fuel rods. In June, the U.S. increased the severity of the sanctions imposed in March in an effort to dissuade the DPRK from pursuing missile technology that could potentially deliver a nuclear warhead.

By September, the IAEA reported discrepancies between the inspection findings and the initial declaration submitted by the DPRK in May. By February 1993, the IAEA demanded special inspections of two nuclear waste storage sites in the DPRK. The DPRK declined and announced its intent to withdraw (following the mandatory 3 month period) from the NPT under Article X on Mar. 12, 1993. On April 1, 1993 the IAEA reported that it could not confirm the DPRK was complying with its safeguards agreement.

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130 id.
131 id.
132 id.
133 id.
134 id.
135 id.
136 id.
137 id.
138 id (the validity of the DPRK’s withdrawal from the NPT is still an unresolved question in international law).
139 id.
In June 1993, just prior the legal effect of the Article X withdrawal, the DPRK agreed to suspend its withdrawal following talks with the U.S. in New York.\textsuperscript{140} In exchange for the DPRK’s withdrawal suspension, the U.S. agreed to forgo the use of force and any interference in the DPRK’s internal affairs.\textsuperscript{141} In late 1993, the CIA reported that the DPRK may have produced enough plutonium to build two weapons.\textsuperscript{142} By January 1994, the CIA concluded the plutonium may have been utilized to fabricate two weapons.\textsuperscript{143} In February, the DPRK and IAEA came to a inspections agreement which facilitated the return of weapons inspectors to all seven of its facilities.\textsuperscript{144} However, the DPRK refused to allow the inspector access to the plutonium reprocessing plant at Yongbyon. This refusal led to the passage of an IAEA resolution urging the DPRK to do so.\textsuperscript{145}

In May, the IAEA reported that the DPRK had removed spent fuel from a research reactor without international monitors being present in violation of the safeguards agreement.\textsuperscript{146} On June 13, 1994, the DPRK withdrew from the IAEA; that body stated that the safeguards agreement remained in effect.\textsuperscript{147} The U.S. sent former president Jimmy Carter as a special envoy to negotiate a deal with the DPRK.\textsuperscript{148} A agreement was reached in which the DPRK was

\textsuperscript{140} Joint Statement of the Democratic People’s Republic of Korea and the United States of America, dated Jun 11, 1993, retrieved from http://nautilus.org/wp-content/uploads/2011/12/CanKor_VTK_1993_06_11_joint_statement_dprk_usa.pdf (the fact that the DPRK’s withdrawal was only \textit{suspended} becomes important in their later proliferation efforts).
\textsuperscript{141} \textit{id}.
\textsuperscript{142} Davenport 2, supra.
\textsuperscript{143} \textit{id}.
\textsuperscript{144} \textit{id}.
\textsuperscript{145} \textit{id}.
\textsuperscript{146} \textit{id} (Safeguards Agreements will be discussed later in this project).
\textsuperscript{147} \textit{id}.
\textsuperscript{148} \textit{id}.
to pause its nuclear program and resume talks with the U.S.\textsuperscript{149} Kim Il Sung died and was succeeded by his son, Kim Jong Il, on July 9, 1994.\textsuperscript{150} An agreed statement was signed between the U.S. and the DPRK in August 1994; it established a simultaneous three-phase process for cessation of the DPRK’s nuclear program and resumption of normalized relations with the U.S.\textsuperscript{151} Therein, the U.S. promised to assist in building Light Water Reactors (LWR), in the DPRK thus reducing the likelihood of proliferation.\textsuperscript{152} Talks in Geneva concluded in October 1994 with the signing of the Agreed Framework.\textsuperscript{153}

Under the Agreed Framework, the DPRK was to have: (a) halted use and construction of proliferation-susceptible Graphite Moderated Reactors (GMR), (b) allowed IAEA special inspections, and (c) removed 8,000 spent fuel rods to Russia.\textsuperscript{154} In exchange for those concessions, the IC was to support the DPRK in the construction of two LWRs and provide heavy fuel shipments to offset energy shortages from deactivation and decommission of the GMRs.\textsuperscript{155} Financing for the two LWRs was intended to come through Korean Peninsula Energy Development Organization (KEDO), headquartered in New York City, which consisted (initially) of the U.S., Japan, the ROK.\textsuperscript{156} The U.S. also viewed the Agreed Framework as a starting point from which missile proliferation concerns could be addressed.\textsuperscript{157}

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\footnotesize{\textsuperscript{149} id.}\textsuperscript{150} id.\textsuperscript{151} id.\textsuperscript{152} id (see the Light Water Reactor section in Addendum 3 for an explanation of their proliferation resistance).\textsuperscript{153} Agreed Framework Between the United States of America and the Democratic People's Republic of Korea, U.S.-DPRK, Oct. 21, 1994, U.S.S.D. Archive retrieved from https://2001-2009.state.gov/t/ac/rls/or/2004/31009.htm (the Agreed Framework is no longer in force).\textsuperscript{154} id (see the Graphite Moderated Reactor section in Addendum 3 for an explanation of their proliferation susceptibility).\textsuperscript{155} id.\textsuperscript{156} Davenport 2, supra.\textsuperscript{157} id.}
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In November 1994, the IAEA confirmed the cessation of construction at two GMRs. Throughout early 1996, the DPRK and the U.S. worked through issues surrounding missile proliferation and related sanctions; this effort led to talks in Berlin in April 1996.¹⁵⁸ In the talks facilitated through the Agreed Framework, the U.S. reportedly insisted that the DPRK adhere to international missile controls; the DPRK responded with demands for lost missile revenue.¹⁵⁹ The following month, the U.S. imposed (largely symbolic) sanctions against parts of the DPRK’s economy that were considered missile related.¹⁶⁰ In October 1996, the DPRK prepared to test launch a Nodong missile; in response, the U.S. deployed Intelligence Reconnaissance and Surveillance (ISR) assets to Japan.¹⁶¹ Following several talks, the tests were canceled.¹⁶²

The pace of interaction between the DPRK and the IC slowed in 1997. A second round of talks took place in June wherein the U.S. urged the DPRK to not deploy the Nodong and to end sales of its Subsonic Cruise Unarmed Decoy (SCUD) missiles.¹⁶³ During those talks no agreement was reached but future talks were scheduled.¹⁶⁴ In August, the U.S. imposed new sanctions on additional organizations within the DPRK for missile proliferation.¹⁶⁵

In February 1998, the ROK’s new president, Kim Dae-jung, announced that the ROK

¹⁵⁸ *id.*
¹⁵⁹ *id.*
¹⁶¹ Davenport 2, *supra* (see the Missile Technology section of Addendum 3 for further information on missiles).
¹⁶² *id.*
¹⁶³ *id* (SCUD was originally an Air Standards Coordinating Committee [and later NATO] designation for a specific Soviet surface-to-surface missile, the term has become universal for any non-NATO surface-to-surface missile).
¹⁶⁴ *id.*
¹⁶⁵ *id.*
was willing to improve relations with the DPRK. The U.S. imposed new sanctions in April in response to the DPRK’s missile sales to Pakistan. In response, the DPRK stated it would only be willing to stop missile exports if compensated for lost revenue. On August 31, 1998, the DPRK launched a Taepo Dong-1 rocket that it claimed placed a small satellite into orbit. Japan responded by suspending a cost-sharing commitment under the Agreed Framework. The U.S. and DPRK engaged in a third round of missile-talks in October and December, which failed to make substantial progress.

In February 1999, the DPRK launched a Taepo Dong-1 missile, which, if slightly improved, could deliver small payloads (e.g. miniaturized nuclear warheads) to Alaska and Hawaii. The DPRK and the U.S. held a fourth round of talks in March, which culminated only in an agreement to meet for future talks. In September, DPRK agreed to suspend missile launches in exchange for partial sanctions abatement. Shortly thereafter, the U.S. published a review of policy toward the DPRK that recommended a poly-faceted approach involving isolation relief in reciprocal steps. An agreement for construction of the two LWRs promised in 1994 was finally concluded in December 1999.

In April 2000, the U.S. imposed new sanctions on entities within the DPRK for missile

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166 id.
167 id.
168 id.
169 id.
170 id.
171 id.
172 id (see the Miniaturization section in Addendum 3 for more information).
173 id.
174 id.
176 Davenport 2, supra.
proliferation related activities. Following developments not related to nuclear proliferation, the U.S. began lifting certain non-proliferation related sanctions in June 2000 and the DPRK reaffirmed its missile launch suspension. A fifth round of talks concluded without substantial progress in July due to the inability of the DPRK and U.S. to find common ground on missile revenue compensation. In November, another round of talks failed to culminate in any concrete progress.

In January 2001, the U.S. imposed sanctions on firms within the DPRK for missile proliferation activities with Iran. The Bush Administration simultaneously stated that it wished to further the progress of its predecessors and questioned whether the DPRK was following through on its commitments. The DPRK responded by canceling high-level talks with the ROK in March. The DPRK blamed the U.S. for the failure of the inter-Korean talks and made threats of vengeance. In May, the extension of the missile launch suspension (until 2003) and the DPRK’s desire to resume inter-Korean dialog was announced. The following month, the U.S. released a new ambitious DPRK relations-improvement strategy. Following a rocket motor test in late June, the U.S. Department of State released a statement that the test did not violate of the moratorium.

On January 29, 2002, President Bush criticized the DPRK for missile proliferation and
human rights abuses, naming it among an *axis of evil*. However, the administration acknowledged the U.S. was still open to dialogue. In April President Bush did not recertify the DPRK’s compliance with the Agreed Framework, but allowed funding for KEDO to continue. The U.S. canceled its delegates’ trips due to missed meetings and a naval skirmish between the DPRK and ROK. The DPRK indefinitely extended its missile test suspension following an agreement with Japan in September. During an October visit from a high-level state department official, the DPRK acknowledged possession of a covert nuclear weapons program. During the following month, shipment of heavy oil from the IC to the DPRK under the Agreed Framework were stopped.

On November 29, 2002, the IAEA adopted Resolution 2002/33 demanding the DPRK explain its enrichment program. The DPRK refused, calling the IAEA biased toward the U.S. Naval forces of Spain and the U.S. interdicted a shipment of SCUD missiles in transit from the DPRK to Yemen but lacked the legal authority to seize the cargo in early December. Shortly thereafter, the DPRK announced it would resume operations at its nuclear facilities and demanded the removal of IAEA safeguards. By the end of December, the DPRK had

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188 George W. Bush, President of the United States, *State of the Union Address*, 21 (Jan. 29, 2002).
189 *id* at ¶ 16.
190 Davenport 2, *supra*.
191 *id*.
192 *id*.
193 *id*.
194 *id*.
196 Davenport 2, *supra*.
197 *id*.
198 *id*.
removed the IAEA seals, disrupted monitoring equipment, and ejected IAEA inspectors.\(^\text{199}\)

On January 10, 2003, the DPRK announced its withdrawal from the NPT effective the following day, relying on the 89 days of notice in its previous withdrawal (in 1993) as sufficient for the Article X requirement.\(^\text{200}\) Shortly thereafter, the DPRK announced it might resume missile test launches.\(^\text{201}\) By February, the U.S. had evidence that operations had resumed at some DPRK nuclear facilities; the IAEA responded by referring the situation to the Security Council.\(^\text{202}\) During trilateral talks in Beijing between the DPRK, U.S., and China, the DPRK admitted to possessing nuclear weapons, but declared that it would willingly destroy them in exchange for substantial returns from the IC.\(^\text{203}\) In August, the first round of Six-Party Talks were held Beijing with no appreciable outcome.\(^\text{204}\) President Bush cut funding for KEDO from a 2002 high of $90.5 million to $3.72 million, which supported only KEDO’s administrative costs.\(^\text{205}\) By the end of November, KEDO had suspended construction of the two LWRs originally promised in the Agreed Framework.\(^\text{206}\)

In February 2004, a second round of Six-Party Talks were held; no progress was made beyond the agreement to hold more talks.\(^\text{207}\) The third round of Six-Party Talks were held in June, wherein the U.S. and DPRK haggled over a solution to the crisis but did not reach an

\(^{199}\) *id.*

\(^{200}\) *id.*

\(^{201}\) *id.*


\(^{203}\) Davenport 2, *supra.*

\(^{204}\) *id.*


\(^{206}\) Davenport 2, *supra.*

\(^{207}\) *id.*
agreement.\textsuperscript{208} In November, KEDO announced an extension of the LWR construction suspension.\textsuperscript{209} Throughout 2005, talks, escalating rhetoric, threats, and sanctions rendered the hope of denuclearization ever more unlikely.\textsuperscript{210}

On June 1, 2006, KEDO announced the formal termination of work on the promised LWRs.\textsuperscript{211} The DPRK responded by launching a series of missiles on the July 4 and 5, 2004.\textsuperscript{212} Ten days later, the UN Security Council passed Resolution 1695, which condemned the launches.\textsuperscript{213} On October 3, 2006, the DPRK announced it would conduct a nuclear test on a date and at a location when and where safety could be guaranteed and that it still sought denuclearization of the peninsula.\textsuperscript{214} Six days later, a test was conducted of an estimated sub kiloton device.\textsuperscript{215} Five days later, the UN Security Council adopted Resolution 1718, which called for a cessation of testing and resumption of the Six-Party Talks.\textsuperscript{216} The Talks resumed in December but resulted in nothing more than an agreement to meet again in the near future.\textsuperscript{217}

In early 2007, a new round of the Six-Party Talks concluded with a plan for future action wherein the DPRK would concede to IAEA and IC requests in exchange for sanctions relief and heavy oil.\textsuperscript{218} Throughout early 2007, the Six-Party Talks ebbed and flowed over several issues including the release of $25 million seized by the U.S.\textsuperscript{219} The DPRK shut down the Yongbyon

\textsuperscript{208} id.
\textsuperscript{209} id.
\textsuperscript{210} id.
\textsuperscript{211} id.
\textsuperscript{212} id.
\textsuperscript{213} S.C. Res. 1695, ¶ 1 (Jul. 15, 2006).
\textsuperscript{214} Davenport 2, supra.
\textsuperscript{215} id (some estimates range up to a full 15 kilotons, see Yield section in Addendum 3 for more information).
\textsuperscript{216} S.C. Res. 1718, ¶ 3-17 (Oct. 14, 2006).
\textsuperscript{217} Davenport 2, supra.
\textsuperscript{218} id.
\textsuperscript{219} id.
facility, which was confirmed by the IAEA in July, following the monetary release. In September and October, the sixth round of the Six-Party Talks took place wherein the parties stridently progressed toward decommissioning facilities and heavy oil transfers. Further progress was made in October and November, including the funding of disablement activities and potential cooperation and reconciliation between the DPRK and ROK. However, the ROK elected a conservative government in December that promised to review the previous administration’s policies.

Between January and April 2008, progress on the 2007 agreements was delayed, thus increasing the tension and rhetoric from both sides. By late summer, progress stalled over minor (and largely unrelated) details. Diplomacy problems in diplomacy continued to mount into Autumn; by November, the DPRK began to restrict the inspector’s access. Total stalemate occurred in the December round of Six-Party Talks.

On April 5, 2009, the DPRK launched a satellite using a modified long-range missile in violation of UN Security Resolution 1718. The UN issued a condemnation eight days later. The DPRK responded by: (a) withdrawing from the Six-Party Talks, (b) ejecting IAEA and U.S. inspectors, and (c) claiming avoidance of all agreements in the Six-Party Talks. The DPRK’s second nuclear test was conducted on May 25, 2009 and was estimated to have a yield of

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220 id.
221 id.
222 id.
223 id.
224 id.
225 id.
226 id.
227 id.
229 Davenport 2, supra.
between 2-8 kilotons. Between Spring and the end of 2009, the diplomatic interaction yielded no progress and much of what was made in previous years was eroded.

Early and mid-2010 was dominated by the sinking of the Cheonan, an ROK patrol ship; the DPRK was blamed universally, but it denied complicity. The IC placed more sanctions on the DPRK because of the sinking. By November, the DPRK had revealed that it had significantly in advanced its nuclear fuel cycle.

On November 23, 2010, the DPRK fired artillery at Yeonpyeong, killing two soldiers and wounding 20 other military and civilian personnel. In response, China called for an emergency session of the Six-Party Talks; the U.S., Japan, and ROK declined to attend, claiming that resumption of the Talks would require improvement of relations as a prerequisite. Diplomatic ground was gained incrementally throughout 2011, culminating in a round of discussions in October about restarting the Six-Party Talks. In December 2011, Kim Jong Il died and was succeeded by his son Kim Jong Un.

Early in 2012, both the DPRK and U.S. worked out a deal under which the DPRK would: (a) stop enriching uranium at Yongbyon, (b) resume IAEA inspections, and (c) cease launching long-range missiles in exchange for 240,000 tons of food aid. A failed attempt to launch a weather satellite on April 13, 2012 led to the cessation of U.S. food aid deliveries. At a parade honoring Kim Il-Sung two days later, the DPRK revealed six road-mobile Intercontinental
Ballistic Missiles (ICBMs), which were probably fake.\textsuperscript{239} The concern with road-mobile designs stemmed from the relative inability to detect and or attack them prior to launch. That was followed by a second satellite launch on 12 December 12, 2012.\textsuperscript{240}

On January 22, 2013, the UN Security Council responded by passing Resolution 2087 which substantially expanded sanctions and other financial restrictions.\textsuperscript{241} The DPRK conducted its third nuclear test on February 12, 2013 with an estimated 6-7 kiloton device which was detected through both seismic activity and later by escaping gasses.\textsuperscript{242} The UN Security Council passed Resolution 2094 in March as a result; it further tightened sanctions and economic restraints.\textsuperscript{243} By September, the UN General Assembly passed a resolution calling the DPRK to fully comply with the NPT and cooperate with the IAEA.\textsuperscript{244}

Throughout 2014, the DPRK further agitated the IC (including China, its traditional ally) by conducting missile tests and threatening to test another nuclear weapon, this time using a new kind of warhead.\textsuperscript{245} During 2014, the DPRK also undertook efforts at (a) miniaturizing warheads, (b) advancing ballistic missiles for use by submarines, and (c) advancing road-mobile ICBMs.\textsuperscript{246} By November, the DPRK suggested to Russia it was ready to resume the Six-Party Talks.\textsuperscript{247} Sanctions on the DPRK were increased in early 2005 by the U.S.\textsuperscript{248} The DPRK offered to suspend nuclear testing in exchange for the cancelation of joint military exercises

\textsuperscript{239} id.
\textsuperscript{240} id.
\textsuperscript{241} S.C. Res. 2087, ¶ 7 (Jan. 22, 2013).
\textsuperscript{242} Davenport 2, supra.
\textsuperscript{243} S.C. Res. 2094, ¶ 7 (Mar. 7, 2013).
\textsuperscript{244} Davenport 2, supra.
\textsuperscript{245} id.
\textsuperscript{246} id.
\textsuperscript{247} id.
\textsuperscript{248} id.
between the U.S. and ROK.\textsuperscript{249} The offer was declined. Throughout the remainder of the year, more missile tests and sanction activity followed.\textsuperscript{250}

On January 6, 2016, the DPRK conducted its fourth nuclear weapon test. The DPRK claimed the device was a hydrogen bomb but experts were skeptical.\textsuperscript{251} The spring and summer of 2016 brought another cycle of missile tests, condemnations and sanctions. The U.S. deployed the Terminal High-Altitude Area Defense Battery (THAAD) to the ROK to combat the kind of missiles that the DPRK had launched in July.\textsuperscript{252} On September 9, the DPRK conducted its fifth nuclear test.\textsuperscript{253} It conducted several more missile tests by the end of the year.\textsuperscript{254}

The first eight months of 2017 have been complicated to say the least. The year began with a missile test launch by the DPRK, which was followed by the assassination of Kim Jong Nam using VX nerve agent.\textsuperscript{255} Missile tests continued throughout early 2017. The tests (including the July tests discussed in chapter two) culminated in UN Security Council Resolution 2371 and a marked increase in rhetoric and tension on both sides.\textsuperscript{256}

The DPRK conducted its sixth test of a nuclear device on September 3, 2017.\textsuperscript{257} It claimed that the device was hydrogen boosted, or thermonuclear, and was sufficiently miniaturized to be affixed to an ICBM.\textsuperscript{258} That test’s specific details have yet to be verified by experts but it drew widespread condemnation, including those made by the Secretary General of

\textsuperscript{249} id.
\textsuperscript{250} id.
\textsuperscript{251} id.
\textsuperscript{252} id.
\textsuperscript{253} id.
\textsuperscript{254} id.
\textsuperscript{255} id (the DPRK never admitted to being involved in the assassination).
\textsuperscript{256} id.
\textsuperscript{258} id.
the United Nations because it demonstrated problematic developments in the DPRK’s nuclear program. On September 11, 2017, the Security Council unanimously passed Resolution 2375 in response to the September 2nd nuclear test and other recent missile tests. That resolution placed strangle holds on the last remaining functional parts of the DPRK’s economy. Resolution 2375 reduced oil and petroleum product trade with the DPRK by over half, it completely banned textiles exports (the largest sector of the DPRK’s economy and the only one not restricted by previous sanctions), which is likely to cost the DPRK an estimated $760 million dollars per year, and bans all future expatriate work costing the DPRK an estimated $500 million per year. The resolution also included powerful anti-smuggling provisions which allow the IC to interdict suspected smugglers. Finally, Resolution 2375 allows the IC to seize assets belonging to key organs of the DPRK’s government. The severe penalties levied by Resolution 2375 are sound mechanisms to force the DPRK into talks.

The relevant history of the DPRK’s nuclear proliferation efforts have led to the current situation. The IC has been placing evermore pressure on the DPRK to forgo its nuclear ambitions and both sides have been ratcheting up their language and actions. Now is the time to consider the proliferation history of both Iran and the DPRK, as well as analyze the lessons learned in the JCPOA so that an instrument of international law can be crafted that denuclearizes the DPRK without allowing the JCPOA’s weaknesses or omissions and while retaining and building on its strengths. Examination of the relevant portions of the DPRK’s proliferation history can also help the IC tailor the lessons learned from the JCPOA to best combat the DPRK’s weapons program.

Chapter 5: Current Nuclear Weapons Related International Law

“All success in limiting armaments is a sign that the will to achieve mutual understanding exists, and every such success thus supports the fight for international law and order.”260

The Corpus Juris that bears upon nuclear proliferation is one of the most complicated and controversial issues in international law.261 In regard to proliferation, international law’s overarching goals are that no new nuclear powers emerge and the established nuclear powers progress to eventual disarmament.262 Those goals have not been achieved; countries have emerged as new nuclear powers (India, Pakistan, Israel, and the DPRK) and all of the NPT’s Nuclear Weapon States (NWS) (U.S., Russia, China, United Kingdom, and France) have yet to disarm. Measuring the validity of the current international legal system can be problematic in that only the failures are clear.

The current global nuclear proliferation situation stands at nine nuclear powers that possess an estimated total of around 15,000 weapons.263 The U.S. was the first to develop nuclear weapons and the only country to use them in war.264 The Russian Federation, as the political descendant of the Union of Soviet Socialist Republics, inherited its stockpile and

262 GENEVA ACADEMY, NUCLEAR WEAPONS UNDER INTERNATIONAL LAW: AN OVERVIEW 3 (Oct. 2014).
international commitments. Estimates of its stockpile are around 7,000 weapons in various operational statuses. According to estimates, France maintains approximately 300 weapons, China has about 260, and the United Kingdom has around 215. Those five countries are the Nuclear Weapons States (NWS) recognized in the NPT and are (not coincidentally) the permanent members of the UN Security Council. Each of those states had tested a nuclear explosive prior to Jan. 1, 1967. India, Pakistan, and Israel never joined the NPT and developed nuclear weapons. India has around 120 weapons, Pakistan has about 130, while Israel has an estimated 80.

Several states have had nuclear weapons programs that have been abandoned or destroyed by outside forces: South Africa, Iraq, Libya, Argentina, Brazil, the ROK and Taiwan. Belarus, Kazakhstan and Ukraine possessed Soviet weapons at the time of the USSR’s collapse, all of which were returned to Russia. Those three states joined the NPT as Non-Nuclear Weapons States (NNWS).

The fundamental basis of international law regarding nuclear weapons is the NPT, which

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266 PLOWSHARES FUND, supra.
267 id.
269 id.
270 Kelsey Davenport & Kingston Reif, Nuclear Weapons: Who Has What at a Glance, ARMS CONTROL ASSOCIATION ¶ 9 (Jul. 5, 2017) (Israel has never officially confirmed that it possesses nuclear weapons, most experts agree that it has a stockpile of around 80 weapons and enough fissile material for another 200).
271 id.
272 Id at ¶ 15.
273 id.
274 id.
was opened for signature in 1968 and entered into force in 1970.\textsuperscript{275} It consists of a Preamble and eleven Articles.\textsuperscript{276} The NPT is the most adhered-to arms control treaty with 190 current members.\textsuperscript{277} Only India, Israel, Pakistan, and South Sudan have not signed it.\textsuperscript{278} The DPRK withdrew in 2003, albeit under questionable legal footing.\textsuperscript{279}

The Preamble outlines the fundamental purpose and ideals behind the treaty.\textsuperscript{280} Article I restricts the NWS’ from transferring nuclear weapons technology or materials to NNWS.\textsuperscript{281} Article II prevents NNWS from receiving any nuclear weapons related technology or materials.\textsuperscript{282} The obligations under Article III are fourfold: (a) NNWS’ will adopt safeguards and sign an agreement with the IAEA codifying the safeguards, (b) parties to the NPT will not transfer materials or equipment to NNWS unless the receiving state has safeguards to which the transferred items will be subject, (c) safeguards with the IAEA will not unduly impede the peaceful pursuit of nuclear technology, and (d) negotiations for IAEA safeguards agreements (other than the original signatories) are required to begin prior to deposit of the instruments of ratification or accidence, and enter into force within eighteen months from the start of

\begin{thebibliography}{9}
\bibitem{276} Treaty on the Non-Proliferation of Nuclear Weapons, 1 Jul. 1968, I.S.N. 1628, 26 U.N.T.S. 9.
\bibitem{279} \textit{id}.
\bibitem{281} \textit{id} at art. I.
\bibitem{282} \textit{id} at art. II.
\end{thebibliography}
negotiations.\textsuperscript{283}

Article IV allows states to freely pursue peaceful nuclear technology “without
discrimination and in conformity with Articles I and II of this Treaty.”\textsuperscript{284} Article V of the NPT states that:

Each Party to the Treaty undertakes to take appropriate measures to ensure that, in
accordance with this Treaty, under appropriate international observation and
through appropriate international procedures, potential benefits from any peaceful
applications of nuclear explosions will be made available to non-nuclear-weapon
States Party to the Treaty on a non-discriminatory basis and that the charge to
such Parties for the explosive devices used will be as low as possible and exclude
any charge for research and development. Non-nuclear-weapon States Party to the
Treaty shall be able to obtain such benefits, pursuant to a special international
agreement or agreements, through an appropriate international body with
adequate representation of non-nuclear-weapon States. Negotiations on this
subject shall commence as soon as possible after the Treaty enters into force.
Non-nuclear-weapon States Party to the Treaty so desiring may also obtain such
benefits pursuant to bilateral agreements.\textsuperscript{285}

The potential peaceful purposes described therein may include activities like mining,
terrestrial conversion to increase access to minerals or petroleum, creation of underground
storage vaults, potential space propulsion, hazardous waste destruction, and near-Earth object
trajectory alteration.\textsuperscript{286} Article VI requires that parties undertake “negotiations in good faith” to
cease the arms race and commence eventual total disarmament.\textsuperscript{287}

Article VII allows for regional treaties proscribing nuclear weapons activities, which are
commonly referred to as Nuclear Weapons Free Zones (NWFZ).\textsuperscript{288} Article VIII covers the
processes for amending the NPT and establishes suggested Review Conference (hereinafter

\textsuperscript{283} id at art. III.
\textsuperscript{284} id at art. IV.
\textsuperscript{285} id at art V (emphasis added).
\textsuperscript{286} Daniel Starwalt, \textit{Peaceful Nuclear Explosions}, STANFORD UNIVERSITY; LARGE ¶ 2-3 (Jul. 17,
\textsuperscript{287} Treaty on the Non-Proliferation of Nuclear Weapons Art. VI, 1 Jul. 1968, I.S.N. 1628, 26
\textsuperscript{288} id at VII.
RevCon) intervals and mandated the first be held in Geneva, Switzerland five years following entry into force.\textsuperscript{289} Article IX codifies the ratification and accession processes and designates the Depository Governments.\textsuperscript{290}

Section 1 of Article X allows states to withdraw from the NPT if “extraordinary events, related to the subject matter of this Treaty, have jeopardized the supreme interests of its country.”\textsuperscript{291} The withdrawing state is required to give three months’ notice including a statement outlining the extraordinary circumstances it perceives as jeopardizing its “supreme interests.”\textsuperscript{292} Section 2 of Article X established that after 25 years, a conference would be held to determine whether the treaty should expire, be increased incrementally, or be extended indefinitely.\textsuperscript{293} On May 11, 1995, the NPT was extended indefinitely.\textsuperscript{294} Article XI codifies the NPT’s languages and the transmission to the depository governments.\textsuperscript{295}

In accordance with Article VII of the NPT, several NWFZs have been established. The Treaty for the Prohibition of Nuclear Weapons in Latin America and the Caribbean (hereinafter the Treaty of Tlatelolco) covers Latin America, South America and the Caribbean.\textsuperscript{296} The South Pacific Nuclear Free Zone Treaty (hereinafter the Treaty of Rarotonga) proscribes nuclear weapons activities in the South Pacific.\textsuperscript{297} The Treaty on the Southeast Asia Nuclear Weapon Free Zone (hereinafter the Treaty of Bangkok) prohibits nuclear weapons development on

\textsuperscript{289}id at VIII.
\textsuperscript{290}id at IX.
\textsuperscript{291}id at Art. X § 1.
\textsuperscript{292}id.
\textsuperscript{293}id at Art. X § 2.
\textsuperscript{294}UNITED NATIONS OFFICE FOR DISARMAMENT AFFAIRS, supra.
\textsuperscript{297}South Pacific Nuclear Free Zone Treaty, Aug. 6, 1985, 24 I.L.M. 1442 (hereinafter cited as Treaty of Rarotonga).
possession in 10 southeastern countries in Asia.\textsuperscript{298} The African Nuclear Weapon Free Zone
Treaty (hereinafter the Treaty of Pelindaba) covers the continent of Africa.\textsuperscript{299} The Treaty on a
Nuclear Weapon Free Zone in Central Asia (hereinafter CANWFZ) includes Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan.\textsuperscript{300} Mongolia declared itself a NWFZ and that declaration was adopted by Resolution 55/33S in 2000.\textsuperscript{301} The continent of Antarctica is also considered a \textit{de facto} NWFZ under the Antarctic Treaty.\textsuperscript{302}

Article IV of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (hereinafter Outer Space Treaty) prohibits the placement of nuclear weapons anywhere off the earth.\textsuperscript{303} This concept is reinforced in Article 3, Section 3 of the Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (hereinafter the Treaty of the Moon) which states “States Parties shall not place in orbit around or other trajectory to or around the moon objects carrying nuclear weapons or any other kind of weapons of mass destruction or place or use such weapons on or in the moon.”\textsuperscript{304} Nuclear weapons are also prohibited on the seafloor and seabeds of Earth’s oceans by the Treaty on the Prohibition of the Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction on the Sea-Bed and the Ocean Floor and in the Subsoil

\textsuperscript{301} G.A. Res. 55/33 S, ¶ 9 (Nov. 20, 2000).
\textsuperscript{304} Agreement Governing the Activities of States on the Moon and Other Celestial Bodies, art. 3 § 3, Dec. 18, 1979, U.N. Doc. A/34/46 (1980), 18 I.L.M. 1434.
Thereof (hereinafter Sea-Bed Treaty).³⁰⁵

On July 8, 1996, the International Court of Justice (ICJ) issued an Advisory Opinion after decades of debate on the legality of nuclear weapons.³⁰⁶ Pursuant to Article 96, paragraph 1, of the UN Charter, the General Assembly requested that the ICJ urgently render an advisory opinion on the question: “Is the threat or use of nuclear weapons in any circumstance permitted under international law?”³⁰⁷ The ICJ pondered this question in light of many sources: the UN Charter, Customary International Law, International Humanitarian Law, the NPT, other nuclear weapons specific instruments, and expert analysis.³⁰⁸ The ICJ came to one major conclusion that is relevant herein: the use or threatened use of nuclear weapons is almost universally illegal but the Court could not categorically conclude that in no circumstances is the use or threat of nuclear weapons illegal.³⁰⁹ Therefore, the legality of nuclear combat or the threat thereof is bound to the circumstances under which it takes place. If a nuclear weapon is used against an army in the middle of an otherwise uninhabited desert or a naval armada while it is at sea, the attack may not be directly illegal, but that strategic attacks against enemy cities would inherently be illegal under international humanitarian law and *Jus in Bello* due to a lack of necessity, proportionality and discrimination.³¹⁰

Nuclear weapons are also covered in several established or pending treaties. While the DPRK is not subject to the limitations in treaties that it has not signed, those treaties do clarify

³⁰⁹ ICJAO, *supra* at 252.
³¹⁰ *id* at 245.
some of the issues relevant in disarmament, nonproliferation and counterproliferation. Treaties that bear observation in the broader context of the DPRK’s disarmament include: the Arms Trade Treaty (ATT), the Biological Weapons Convention (BWC), the Chemical Weapons Convention (CWC), the Comprehensive Nuclear Test-Ban Treaty (CTBT), the International Code of Conduct against Ballistic Missile Proliferation (ICOC), and the Missile Technology Control Regime (MTCR).\textsuperscript{311}

The \textit{Corpus Juris} of nuclear weapons related international law has recently undergone a profound change with the passage of the Treaty on the Prohibition of Nuclear Weapons.\textsuperscript{312} If signed and ratified (or acceded to), the Treaty on the Prohibition of Nuclear Weapons will proscribe the development, testing, production, manufacture, acquisition, possession or stockpiling of nuclear weapons or explosive devices.\textsuperscript{313} The new treaty was passed by 122 nations and will be legally binding upon its signatories if adopted by at least 50 states.\textsuperscript{314} The treaty opens for signature on September 20, 2017 and may have a profound impact on the future


of international nuclear weapons law.\textsuperscript{315}

Due to the yet unknown impact of the Treaty on the Prohibition of Nuclear Weapons, the future of nuclear weapons in a legal sense is largely in question. The one sure assumption from the body of law surrounding the use and possession of nuclear weapons is that a state that uses or now proliferates is likely to face swift and near absolute condemnation. What will come from the new treaty when coupled with existent international law and whether the ICJ will revise its 1996 ruling remains to be seen, but change is sure to come.

\textsuperscript{315} id at ¶ 3.
CHAPTER 6: THE JOINT COMPREHENSIVE PLAN OF ACTION.

“The JCPOA is a clear and substantive gain for nuclear verification in Iran. It also represents a significant achievement for international diplomacy, with the UN, the EU, major countries and the IAEA all playing their part and working together effectively.”316

Signed on July 14, 2015, the JCPOA was the culmination of decades of counterproliferation effort.317 The JCPOA is an agreement reached by Iran and the P5+1 codifying the IC’s relief of economic sanctions tied to Iranian compliance with their counterproliferation benchmarks. The IC had driven Iran’s economy into a profound depression.318 The JCPOA was adopted on Oct. 18, 2015 and was implemented on Jan. 16, 2016, when the IAEA had verified Iranian compliance and the U.S. and European Union lifted economic sanctions aimed at coercing Iran into abandoning its nuclear weapons program.

The agreement is divided into a body and five Annexes.319 The body outlines the philosophical and legal commitments without muddying itself too much with specific or technical details.320 Annex One outlines the nuclear related commitments codified in the JCPOA.321 Annex Two covers sanctions relief.322 Annex Three plans civil nuclear cooperation.323 Annex Four of the JCPOA summarizes the structure of function of the Joint

318 See generally, McCain, supra.
319 U.S. DEPARTMENT OF STATE, supra.
320 id.
321 id.
322 id.
323 id.
Finally, Annex Five covers the Implementation Plan. The agreement faced a substantial political struggle within the U.S. The Obama Administration ardently supported the agreement. Claims included: Iran’s expatriation of 25,000 pounds of enriched uranium, dismantlement of 2/3 of its centrifuges, disablement of its heavy water reactor, and unprecedented access for IAEA inspectors. The Administration’s support included optimistic (but not entirely unfounded) claims that the JCPOA would block all of Iran’s avenues to a nuclear weapon. A more pragmatic claim made by the Administration was that the JCPOA would extend Iran’s breakout time from 2-3 months to at least a year. Fundamentally, the time Iran would require to build a weapon after adopting the JCPOA would be at least a year while the IAEA would have inspectors in the area. Prior to the JCPOA, Iran would have been able to build a weapon in 2-3 months without any inspectors in the country to detect or impede the process.

Objectors to the JCPOA have made substantial claims about its flaws. One such claim is that the agreement is not legally binding. While the requirement to lift sanctions codified in the JCPOA is not absolute, a re-imposition of the sanctions by the U.S. would be unilateral,
much less effective, and could also damage the U.S.’ credibility in future negotiations.\textsuperscript{331} Other attacks against the JCPOA included statements that: it is a “deal with the Devil,… the U.S. must kill the deal,… it is a recipe for war,… Obama sold out America to Iran,… that the U.S. surrendered its immense strength,… [and] planted the seeds of World War III.”\textsuperscript{332} Despite the rhetoric on both sides of the debate, the JCPOA’s recertification by the Trump Administration in both April and July of 2017 evidenced the high probability that none of the hyperbole is actually true.\textsuperscript{333}

Another set of issues surrounding the JCPOA are based upon its passage as a congressional-executive agreement.\textsuperscript{334} Several opposition members question the deal’s constitutionality. The Obama Administration originally sought to commit the U.S. to the JCPOA through an Executive Agreement, which can be constitutionally problematic.\textsuperscript{335} Congress responded by passing the Iran Nuclear Agreement Review Act of 2015 (INARA).\textsuperscript{336} In contravention of Congress’ intent, the Administration viewed the INARA as congressional

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authorization for the executive to conduct and sign the negotiations. The INARA contained provisions allowing 30 for days of congressional review. If after that period, Congress objected to the deal, then it could pass a Joint Resolution of disapproval. Because the resolution was subject to presidential veto and the republican controlled Congress did not have the votes to override such a veto, Congress did not pass a joint resolution of disapproval. In effect, the INARA turned the codification of the JCPOA from a traditional Executive Agreement into a Congressional-Executive Agreement.

The JCPOA is complicated piece of law, both internationally and domestically. Its original domestic validity hinged on Congress’ inability to sufficiently object; its continued domestic validity is subject to quarterly certification by an administration that has referred to the JCPOA as “the stupidest deal of all time.” Internationally, the JCPOA is on firmer footing because of its codification in the UN through the passage of Resolution 2231. Regardless of the Iranian situation, there are lessons to be learned from the JCPOA and those lessons can be applied to the creation of a counterproliferation agreement with the DPRK. The proper application of these lessons would ensure the strengths carry over, the weaknesses do not, and any omissions are included.

338 id.
341 Hyman, supra.
342 See generally, Full transcript: Third 2016 presidential debate, POLITICO (Oct. 20, 2016) (President Trump in response to the question: If we are able to push ISIS out of Mosul and out of Iraq, would you be willing to put U.S. troops in there to prevent their return or something else?) retrieved from http://www.politico.com/story/2016/10/full-transcript-third-2016-presidential-debate-230063.
CHAPTER 7: LESSONS LEARNED IN THE JCPOA.

It’s a pretty good deal… Now, I know that there are objections to it, but here's why I think it's a good deal. One of the great concerns that the opposition has, that we're leaving open a lane for the Iranians to go back to creating a nuclear weapon in ten or 15 years. They're forgetting the reality that they have been on a superhighway for the last ten years to create a nuclear weapon or a nuclear weapons program, with no speed limit.\textsuperscript{343}

It would be the acme of hubris to assume that the JCPOA is perfect. It is, however, a good jumping-off point for the IC to begin future negotiations aimed at counterproliferation in other regions. There are many lessons learned that can be applied to a future disarmament and counterproliferation agreement with the DPRK. Through objective analysis of the JCPOA, coupled with after-the-fact expert scrutiny, the JCPOA’s key elements can be distilled to bullet points for consideration in an instrument of international law affecting the DPRK’s disarmament.

At the outset of this chapter, a concrete definition of what will be considered as a lesson learned is required. For the purposes of this effort, the lessons learned can be sorted into four broad categories: Strengths, Weaknesses, Omissions, and Process. Those concepts categorized as Strengths include textual content that can be reliably considered as inducing impediments to martial nuclear development. Those categorized as Weaknesses include textual content that potentially allows current or future (whether covert or otherwise) military nuclear development. The lessons learned categorized as Omissions are concepts not included in the text of the JCPOA itself, but should have been. Lessons learned in the JCPOA Process include those from the lead-up to the negotiations, the implementation, execution and follow-through on the JCPOA.

\textsuperscript{343} Interview by Chuck Todd with Colin Powell, Former Secretary of State, for \textit{Meet the Press}, NBC ¶ 14-15 (Sept. 6, 2015).
Strengths:

Strength 1

The JCPOA includes a large group of stakeholders. The P5+1 (also the EU) and Iran are all party to the agreement. Through adoption of Resolution 2231 (2015), the UN also bound itself and all member states to the agreement. By including most of the developed world in the agreement itself and most of the world through the UN Resolution, the pool of stakeholders became a de facto enforcement body. Any party that engages in illicit activities with or on behalf of Iran runs the risk of isolating itself from the rest of the stakeholders. The JCPOA and Resolution 2231 create a global trading block that is legally bound to reimpose the sanctions lifted by the JCPOA if Iran fails to meet its obligations. This provision is sometimes referred to as a “Snap Back” clause. A further benefit in the Snap Back provision is that the Security Council need not take any action. If a complainant demonstrates Iranian non-compliance and exhausts the JCPOA’s dispute resolution mechanism, then the Security Council must pass a resolution to continue sanctions abetment. If it does not pass such a resolution, the sanctions will automatically be re-imposed.

Strength 2

The JCPOA contains an unambiguous statement declaring that “Iran reaffirms that under

346 id at ¶ 37.
349 id.
no circumstances will Iran ever seek, develop or acquire any nuclear weapons.”\textsuperscript{350} This statement engenders Iran’s clear and permanent commitment to forgo the acquisition of nuclear weapons. While it remains to be formally tested, that statement may effectively place the burden of proof upon Iran in disagreements over the potential non-weaponization of domestic nuclear technology. If disagreements over Iran’s activities arise, Iran will be required to demonstrate that disputed efforts are solely peaceful or the IC could re-impose sanctions.

Strength 3

The JCPOA relies on existent instruments of international law. It reaffirms that:

\ldots the NPT remains the cornerstone of the nuclear non-proliferation regime and the essential foundation for the pursuit of nuclear disarmament and for the peaceful uses of nuclear energy.\textsuperscript{351}

This subordinates the JCPOA to the NPT and firmly places Iran into the NNWS category thereunder. Additionally, by cementing an Iranian commitment to the NPT in the JCPOA, the IC effectively made the JCPOA an enforcement mechanism for the NPT’s tenets. The codification of specific elements in the JCPOA simply clarify the IC’s benchmarks for Iranian compliance with the NPT. Essentially, by relying on the NPT, the IC did not have to reinvent the wheel in the case of Iran. Had the JCPOA not relied on the NPT, Iran would still be obligated to its commitments thereunder. That would have created a complicated situation of dualistic and potentially contradictory law.

Strength 4

The JCPOA contains a codified and integrated dispute resolution mechanism.\textsuperscript{352} Disputes are invariably going to arise; when that happens, the mechanism contains the toolset to

\textsuperscript{350} Joint Comprehensive Plan of Action, Signed at Vienna Jul. 14, 2015, H.R. 3461, 114th Cong., S.C. Res. 2231, preface ¶ iii (Jul. 20, 2015).
\textsuperscript{351} id at preface ¶ vii.
\textsuperscript{352} id at § 36-37.
determine whether a breach of obligation has occurred and resolve the issue. If an issue is unresolvable and the complainant has exhausted good-faith efforts, it may cease performing its commitments and/or refer the issue to the UN Security Council.\textsuperscript{353} The inclusion of the dispute resolution mechanism is critical to the continued success of the agreement. By preventing capricious abandonment or unfounded claims of non-performance, the JCPOA allows for correction of legitimate issues without resort to an ill-equipped or hastily constructed deliberative body.

\textbf{Strength 5}

The JCPOA relies on the IAEA for monitoring and verification of compliance.\textsuperscript{354} The IAEA is an independent international body that reports to the UN General Assembly.\textsuperscript{355} It was founded in 1957 and has 168-member states.\textsuperscript{356} While the primary function is to promote peaceful nuclear technology, it is the prime organization that conducts monitoring and verification of potential proliferation concerns.\textsuperscript{357} Under Article III of the NPT, NNWS are obligated to

\begin{quote}
...accept safeguards, as set forth in an agreement to be negotiated and concluded with the International Atomic Energy Agency in accordance with the Statute of the International Atomic Energy Agency and the Agency’s safeguards system…\textsuperscript{358}
\end{quote}

According to the Safeguards Agreement, a state concludes with the IAEA, the IAEA will

\begin{footnotesize}
\begin{itemize}
  \item \textsuperscript{353} \textit{id}.
  \item \textsuperscript{354} \textit{id} at preface ¶x.
  \item \textsuperscript{355} \textsc{Nuclear Threat Initiative}, \textit{International Atomic Energy Agency} ¶ 4, retrieved from http://www.nti.org/learn/treaties-and-regimes/international-atomic-energy-agency/ (last visited Sept. 3, 2017) (cited hereinafter as \textsc{Nuclear Threat Initiative} 4).
  \item \textsuperscript{356} \textit{id} at header.
  \item \textsuperscript{357} \textit{id} at ¶ 1-7.
  \item \textsuperscript{358} \textit{Treaty on the Non-Proliferation of Nuclear Weapons} Art. III, 1 Jul. 1968, I.S.N. 1628, 26 U.N.T.S. 9.
\end{itemize}
\end{footnotesize}
be able to conduct inspections of sites within the control of the state. Typically, the IAEA conducts four types of inspections: (a) Ad Hoc, (b) Routine, (c) Special, and (d) Safeguard Visits.\textsuperscript{359} Ad Hoc inspections verify a state’s initial nuclear declaration.\textsuperscript{360} Routine inspections occur periodically and verify continued compliance.\textsuperscript{361} Special inspections supplement routine inspections and are conducted when abnormal circumstances demand special IAEA scrutiny.\textsuperscript{362} Safeguards inspections verify design and compliance with safeguards agreements.\textsuperscript{363} Additional inspections may be conducted under a voluntary Additional Protocol agreement which will be assessed as a separate strength.\textsuperscript{364}

As opposed to a separate verification and monitoring body, reliance on the IAEA allows for simple and effective verification and monitoring. The IAEA already possess the tools and expertise to ensure nuclear technology pursued by Iran is solely for peaceful ends.

Strength 6

Paragraph iv of the JCPOA’s preface allows Iran to freely pursue peaceful nuclear technology.\textsuperscript{365} Nonmilitary uses of nuclear technology include emission-free power production, radiological medicines, non-chemical insect control and radiation induced crop mutation.\textsuperscript{366} By allowing Iran to further develop it peaceful nuclear capabilities, the IC may get two primary benefits: (a) Iran will garner all of the benefits of a robust peaceful nuclear program and will

\begin{thebibliography}{9}
\bibitem{Nuclear Threat Initiative 4} Nuclear Threat Initiative 4, \textit{supra} at ¶ 8.
\bibitem{id} \textit{id}.
\bibitem{id} \textit{id}.
\bibitem{id} \textit{id}.
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\end{thebibliography}
likely be less dependent on less effective and more caustic technologies and foreign aid, and (b) the open sharing of peaceful nuclear technologies will allow the IC to more closely monitor Iran’s advancements and potential covert proliferation efforts.

Strength 7

Paragraph XVI of the JCPOA’s preface dictates that the parties thereto will meet (at least) at the ministerial level at least every two years. This guarantees that issues of concern and the future trajectory of the agreement are given the proper level of deliberation at a maximum distinct frequency.

Strength 8

Section A of the JCPOA places stringent controls on the most affectable part of Iran’s nuclear fuel cycle. The enrichment of uranium through the gaseous-centrifugal separation of U-235 is restricted solely to reactor fuel production and capped at a specific enrichment level and maximum total quantity. By limiting the total number and type of centrifuges at Natanz to 5060, the IC limited Iran’s ability to violate the agreement covertly as enrichment beyond the codified limits would require substantially more centrifuges and/or cycles through the same centrifuges. Excess equipment is also required to be stored under continuous IAEA monitoring. Iran is also required by the JCPOA to convert the facility at Fordow to a nuclear,

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369 id.
physics and technology center.\textsuperscript{372} The number of centrifuges at Fordow is capped at 1044 of the IR-1 type.\textsuperscript{373} Those centrifuges are allowed to be arranged in six cascades, two of which may not be used to enrich uranium but may be used to create stable isotopes for things like nuclear medicines.\textsuperscript{374} Controls on the enrichment portion of the fuel cycle allow concrete verification of Iran’s compliance with the JCPOA in the most infrastructure intensive phase of potential proliferation concern.

\textbf{Strength 9}

The JCPOA places specific restrictions on Iran’s centrifuge development.\textsuperscript{375} At the beginning, it is restricted to exclusive use of the less efficient IR-1 type and must store all the manufactured IR-6 and IR-8 types without their rotors under constant IAEA monitoring at Natanz.\textsuperscript{376} The requirement prevents the accelerated breakout capability inherent in more efficient centrifuge design. Additionally, if Iran abandons the JCPOA and expels the IAEA, then the single point of storage requirement will allow the IC to more accurately predict its breakout schedule. After the IAEA determines the more efficient centrifuges are necessary for and in accordance with Iran’s long-term enrichment and enrichment Research and Development (R&D) plans, the Joint Commission can authorize Iran’s adoption of that technology.

\textbf{Strength 10}

Iran’s enrichment activity under the JCPOA is restricted for 15 years to a single lawful location: Natanz.\textsuperscript{377} This reduces the costs of IAEA monitoring and renders any other enrichment activities automatically illegal. If the IAEA, or any part of the IC, becomes aware of

\begin{itemize}
  \item \textsuperscript{372} id at ¶ 6.
  \item \textsuperscript{373} id.
  \item \textsuperscript{374} id.
  \item \textsuperscript{375} id at ¶ 4.
  \item \textsuperscript{376} id.
  \item \textsuperscript{377} id at ¶ 5.
\end{itemize}
additional enrichment activities conducted by Iran, or anyone on its behalf, the dispute resolution mechanism will be invoked. The elegance of this condition is bolstered by the fact that uranium enrichment is remarkably infrastructure-intensive, expensive, and hard to hide.

**Strength 11**

Paragraph 5 of the JCPOA also limits the relative level of U-253 (the fissionable isotope) Iran may produce.378 The maximum quantity of U-235 relative to other isotopes is capped at 3.67% in any chemical form, which is significantly lower than what is required for weapons production.379 The enrichment caps, taken in conjunction with total quantity limitations, will prevent and/or drastically complicate future re-enrichment to weapons grade levels.

**Strength 12**

Paragraph 7 of the JCPOA limits Iran to a total of 300kg of uranium enriched to the 3.67% regardless of chemical form.380 Iran is required to sell stock in excess of this limit at international prices and in exchange for natural uranium, or it will be down-blended or converted into fuel for the Tehran Research Reactor.381 Fuel rods manufactured outside Iran are exempted from this limit.382 The JCPOA requires the IC to facilitate this exchange and provide any additional necessary fuel at market prices.383

**Strength 13**

The JCPOA includes a requirement that Iran ship spent fuel rods from the Arak HWR to

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378 *id.*
381 *id.*
382 *id.*
383 *id.*
other states.\(^{384}\) This requirement prevents Iran from isolating plutonium from the spent fuel. The generation of plutonium is a byproduct of the irradiation of uranium that takes place in reactors. Heavy Water Reactors are more likely to generate plutonium within the fuel rods. The JCPOA also required Iran to redesign the Arak reactor to make it less likely to produce plutonium.

**Strength 14**

Paragraphs 9 and 10 of the JCPOA obligate Iran to commit to almost exclusive utilization and construction of LWRs.\(^{385}\) Light Water Reactors are proliferation-resistant because they produce substantially less plutonium. Iran is also required to export all excess heavy water.\(^{386}\) Without heavy water, or the reactors requiring it, Iran’s covert pathway to a plutonium weapon will be effectively closed.\(^{387}\)

**Strength 15**

Paragraph 13 of the JCPOA requires Iran to adopt the Additional Protocols to the IAEA Safeguards Agreement.\(^{388}\) The Additional Protocols grew out of problems in the IAEA’s issues in Iraq and the DPRK in the early 1990s. Those states were willing to allow inspectors to evaluate declared nuclear facilities under their traditional Safeguards Agreements, but denied inspectors access to non-declared facilities that the IAEA suspected were areas of proliferation concern.\(^{389}\) Iran’s compulsory adoption of the Additional Protocol allows the IAEA virtually unrestricted access to areas it believes may be involved in covert proliferation activities.

\(^{384}\) *id* at ¶ 8.

\(^{385}\) *id*.

\(^{386}\) *id*.

\(^{387}\) *id*.

\(^{388}\) *id* at ¶ 13.

Strength 16

The JCPOA includes provisions that will allow the IAEA to retain a long-term presence in Iran.\textsuperscript{390} Those provisions include “…monitoring of uranium ore concentrate produced by Iran from all uranium ore concentrate plants for 25 years”, and “use of IAEA approved and certified modern technologies including on-line enrichment measurement and electronic seals”. By including language that allows long-term, onsite and remote monitoring, the IAEA is free to comprehensively conduct at-will inspections of the majority of Iran uranium production capacity.

Strength 17

Paragraph 16 of the JCPOA specifically proscribes activities “that could contribute to the development of a nuclear explosive device”, even if only at the R&D level.\textsuperscript{391} This ban alleviates the IAEA’s burden of proof. In matters of technical and R&D concern, the proliferation-likelihood of any given activity can be complicated at best. This provision allows the IAEA to view any questionable activity as being an illicit contribution to development of a nuclear explosive device. Additionally, under this provision, the IAEA can declare any questionable activities illicit without necessarily proving the military utility of the activities, thereby denying Iran technical and weapons design information that may inadvertently accelerate its breakout timeline.

Strength 18

The JCPOA contains an Implementation Plan that effectively acts as a codified


\textsuperscript{391} id at ¶ 16 \textit{(emphasis added)}.
Inclusion of a codified timeline prevents progress from being stalled. With the imposition of certain time tables for specific activities, the JCPOA allows steady progress and establishes minimum wait-periods for the IAEA and IC to verify compliance. This allows liberal, but not overly hasty, progress.

**Strength 19**

The timeline referenced in Strength 18 is directly tied to performance. Paragraph 35 of the JCPOA states: “The sequence and milestones set forth above and in Annex V are without prejudice to the duration of JCPOA commitments stated in this JCPOA.” Should Iran fail to meet any of its commitments, progress along the timeline will pause until Iran comes into compliance. Continued noncompliance could result in possible enactment of the Snap Back provisions previously described.

**Strength 20**

Annex IV of the JCPOA establishes a Joint Commission comprised of representatives from the parties thereto. The Joint Commission’s functions include prior review and approval of all activities that could be considered proliferation-related that might also have non-military applications. Examples include: reactor redesigns, reactor fuel redesigns, new centrifuge design, and project review at Fordow. Establishment of the Joint Commission allows a single point of contact for management and administration of the JCPOA in regard to Iranian nuclear activities.

**Strength 21**

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392 *id* at ¶ 34 and Annex V.
393 *id* at ¶ 35.
394 *id*.
395 *id* at Annex IV.
396 *id* at Annex IV § 2.
397 *id* at Annex IV §§ 2, 1-6.
The Joint Commission referenced in Strength 20 may establish Working Groups as appropriate. The Joint Commission’s authority to delegate responsibility to teams composed of specialists allows work to be conducted at a more efficient sub-ministerial level and allows keener focus on the Working Group’s area of responsibility. By including this provision, the JCPOA allows the Joint Commission to tailor Working Groups to specific problems.

Weaknesses

Weakness 1

The schedule of sanctions relief codified in the JCPOA can be viewed as being overly broad. If properly used, sanctions can be effective tools in international coercion efforts. By including a broad list of sanctions lifted by the JCPOA, some experts have argued that the IC’s hands are effectively tied when it comes to using sanctions to correct other non-nuclear behaviors. Additionally, the economic relief Iran receives from sanctions abatement may foster increased support of Hezbollah and Shiite Militias throughout the region and the world. When viewed as overbroad, the relief of nuclear related sanctions can appear to prevent effective application of sanctions based on Iran’s other illicit behaviors.

Weakness 2

398 id at Annex IV § 1, 1-3 (due to a typographical error in the text of the JCPOA all subsections immediately under Annex IV are listed as paragraph 1 the referenced paragraph should be 3).
400 Monetary Policy and Trade and the Terrorism and Illicit: Hearing Before H. Comm. on Financial Services Finance Subcommittees on increasing the effectiveness of non-nuclear sanctions against Iran 115th Cong. ¶ 28 (2017) (statement of Suzanne Maloney, deputy director of the Foreign Policy program at the Brookings Institution).
The JCPOA requires that parties thereto “...commit to implement this JCPOA in good faith and in a constructive atmosphere, based on mutual respect, and to refrain from any action inconsistent with the letter, spirit and intent of this JCPOA that would undermine its successful implementation.”\(^{402}\) This stipulation is awkward in that one of the mantras of Iran’s revolutionary genesis is “Death to America!” and that chant is still widely used throughout the nation.\(^{403}\) A substantial part of the congressional hearings on the JCPOA hinged on whether Iran was willing to participate in good-faith and constructive application of the deal.\(^{404}\) Herein, a delineation is implied between the actions of the Iran’s government, its people and other institutions. If the obligation for good-faith effort rests solely on the government as opposed to other institutions or on the people, then there has been no violation. However, if the obligation for good faith is extended to the other institutions and to the people, then the chant is problematic.

Weakness 3

The inclusion of specific expiration dates in the JCPOA is challenging in a long-term counterproliferation instrument.\(^{405}\) The JCPOA’s 10 to 15-year staged expiration dates have engendered a belief that Iran could freely pursue a nuclear weapons program upon reaching such specified dates. Former Secretary of State Colin Powell phrased the concern: “One of the great concerns that the opposition has, that we're leaving open a lane for the Iranians to go back to


\(^{404}\) id.

\(^{405}\) See generally, Interview by Chuck Todd with Colin Powell, Former Secretary of State, for Meet the Press, NBC (Sept. 6, 2015).
creating a nuclear weapon in ten or 15 years.”406 While some restrictions are slated to end in the 10 to 15-year range, the IAEA will maintain a presence in Iran for the next 25 years.407 Additionally, Iran’s commitment to the NPT, Safeguards Agreements, Additional Protocols and other agreements are permanent.408 This weakness could have been abated by more stringently tying the expiration to performance metrics and inclusion of reintroduction clauses for non-compliance.

Weakness 4

Paragraph 8 of the JCPOA allows Iran to retain its HWR at Arak.409 Due to the proliferation susceptibility of HWRs, this may be a route for Iran to covertly acquire plutonium. Specific mitigations are included in the JCPOA that should prevent Iran’s acquisition of sufficient amounts of plutonium, including removal of the spent fuel, IAEA presence, and reactor redesign.410 The existence of the Arak HWR can be a proliferation concern.411 When coupled with the expiration dates referenced in Weakness 3, the Arak HWR becomes a likely source of future proliferation issues.

Weakness 5

Following a 15-year period of initial control, Iran could legally enrich uranium to levels well beyond the 3.67% U-235 mark, and in quantities well beyond the 300kg limit set in

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406 id at ¶ 14.
408 id at preface ¶ iii.
410 id.
paragraph 7 of the JCPOA. Additionally, Section E of Annex V terminates the provisions of Security Council Resolution 2231 after 10 years, effectively making it harder to determine if Iran is proliferating. Once the enrichment cap expires, Iran could enrich fuel to a level only a few cycles short of weapons grade and still be compliant with the text of the NPT and other instruments. This would enable Iran to have a very short breakout timeline.

**Omissions**

**Omission 1**

The JCPOA contains no restrictions on missile related activities. The agreement does not proscribe any missile related activities. This is somewhat offset by the fact that UNSC Resolution 2231 states:

> Iran is called upon not to undertake any activity related to ballistic missiles designed to be capable of delivering nuclear weapons, including launches using such ballistic missile technology, until the date eight years after the JCPOA Adoption Day or until the date on which the IAEA submits a report confirming the Broader Conclusion, whichever is earlier.  

This replaced the more declarative language found in UNSC Resolution 1929:

> Decides that Iran shall not undertake any activity related to ballistic missiles capable of delivering nuclear weapons, including launches using ballistic missile technology, and that States shall take all necessary measures to prevent the transfer of technology or technical assistance to Iran related to such activities.

While seemingly semantic, the difference between the two phrases: “Iran is called upon to…” and: “Decided that Iran shall not…” can be profound in that the latter is a declarative proscription against missile related activities and the former is a non-binding urging to delay any

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413 *id* at Annex V, § E.
415 S.C. Res. 1929, ¶ 9 (June 9, 2010).
such activities that are directly related for a certain timeframe. 416 Resolution 1929 was superseded and terminated by Resolution 2231. 417 The termination of previous Resolutions under 2231 is “subject to re-imposition in the event of significant non-performance by Iran of JCPOA commitments”. 418 Thereunder, if the IC determines that Iran’s missile activities are “related to ballistic missiles designed to be capable of delivering nuclear weapons,” then it may reimpose any of the restrictions included in the previous resolutions. 419

Ostensibly purely for conventional weapons application, missile technology is a substantial component of Iran’s national security policy. 420 Iran has a right to pursue a conventional defensive capability. 421 The determination of whether a given missile is “designed to be capable of delivering nuclear weapons” depends on technical analysis of that missile’s functional capabilities. Such a determination depends on subjective assessments that are usually impossible to make after the fact. Had the JCPOA (or Resolution 2231) included precise language declaratively proscribing missile and space launch capabilities that could be utilized in the ballistic delivery of a nuclear weapons, the issue of Iranian missile development would not be as much of a stumbling block as it presently is. That component also requires an integrated verification mechanism.

Omission 2

The JCPOA should have included a mandate for Iran to participate in a long-term regional strategy. Because the JCPOA’s framers were solely focused on nuclear

416 S.C. Res. 2231, at 99 (July 20, 2015); S.C. Res. 1929, ¶ 9 (June 9, 2010).
417 S.C. Res. 2231, supra ¶ 18.1.
418 id.
419 id.
counterproliferation issues, they missed a substantial opportunity to use the agreement’s discussion and process to coerce Iran into a broader long-term regional strategy. Robert Einhorn, a Senior Fellow of Foreign Policy at the Center for 21st Century Security and Intelligence, Arms Control and Non-Proliferation Initiative at the Brookings Institute, suggested that the absence of such provisions in the JCPOA will force the IC to be more proactive in its approach to Iran’s provocative behaviors that are not violative of the JCPOA. 422 He further suggested that:

Re-negotiating more favorable nuclear terms today would be even harder than it would have been in 2015. Widespread complaints in Iran that it is not receiving the benefits of the JCPOA, however unjustified, would make it politically impossible for any Iranian government to make further concessions. 423

Under that logic, the JCPOA must now stand alone as the instrument that codifies Iran’s non-proliferation for the next 10-15 years until the NPT becomes the primary nonproliferation agreement to which Iran is subject. Increasing Iran’s participation in a broader regional strategy will invariably require a new set of arrangements. Had the simple language been included in the JCPOA that required Iran to substantively contribute (or better still, lead) international efforts to stabilize the region, its neorealist drive could have been diverted from nuclear proliferation to assisting in the stabilization of broader regional problems.

Omission 3

The JCPOA is deficient on limitations and clarifications of dual-use technology. There are many peaceful applications for technologies that can support or advance a state’s ability to


423 *id* at ¶ 22.
covertly proliferate.\textsuperscript{424} Items listed as dual use technology can generally be defined as:

“…items, including software and technology, which can be used for both civil and military purposes, and shall include all goods which can be used for both non-explosive uses and assisting in any way in the manufacture of nuclear weapons or other nuclear explosive devices”\textsuperscript{425}

Several items can be considered as falling into this category of material. The problem is that Iran may either be limited in acquiring legitimate, peaceful nuclear technology from the members of the Nuclear Suppliers Group (NSG) or it may acquire those technologies from non-NSG sources which will raise the IC’s ire and probably result in referral to the Joint Commission.

The European Commission regulates the transfer of potential dual use technology through Council Regulation 428/2009 of May 5, 2009, titled: Setting up a Community Regime for the Control of Exports, Transfer, Brokering and Transit of Dual-use Items.\textsuperscript{426} That regulation’s annexes contain definitions and examples \emph{ad nauseum}, and no members of the regime may transfer listed technologies without following the proper protocols. The U.S. controls on the export of potential dual use technology through the Title 15 of the Code of Federal Regulations, Section 774 which is titled: The Commerce Control List.\textsuperscript{427} The Supplements to that regulation outline technologies that firms, individuals, and agencies cannot disseminate without following established procedures.

Had the JCPOA’s framers included language that required a singular review and approval of any items listed in either Council Regulation 428/2009 or 15 C.F.R. § 774.1 (2016), then the JCPOA’s ability to control potential covert proliferation would have rested on sounder legal


\textsuperscript{426} \textit{id.}

\textsuperscript{427} 15 C.F.R. § 774.1 (2016).
footing. Controls placed on the most likely exporters of dual use technologies are likely to increase the complexity and cost of any attempt by Iran to covertly amass the infrastructure needed to support an illicit weapons program, but specific controls on Iranian development or acquisition of dual use technology are absent from the JCPOA. Had acquisition and development controls been included, the IC’s ability to monitor Iran’s potential for misuse of that technology would have been bolstered.

Omission 4

The JCPOA should have included provisions requiring Iran to assist the IC in counterterrorism efforts. While the JCPOA’s overarching goal was to curb Iran’s nuclear program, which would have been bogged down by inclusion of issues not related to nuclear nonproliferation, the opportunity was missed to use the agreement process to encourage Iran to become a substantial ally in the IC’s global counterterrorism efforts.428 Had the JCPOA included general provisions affirming, as a show of good faith, that Iran would support international efforts at curbing the spread of terrorism, the IC could have used the JCPOA’s progress and the related benefits as a carrot and stick to goad Iran into abating its support of terrorism. Iran is still considered to be the leading state-sponsor of terrorism, which is problematic for the JCPOA’s advancement and support.429 A bit of extra foresight could have allowed the JCPOA’s framers to include a simple provision indicating an obligation on Iran’s


part to cease the funding of organizations considered by the IC as terrorists. That provision could have been tied to the exchange of support for peaceful nuclear technology.

Process

Process 1

The first lesson that can be learned from the process of achieving the JCPOA is that sanctions worked at getting Iran to the table.\(^{430}\) The crippling of Iran’s economy drove the population to elect the moderate Rouhani Administration in a landslide.\(^{431}\) Within days of being inaugurated, Rouhani began the process of resuming nuclear talks.\(^{432}\) The change in political winds even facilitated the first direct communication between the Iranian and American Presidents since Iran’s 1979 Revolution.\(^{433}\) The functionality and utility of economic sanctions is a hotly debated.\(^{434}\) Determining whether sanctions can be targeted effectively enough to ensure a state behaves in a given way is more of an art than a science. In the case of Iran, sanctions conclusively drove the regime to open dialog with the IC.\(^{435}\)

Process 2

The second lesson that can be gained through study of the processes of achieving the JCPOA is that negotiations can foment a workable agreement. Substantial doubt existed as to

\(^{430}\) McCain, supra at 22.

\(^{431}\) id.

\(^{432}\) id.

\(^{433}\) id.


whether any agreement was possible or effective.\textsuperscript{436} That doubt has been largely assuaged by the adoption of the final agreement. Doubts about both the parties’ ability trust any agreement with each other and the IC’s doubt about the DPRK’s willingness to negotiate in good faith seem to scuttle any talks before they can begin.\textsuperscript{437} These doubts are a poor excuse to forgo the possibility of a peaceful resolution before talks even begin. It is possible that the most advantageous outcome with the DPRK is JCPOA-like agreement.\textsuperscript{438} If left to scientists, legal experts and professional diplomats, the likelihood of a functional agreement is vastly increased. A problem that may arise is that political opponents to an agreement can scuttle it before it even takes shape. Earnest and good faith talks amongst interested and relevant parties can result in an efficient agreement that works to achieve its aims.

\textbf{Process 3}

The third lesson that can be learned from the process that resulted in the JCPOA is that the U.S. should have joined the agreement as a full-force treaty as opposed to a Congressional-Executive Agreement. Article Two of the Constitution places the onus for advice and consent regarding treaties on Senate.\textsuperscript{439} Two thirds of the Senators are supposed to concur with treaties.\textsuperscript{440} The ratification of treaties in a politically charged climate can be nearly impossible. The JCPOA was not likely to receive sufficient support for passage as a treaty. The Obama Administration therefore acceded to the treaty in the form of an Executive Agreement. That


\textsuperscript{437} id at ¶ 5.

\textsuperscript{438} Robert L. Litwak, \textit{An Iran-Style Nuclear Deal With North Korea Is the Best America Can Hope For}, THE ATLANTIC, ¶ 3 (May 4, 2017) retrieved from https://www.theatlantic.com/international/archive/2017/05/iran-deal-north-korea-jcpoa/525372/.

\textsuperscript{439} U.S. Const. Art II, § 2 cl. 2.

\textsuperscript{440} id.
brought up substantial issues regarding the JCPOA’s constitutionality. To prevent executive action on the JCPOA from tying the U.S. to the agreement, Congress passed the Iran Nuclear Agreement Review Act of 2015. That law required congressional review of the agreement and provided sixty days for that review. Following the review, Congress could have passed a joint resolution of disapproval. Congress did not pass any such resolution. That effectively provided congressional support for the agreement and turned it into a Congressional-Executive Agreement. Had the JCPOA been passed as a full-force treaty under Article 2, it would have rested on more substantial legal footing and not be subject to the ever-shifting American political will.

Process 4

The fourth, and final lesson learned in the processes that led to the JCPOA is that a UNSC Resolution can firmly entrench an international agreement into the body of international law. Passage of Resolution 2231 by the Security Council made the JCPOA a legally binding instrument of international law. Despite individual states (and persons therein) claiming that the JCPOA is legally null within their respective borders, the passage of Resolution 2231 obligated the states to adhere to the agreement through their UN commitments. Had Resolution 2231 not been passed, then the JCPOA would probably have unraveled. Therefore, the addition of a binding UN Security Council Resolution supporting an instrument of international law can be viewed as a critical lesson learned.

443 id.
444 Padeanu, *supra*.
445 S.C. Res. 2231, *supra*.
The foregoing lessons learned can be categorized into four groups: (a) strengths that should be carried over to an instrument of international law that denuclearizes the DPRK, (b) weaknesses that should be avoided in an agreement with the DPRK, (c) omissions from the JCPOA that should not be repeated, and (d) processes that should be understood for the IC to achieve the best deal possible. Those things listed as strengths should carry over directly or even be strengthened or tailored to best suit the unique circumstances of the DPRK’s situation. The weaknesses should be mitigated in a way that best prevents the IC from running into the issues that it currently faces with Iran. Omissions from the JCPOA should be considered for inclusion in an agreement denuclearizing the DPRK to strengthen that agreement. Finally, processes that have affected the JCPOA should be carefully studied in ensure the best formation and execution of a deal with the DPRK can be achieved.
CHAPTER 8: APPLICATION OF THE LESSONS LEARNED TO AN AGREEMENT WITH THE DPRK.

“The past is where you learned the lesson, the future is where you apply the lesson, don’t give up in the middle.”

Application of the lessons learned in the JCPOA to an instrument of international law effecting the denuclearization of the DPRK could result in an agreement that brings the strengths, avoids the weaknesses, includes the omissions and leans on the wisdom gleaned in the JCPOA’s construction, framing, and execution. The JCPOA’s observed strengths can be carried over and tailored to a future DPRK deal. The omissions can be included in a way that prevents some of the JCPOA’s problems. The weaknesses can be mitigated by minor alterations in the DPRK agreement’s language. Finally, the lessons learned from the processes through which the JCPOA went can be leaned upon to ensure smoother passage for an agreement with the DPRK. Each of the lessons learned is analyzed below for the methodology of application to the DPRK.

Strengths

Strength 1

The JCPOA contained a large group of Stakeholders. A similarly large group can be gathered to support the IC in the DPRK’s denuclearization. There is no reason to think that any of the members of the Six Party Talks (China, DPRK, Japan, ROK, Russia and the U.S.) would not support a resumption of talks if certain preparatory measures were taken. For example, China has expressed that that resumption of talks, while complicated, is necessary. The larger the group of stakeholders that can be included in a proposed agreement, the broader the support

the final product is likely to have. Additionally, the UN and EU should be encouraged to take an active role in the discussions to gain global support for an agreement.

**Strength 2**

A proposed agreement with the DPRK must include a permanent and declarative statement of purpose like the one contained in the JCPOA: “Iran reaffirms that under no circumstances will Iran ever seek, develop or acquire any nuclear weapons.” 449 Inclusion of a similar purpose statement, when applied to the DPRK, may clarify the resolve of the proposed agreement. It will also permanently codify the DPRK’s obligation toward its future status as a NNWS under the NPT.

**Strength 3**

The JCPOA’s reliance on established instruments of international law can be carried over to a DPRK disarmament agreement. Inclusion of direct references to the NPT, NSG agreements, UN Charter can pin the proposed agreement to an established body of international law. By relying on previously adopted instruments, a proposed agreement with the DPRK can relive itself of reiterating what has already been established in international law. The JCPOA acknowledges that: “the NPT remains the cornerstone of the nuclear non-proliferation regime and the essential foundation for the pursuit of nuclear disarmament and for the peaceful uses of nuclear energy.” 450 Therefore, an agreement with the DPRK should require complete and total reintegration into the NPT as a NNS.

**Strength 4**

450 id at preface vii.
Like the JCPOA, an instrument of international law with the DPRK should include an integrated dispute resolution mechanism. The JCPOA’s body prevents undue external political influence. Without a similar body, a proposed DPRK disarmament agreement could be subject to problematic influence. Opponents of an agreement could use minor disagreements between parties as justification to abandon the deal if not for a codified dispute resolution mechanism. Therefore, a deliberative body, with the power to resolve technical or legal disputes, should be included in a proposed agreement.

**Strength 5**

The JCPOA relies on the IAEA for verification and monitoring. The JCPOA states:

> The International Atomic Energy Agency (IAEA) will be requested to monitor and verify the voluntary nuclear-related measures as detailed in this JCPOA. The IAEA will be requested to provide regular updates to the Board of Governors, and as provided for in this JCPOA, to the UN Security Council. All relevant rules and regulations of the IAEA with regard to the protection of information will be fully observed by all parties involved.

This is a logical provision. An agreement with the DPRK should contain similar language to best effect the disarmament of the DPRK. The specific text should allow the IAEA unrestricted access on short notice.

**Strength 6**

The JCPOA clearly requires the IC to support the peaceful adoption of nuclear technology in Iran. Given the DPRK’s more complicated proliferation history, the IC’s full support in this realm may be harder to achieve. Instead, the IC should be obligated by a deal with the DPRK to support delivery, through sale at open market prices, of the product and

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451 *id* at ¶ 36.
452 *id* preamble ¶ x.
453 *id.*
benefits of nuclear technologies.\textsuperscript{454} This would allow the DPRK to gain the non-military benefits of nuclear technology without any of the problems associated with proliferation capable technologies.

**Strength 7**

Paragraph XVI of the JCPOA’s preface mandates that the parties thereto will meet at the ministerial level at least every two years.\textsuperscript{455} This ensures that issues of concern and the future vector of the agreement are given the proper level of consideration at a maximum defined frequency. In the case of the DPRK, a mandate for periodic ministerial level meetings could be set at a frequency more often than the best projections of the DPRK’s breakout time. This would probably allow ministerial level discussions in the time between indications of the DPRK’s non-compliance and the date at which it would be able to reacquire a nuclear device.

**Strength 8**

The JCPOA places strict limitation on Iran’s fuel cycle. Similar controls can be applied in an agreement with the DPRK. Paragraph 1 of section A of the JCPOA states that:

> Iran's long-term plan includes certain agreed limitations on all uranium enrichment and uranium enrichment-related activities including certain limitations on specific research and development (R&D) activities… \textsuperscript{456}

In the case of the DPRK, the limitations should include plutonium and hydrogen isotope development. A proposed agreement with the DPRK should include language that restricts DPRK’s control of its fuel cycle. That language could require that all fuel for power production be sourced from NSG members and be transferred in accordance with those states’ internal

\textsuperscript{454} Telephone Interview with Justo E. Saavedra, Instructor of Nuclear Weapons Technology, USAF (Sept. 9, 2017).

\textsuperscript{455} Joint Comprehensive Plan of Action, Signed at Vienna Jul. 14, 2015, H.R. 3461, 114th Cong., S.C. Res. 2231, preface ¶ 16 (Jul. 20, 2015).

\textsuperscript{456} id at ¶ 1.
proliferation controls. Furthermore, the agreement could require that spent fuel be shipped back to the state of origin.

**Strength 9**

Limits placed on Iran’s physical ability to enrich fuel should be carried over to an agreement with the DPRK.\(^{457}\) Restrictions on centrifuges and spent fuel reprocessing should be declaratively stated in an agreement between the IC and the DPRK. An agreement restricting the DPRK’s nuclear program must include firm proscriptions on acquisition and possession on fissile material of the enrichment levels and quantities that facilitate the development of nuclear weapons.

**Strength 10**

The JCPOA restricts Iran to a single location for lawful enrichment of fissile material: Natanz.\(^{458}\) This can be incorporated into an agreement with the DPRK by restricting all lawful nuclear activity to a single location. Under a similar limitation, any other site would be inherently illicit. A provision requiring all enrichment or any nuclear capabilities to be located at a single point will drastically reduce the complexity of the IAEA’s task.

**Strength 11**

Uranium enriched by Iran under the JCPOA is capped at 3.67%.\(^{459}\) That limit is well below the level required to produce weapons. A similar requirement should be included in an agreement with the DPRK. By capping the total relative amount of readily fissile isotopes that the DPRK can produce or possess, the IC can ensure the peaceful intent of the DPRK’s nuclear program. Furthermore, the relative quantities of more fissile isotopes can be easily detected and

\(^{457}\) *id* at ¶ 1.
\(^{458}\) *id* at ¶ 2.
\(^{459}\) *id* at ¶ 5.
thus prove any problematic non-compliance in the DPRK’s post-agreement program.

**Strength 12**

Iran is capped at a total quantity of 300kg of U-235 enriched to a maximum of 3.67% in the JCPOA. By including a total weight limit on the quantities of enriched uranium, especially when combined with the enrichment level caps, the JCPOA prevents a breakout capability that allows Iran to build a weapon between the time it abandons the JCPOA and the NPT and the point at which the IC can respond. Inclusion of a similar provision in an agreement with the DPRK would ensure that its potential post-agreement breakout (should that happen) could be delayed or that the IC would have time to reapply sanctions.

**Strength 13**

The JCPOA requires that spent fuel, from which plutonium can be recovered, be shipped out of Iran for the life of the agreement. This prevents Iran from extracting that plutonium for use in weapons. Any agreement with the DPRK should include a provision under which the DPRK ships spent fuel to Russia (due to its geographical proximity and status as a leading nuclear power) as that will prevent plutonium recovery by the DPRK.

**Strength 14**

The JCPOA called for all new reactor designs in Iran to be of the LWR type. By including similar provisions, or even requiring that design and construction be outsourced to members of the NSG, the IC can be sure that the risk of plutonium based proliferation is minimized.

**Strength 15**

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460 *id* at ¶ 7.
461 *id* at ¶ 8.
462 *id* at ¶ 9.
The JCPOA required that Iran adopt the Additional Protocols.\textsuperscript{463} The IAEA’s Additional Protocols allow freer access for inspectors. Inclusion of a similar provision will greatly diminish the DPRK’s ability to covertly proliferate. A model Additional Protocol was published by the IAEA in 1997 that sheds light on what a future agreement with the DPRK would look like.\textsuperscript{464} By tailoring an Additional Protocol to the specific situation in the DPRK, the IC can assuage many of the fears about covert proliferation on the part of the DPRK. Those fears have been the source of a substantial amount of distrust throughout the past few decades.\textsuperscript{465}

**Strength 16**

The JCPOA allows the IAEA to have a continuous presence in Iran for 25 years.\textsuperscript{466} Inclusion of a similar provision in a proposed agreement with the DPRK will facilitate a robust inspection and verification regime for an extended period of time.

**Strength 17**

Iran is clearly prohibited by the JCPOA from engaging in activities, even at the R&D level, that could lead to development of nuclear weapons.\textsuperscript{467} A similar proscription could be applied to the DPRK or even bolstered by requiring the DPRK to conduct all nuclear R&D in an extranational research facility. Potential locations for such a facility could be Japan, the ROK, the U.S. or Russia. Any research conducted in such an international setting could be considered open source.

**Strength 18**

\begin{itemize}
\item \textsuperscript{463} *id* at ¶ 13.
\item \textsuperscript{464} Int’l Atomic Energy Agency [IAEA], *Model Protocol Additional to the Agreements(s) Between State(s) and the International Atomic Energy Agency for the Application of Safeguards*, IAEA Doc. INFCIRC/540 (Sept. 1997).
\item \textsuperscript{465} *See generally* TEAM AMERICA: WORLD POLICE (Paramount, 2004).
\item \textsuperscript{466} Joint Comprehensive Plan of Action, Signed at Vienna Jul. 14, 2015, H.R. 3461, 114th Cong., S.C. Res. 2231, ¶ 15 (Jul. 20, 2015).
\item \textsuperscript{467} *id* at ¶ 16.
\end{itemize}
The JCPOA contains a clear-cut timeline. Inclusion of similar Implementation Plan in an agreement with the DPRK will prevent problems that could arise from non-performance, political upheavals in any of the parties, or disagreements over relatively minor facets in the execution of the agreement. By codifying the steps in the deal and binding the parties to the actions listed thereunder, the obligations become clearer and the pace of implementation can be accelerated.

Strength 19

The JCPOA’s Implementation Plan is tied to specific performance objectives as opposed to dates. By making obligation-performance the metric by which progress is advanced, the agreement prevents non-compliance and political bog-down. A similar quid-pro-quo progress mechanism should be included in an agreement affecting the nuclear disarmament of the DPRK.

Strength 20

The JCPOA established an integrated body to implement, execute, and resolve disputes called the Joint Commission. An agreement with the DPRK should provide an analogous body. That body should act as the global point of contact for the implementation and execution of the agreement and be the focus for issues of dispute resolution.

Strength 21

The Joint Commission established under the JCPOA is empowered to establish working groups. Those groups are intended to work on specific tasks and resolve specific issues. By extending the power to establish lawful functional bodies in a deal with the DPRK, the IC can

\[\text{id at ¶ 34-35.} \]
\[\text{id.} \]
\[\text{id at preface ¶ ix.} \]
\[\text{id at Annex IV § 1, 1-3 (due to a typographical error all subsections immediately under Annex IV are listed as paragraph 1 the referenced paragraph should be 3).} \]
ensure that issues are not allowed to stall in the bureaucratic no-man’s-land of international law. In the case of the DPRK, it would be beneficial to have the working groups be comprised of the relevant types of experts for the given situation or condition.

**Weaknesses**

**Weakness 1**

The JCPOA’s sanctions relief is designed to function as the carrot in the IC’s counterproliferation plan. 472 Those abatements can prevent the IC from most effectively coursing Iran into complying with the IC’s will in areas of concern, like terrorism, conventional weapons development and missile technology. While the JCPOA’s primary aim was solely nuclear weapons related issues, the broadness of the sanctions relief may slow the IC’s ability to economically push Iran in a desired way. This weakness can be mitigated in the case of the DPRK by including language stating that, in addition to exchanging sanctions relief for denuclearization of the peninsula, the IC expects concessions in the realms of human rights, civil rights, and other areas of concern. The conditions could be tied to other previously codified instruments of international law.

**Weakness 2**

The JCPOA includes language requiring parties to participate in “good faith and in a constructive atmosphere…” 473 This could become problematic in that accusations of bad faith and/or obstructionism could scuttle the deal while the governments of the parties pushed forward. In an agreement with the DPRK, the language should be shifted to imply an obligation on the governments of the parties to support the agreement through actions and words.

**Weakness 3**

\[ id \] at ¶ 18.  
\[ id \] at ¶ 28.
The staged expiration of certain JCPOA provisions could allow Iran to resume its nuclear program, unabated, after the restrictions expire. This weakness could be mitigated in an agreement with the DPRK by including provisions that permanently proscribe certain critical weapons development activities. A permanent total prohibition on plutonium and HEU possession and codification of a perpetual Additional Protocol could prevent the DPRK from ever covertly developing nuclear weapons.

Weakness 4

Under the JCPOA, Iran could retain a HWR at Arak. Even considering the redesigned type slated to be used at Arak, HWRs are inherently more proliferation-susceptible than more advanced LWR types. That weakness could be prevented in the case of the DPRK by requiring all nuclear reactors to use current counterproliferation technologies, also the IC should be willing to provide (or support the supply of) any required upgrades at market value.

Weakness 5

Due to a compilation of issues stemming from the foregoing issues, Iran may be able to covertly proliferate following several critical expirations in the JCPOA. In an agreement with the DPRK, this weakness can be avoided by including interminable requirements related to enrichment, inspections, reactors and processing capabilities. That agreement could also contain automatic and universal reintroduction of sanctions as a part of the agreement signed by all parties.

Omissions

Omission 1

The JCPOA contained no provisions related to Iran’s development of missiles, and the

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474 id at ¶ 5.
475 id at ¶ 8.
development thereof has been problematic for the IC. In an agreement with the DPRK, language proscribing the development of missiles that could deliver a nuclear weapon should be included. Additionally, a mechanism for determining the ability of the DPRK’s future missiles to carry nuclear warheads must be included. Space launch could also be one of the areas in which the IC could support a complete abandonment of the DPRK’s missile program.

**Omission 2**

The JCPOA does not contain a requirement for Iran to participate in a long-term regional strategy. This creates a dichotomy in which the IC may effectively be supporting a regional destabilizing state. Without adding some sort of long-term regional strategy to an agreement with the DPRK, the arrangement may well become a source of strife (albeit non-nuclear) for the entire region. Any agreement with the DRPK should include a strategy for its support of the long-term regional stability. The agreement could also suggest that IC provide logistical support for the DPRK’s forces to be included in global peace keeping missions. That would lend the DPRK the international legitimacy it desires and reduce the resource demands that currently induce crushing poverty throughout the DPRK.

**Omission 3**

The JCPOA does not effectively clarify the problems inherent in the use of dual use technologies. By including an annex to a proposed agreement with the DPRK which clarifies how dual use technologies may be permissible and under what conditions, the IC will allow and provide support for such dual use equipment. The issues surrounding the JCPOA’s omission could be effectively mitigated.

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476 Davenport 2, supra.
477 Einhorn, supra.
Omission 4

The JCPOA does not require Iran to assist the IC in combatting terrorism. Had such provisions been included, the main source of the IC’s concern over Iran could have been alleviated. Inclusion of a counterterrorism clause in an agreement effecting the denuclearization of the DPRK would solidly place the DPRK in a role to further its commitments to the IC without draining substantial resources or risking the problems witnessed with the post-JCPOA Iran situation.

Processes

Process 1

The first lesson learned from the process of achieving the JCPOA was that sanctions work.478 The sanctions placed on the DPRK by Resolution 2371 (2017) will likely have profound consequences for the DPRK’s economy.479 While the world waits to see what the IC will do following the DPRK’s nuclear test on September 2, 2017, the situation for the DPRK is not likely to improve. If the UN Security Council passes even more restrictive sanctions on the DPRK, the results may push the DPRK towards the negotiation table. If either the IC or the DPRK responds with force, the resultant degradation in the international situation will probably be beyond the ability to repair thorough diplomatic means.

Process 2

The second lesson learned from the JCPOA’s process that can be applied to the DPRK is that good faith negotiations can result in a workable instrument of international law. Similar doubt exists as to whether a similar agreement can be brokered with the DRPK. Suggestions

478 Marcus, supra.
479 S.C. Res. 2371 (2017) (the effects of a one third reduction in the DPRK’s export economy are hard to predict, but the impact is surely going to be significant).
have been made since the JCPOA’s adoption that the IC should open a dialog with the DPRK. If either a new series of talks are undertaken or the Six Party Talks are resumed, the result could be a workable agreement that effectively and permanently disarms the DPRK. The IC should immediately push for a round of talks with the DPRK.

Process 3

The third lesson learned from the process of achieving the JCPOA that can be applied to the IC’s counterproliferation efforts in the DPRK was the U.S. did not accede to the JCPOA as a treaty under Article 2 of the Constitution. A proposed agreement with the DPRK should mandate that the U.S. ratify it as a full-force treaty. The political problems inherent therein could be mitigated by including members of both major American political parties in the negotiations. Doing so could prevent the zero-sum political landscape in modern America from becoming a stumbling block.

Process 4

The passage of UN Security Council Resolution 2231 effectively codified the JCPOA into the corpus juris of international law. Any proposed agreement with the DPRK should be accepted in similar fashion by the Security Council. The full force of that codification provides a substantial block to the whimsy and capriciousness of the parties to the agreement. By allowing the UN to codify a proposed agreement into international law, the IC can protect itself from itself.

The lessons learned in the JCPOA can be applied to a proposed instrument of international law that effects the permanent disarmament of the DPRK with relative ease. Strengths can either be directly carried over, or made even stronger, weaknesses can be improved or omitted, omissions can be included, and the things learned in the process of achieving the deal
can be applied to get the best deal possible.
CHAPTER 9: CONCLUSIONS

“Then I saw a new heaven and a new earth; for the first heaven and the first earth passed away, and there is no longer any sea.”  \(^{480}\)

“Oh...Storm is threatin’ my very life today. If I don’t get some shelter, oh yeah, I’m goanna’ fade away...”  \(^{481}\)

The fact of the matter is that the world is in a rough spot when it comes to the nuclear proliferation situation in the DPRK. Things seem to be descending into a level of chaos and unpredictability unknown since the Cold War. The hope that remains in the bottom of this Pandora’s Box stems from the fact that the IC may be able to get the DPRK to the negotiation table and come to an agreement in which millions of lives are no longer at risk.

As the DPRK makes progress towards becoming a fully capable nuclear power, the IC will be faced with a few general options: (a) allow the DPRK to become a nuclear capable state, (b) prevent the proliferation of nuclear weapons to the DPRK through means of military force, or (c) try to force a diplomatic resolution by coercing the DPRK into adoption of (and adherence to) an instrument of international law that codifies the permanent disarmament thereof. United in common purpose, most of the world will not stand by as the DPRK becomes a fully nuclear capable power, thereby ruling out option (a). \(^{482}\) Option (b), forcing denuclearization through military action, is likely to incur prohibitive costs in terms of both lives lost and capital expenditures \(^{483}\). Option (c), coercive diplomacy and international law, is therefore the most tenable path that the IC should pursue in efforts to denuclearize the DPRK.

In pursuing an instrument of international law that disarms the DPRK, the IC should lean on the lessons learned in the last similar agreement. The JCPOA affected the conclusion of a

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\(^{480}\) Revelation 21:1.  
\(^{481}\) MICK JAGGER & KEITH RICHARDS, GIMME SHELTER (Decca Records/ABKCO 1969).  
\(^{483}\) See generally, Lendon, supra.
similar situation in Iran. That agreement had some strong points, some weaknesses, some omissions that experience shows should have been included, and lessons that can be learned from the processes that gave rise to the current situation between Iran and the IC. If the IC can rely on the lessons learned in the JCPOA, it can build the best possible deal with the DPRK.

The JCPOA’s strengths include: (a) a large group of stakeholders, (b) an unambiguous statement of purpose, (c) reliance on established international law, (d) an integrated dispute resolution mechanism, (e) reliance on the IAEA for inspections, (f) free use of peaceful nuclear technologies, (g) periodic review, (h) fuel cycle control, (i) limits on enrichment, (j) limits on geographical footprint of Iran’s nuclear program, (k) limits on the maximum enrichment of uranium, (l) maximum quantities of fissile material, (m) mandatory export of plutonium rich spent fuel, (n) a commitment to build LWRs, (o) a strong Additional Protocol, (p) long-term IAEA presence, (q) a proscription on weapons development related technologies, (r) a clear timeline, (s) the Joint Commission, and (t) subordinate working groups. If applied to an agreement with the DPRK, these strengths could foster the best possible deal.

The weaknesses in the JCPOA include potentially over-broad sanctions relief, ambiguous language, terms that expire, HWR retention, and the potential for Iran to covertly proliferate in the years to come. If the IC relies on the lessons learned in the JCPOA, it may be able to craft agreement with the DPRK that more effectively prevents it from developing, possessing, or using nuclear weapons.

The omissions in the JCPOA that could be included in an agreement with the DPRK include controls on ballistic missiles, a long-term regional strategy, dual use technology limitations, and a requirement for support for counter terrorism. By leaning on the lessons learned from the things omitted from the JCPOA, the IC can improve a proposed instrument with
the DPRK.

Finally, the lessons learned in the process of achieving the JCPOA can be applied to an agreement with the DPRK by using targeted sanctions to force it to the table, using and controlling the negotiations to ensure that an effective agreement is reached, ensuring the U.S. ratifies the agreement as a treaty, and that the UN passes a resolution that enshrines the agreement into international law.

Because the DPRK views its nuclear program in a neorealist sense, as the only way to counter the hegemony that it views as being an existential threat, it will be hard-pressed to give it up. The IC must therefore ensure that the DPRK can continue to exist if it is willing to abandon its nuclear weapons program. The problem becomes the crux of the DPRK’s neorealism and the IC’s neoliberalism. The DPRK wants to survive and the IC seems to be a threat to that goal; therefore, the IC must ensure its approach allows the DPRK to survive while getting what it wants.

The resolution to this problem is likely to be a matter of concern for many in the weeks, months and years to come. If the solution includes an instrument of international law that affects the DPRK’s denuclearization, the IC can apply the lessons learned from the JCPOA to ensure that the agreement adopts the strengths, mitigates the weaknesses, includes the omissions, and applies the best processes from the JCPOA. Application of those lessons may prove to be the difference between a peaceful solution and thermonuclear war. It is hoped that cooler heads will prevail and the IC will be able to codify an agreement that denuclearizes the DPRK.

The criticality of nuclear proliferation demands that every effort be taken to ensure that the instruments related to the prevention thereof are crafted as flawlessly as possible. Through painstaking analysis of the JCPOA, at each stage of its lifecycle, the IC can apply lessons learned
therefrom to an instrument of international law regarding the DPRK to perhaps more effectively counter the proliferation of nuclear weapons.
ADDENDUM 1. ANNOTATED COPY OF THE JCPOA

Hereinafter follows an annotated and abridged copy of the JCPOA. Sections containing information that is not relevant in the discussion at hand have been removed and annotated. This addendum is intended to support identification of the JCPOA’s strengths, weaknesses, and omissions. Highlights have also been annotated as being relevant to the construction or execution of the agreement but that cannot be placed in one category or another. Omissions have been listed following the text along with short explanations of their impact. A table of citations notes is included at that end of this Addendum to prevent footnote citation from cluttering the analysis. Page numbers therein correspond to this annotated copy.

Joint Comprehensive Plan of Action
Vienna, 14 July 2015

PREFACE
The E3/EU+3 (China, France, Germany, the Russian Federation, the United Kingdom and the United States, with the High Representative of the European Union for Foreign Affairs and Security Policy) and the Islamic Republic of Iran welcome this historic Joint Comprehensive Plan of Action (JCPOA), which will ensure that Iran’s nuclear programme will be exclusively peaceful, and mark a fundamental shift in their approach to this issue. They anticipate that full implementation of this JCPOA will positively contribute to regional and international peace and security. Iran reaffirms that under no circumstances will Iran ever seek, develop or acquire any nuclear weapons.

Iran envisions that this JCPOA will allow it to move forward with an exclusively peaceful, indigenous nuclear programme, in line with scientific and economic considerations, in accordance with the JCPOA, and with a view to building confidence and encouraging international cooperation. In this context, the initial mutually determined limitations described in this JCPOA will be followed by a gradual evolution, at a reasonable pace, of Iran’s peaceful nuclear programme, including its enrichment activities, to a commercial programme for exclusively peaceful purposes, consistent with international non-proliferation norms.

The E3/EU+3 envision that the implementation of this JCPOA will progressively allow them to gain confidence in the exclusively peaceful nature of Iran’s programme. The JCPOA reflects mutually determined parameters, consistent with practical needs, with agreed limits on the scope of Iran’s nuclear programme, including enrichment activities and R&D. The JCPOA addresses the E3/EU+3’s concerns, including through comprehensive measures providing for transparency and verification.

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485 S1. Large group of stakeholders ensures broad support and eases enforcement.
486 H1. The peaceful pursuit of nuclear technology is a touchstone of the NPT. Citation note 1.
487 S2. Unambiguous permanent affirmation of the purpose behind the agreement.
The JCPOA will produce the comprehensive lifting of all UN Security Council sanctions as well as multilateral and national sanctions related to Iran’s nuclear programme\(^{488}\), including steps on access in areas of trade, technology, finance, and energy.

**PREAMBLE AND GENERAL PROVISIONS**

i. The Islamic Republic of Iran and the E3/EU+3 (China, France, Germany, the Russian Federation, the United Kingdom and the United States, with the High Representative of the European Union for Foreign Affairs and Security Policy) have decided upon this long-term Joint Comprehensive Plan of Action (JCPOA). This JCPOA, reflecting a step-by-step approach, includes the reciprocal commitments as laid down in this document and the annexes hereto and is to be endorsed by the United Nations (UN) Security Council.\(^{489}\)

ii. The full implementation of this JCPOA will ensure the exclusively peaceful nature of Iran’s nuclear programme.

iii. Iran reaffirms that under no circumstances will Iran ever seek, develop or acquire any nuclear weapons.

iv. Successful implementation of this JCPOA will enable Iran to fully enjoy its right to nuclear energy for peaceful purposes under the relevant articles of the Nuclear Non-Proliferation Treaty (NPT) in line with its obligations therein, and the Iranian nuclear programme will be treated in the same manner as that of any other non-nuclear-weapon state party to the NPT.

v. This JCPOA will produce the comprehensive lifting of all UN Security Council sanctions as well as multilateral and national sanctions related to Iran’s nuclear programme, including steps on access in areas of trade, technology, finance and energy.

vi. The E3/EU+3 and Iran reaffirm their commitment to the purposes and principles of the United Nations as set out in the UN Charter.\(^{490}\)

vii. The E3/EU+3 and Iran acknowledge that the NPT remains the cornerstone of the nuclear non-proliferation regime and the essential foundation for the pursuit of nuclear disarmament and for the peaceful uses of nuclear energy.

viii. The E3/EU+3 and Iran commit to implement this JCPOA in good faith and in a constructive atmosphere, based on mutual respect, and to refrain from any action inconsistent with the letter, spirit and intent of this JCPOA that would undermine its successful implementation.\(^{491}\) The E3/EU+3 will refrain from imposing discriminatory regulatory and procedural requirements in lieu of the sanctions and restrictive measures covered by this JCPOA. This JCPOA builds on the implementation of the Joint Plan of Action (JPOA) agreed in Geneva on 24 November 2013.\(^{492}\)

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\(^{488}\) W1. There have been problems with lifting some of the sanctions. Citation note 2.

\(^{489}\) H2. Codified by the UN under S.C. Res. 2231 on 20 Jul. 2015. Citation note 3.

\(^{490}\) H3. UN Charter commits all states to the preservation of peace. Citation note 4.

\(^{491}\) W2. This can be ambiguous and the sentiments of the government and of the general population may differ. Citation note 5.

\(^{492}\) S3. Building on established legal history allowed for clarity of purpose and cross-reference to specific actions and sanctions. Citation note 6.
ix. A Joint Commission consisting of the E3/EU+3 and Iran will be established to monitor the implementation of this JCPOA and will carry out the functions provided for in this JCPOA. 493 This Joint Commission will address issues arising from the implementation of this JCPOA and will operate in accordance with the provisions as detailed in the relevant annex.

x. The International Atomic Energy Agency (IAEA) will be requested to monitor and verify the voluntary nuclear-related measures as detailed in this JCPOA. 494 The IAEA will be requested to provide regular updates to the Board of Governors, and as provided for in this JCPOA, to the UN Security Council. All relevant rules and regulations of the IAEA with regard to the protection of information will be fully observed by all parties involved.

xi. All provisions and measures contained in this JCPOA are only for the purpose of its implementation between E3/EU+3 and Iran and should not be considered as setting precedents for any other state or for fundamental principles of international law and the rights and obligations under the NPT and other relevant instruments, as well as for internationally recognised principles and practices. 495

xii. Technical details of the implementation of this JCPOA are dealt with in the annexes to this document. 496

xiii. The EU and E3+3 countries and Iran, in the framework of the JCPOA, will cooperate, as appropriate, in the field of peaceful uses of nuclear energy and engage in mutually determined civil nuclear cooperation projects as detailed in Annex III, including through IAEA involvement. 497

xiv. The E3+3 will submit a draft resolution to the UN Security Council endorsing this JCPOA affirming that conclusion of this JCPOA marks a fundamental shift in its consideration of this issue and expressing its desire to build a new relationship with Iran. This UN Security Council resolution will also provide for the termination on Implementation Day of provisions imposed under previous resolutions; establishment of specific restrictions; and conclusion of consideration of the Iran nuclear issue by the UN Security Council 10 years after the Adoption Day. 498

xv. The provisions stipulated in this JCPOA will be implemented for their respective durations as set forth below and detailed in the annexes.

xvi. The E3/EU+3 and Iran will meet at the ministerial level every 2 years, or earlier if needed, in order to review and assess progress and to adopt appropriate decisions by consensus. 499

493 S4. Establishes a resolution mechanism that simplifies problem resolution.
494 S5. Relies on established and chartered organizations for verification. Citation note 7.
495 H4. The argument herein is not one of legal precedence but of historically justified prudence.
496 H5. Clear format prevents technical language from obscuring the conciseness of the treaty while allowing technical aspects to be fully covered.
497 S6. This proves that the IC is willing to support and advance the peaceful nuclear development of Iran.
498 W3. This has been viewed as a problem by some. It is assumed that the expiration of the JCPOA in the 10 to 15-year range merely delays their proliferation. Citation note 8.
I.

Iran and E3/EU+3 will take the following voluntary measures within the timeframe as detailed in this JCPOA and its Annexes

NUCLEAR

A. ENRICHMENT, ENRICHMENT R&D, STOCKPILES

1. Iran’s long term plan includes certain agreed limitations on all uranium enrichment and uranium enrichment-related activities including certain limitations on specific research and development (R&D) activities for the first 8 years, to be followed by gradual evolution, at a reasonable pace, to the next stage of its enrichment activities for exclusively peaceful purposes, as described in Annex I. Iran will abide by its voluntary commitments, as expressed in its own long-term enrichment and enrichment R&D plan to be submitted as part of the initial declaration for the Additional Protocol to Iran’s Safeguards Agreement.

2. Iran will begin phasing out its IR-1 centrifuges in 10 years. During this period, Iran will keep its enrichment capacity at Natanz at up to a total installed uranium enrichment capacity of 5060 IR-1 centrifuges. Excess centrifuges and enrichment-related infrastructure at Natanz will be stored under IAEA continuous monitoring, as specified in Annex I.

3. Iran will continue to conduct enrichment R&D in a manner that does not accumulate enriched uranium. Iran's enrichment R&D with uranium for 10 years will only include IR-4, IR-5, IR-6 and IR-8 centrifuges as laid out in Annex I, and Iran will not engage in other isotope separation technologies for enrichment of uranium as specified in Annex I. Iran will continue testing IR-6 and IR-8 centrifuges, and will commence testing of up to 30 IR-6 and IR-8 centrifuges after eight and a half years, as detailed in Annex I.

4. As Iran will be phasing out its IR-1 centrifuges, it will not manufacture or assemble other centrifuges, except as provided for in Annex I, and will replace failed centrifuges with centrifuges of the same type. Iran will manufacture advanced centrifuge machines only for the purposes specified in this JCPOA. From the end of the eighth year, and as described in Annex I, Iran will start to manufacture agreed numbers of IR-6 and IR-8 centrifuge machines without rotors and will store all of the manufactured machines at Natanz, under IAEA continuous monitoring until they are needed under Iran's long-term enrichment and enrichment R&D plan.

5. Based on its long-term plan, for 15 years, Iran will carry out its uranium enrichment-related activities, including safeguarded R&D exclusively in the Natanz Enrichment facility, keep its level of uranium enrichment at up to 3.67%,
and, at Fordow, refrain from any uranium enrichment and uranium enrichment R&D and from keeping any nuclear material.  

6. Iran will convert the Fordow facility into a nuclear, physics and technology centre. International collaboration including in the form of scientific joint partnerships will be established in agreed areas of research. 1044 IR-1 centrifuges in six cascades will remain in one wing at Fordow. Two of these cascades will spin without uranium and will be transitioned, including through appropriate infrastructure modification, for stable isotope production. The other four cascades with all associated infrastructure will remain idle. All other centrifuges and enrichment-related infrastructure will be removed and stored under IAEA continuous monitoring as specified in Annex I.

7. During the 15 year period, and as Iran gradually moves to meet international qualification standards for nuclear fuel produced in Iran, it will keep its uranium stockpile under 300 kg of up to 3.67% enriched uranium hexafluoride (UF6) or the equivalent in other chemical forms. The excess quantities are to be sold based on international prices and delivered to the international buyer in return for natural uranium delivered to Iran, or to be down-blended to natural uranium level. Enriched uranium in fabricated fuel assemblies from Russia or other sources for use in Iran’s nuclear reactors will not be counted against the above stated 300 kg UF6 stockpile, if the criteria set out in Annex I are met with regard to other sources. The Joint Commission will support assistance to Iran, including through IAEA technical cooperation as appropriate, in meeting international qualification standards for nuclear fuel produced in Iran. All remaining uranium oxide enriched to between 5% and 20% will be fabricated into fuel for the Tehran Research Reactor (TRR). Any additional fuel needed for the TRR will be made available to Iran at international market prices.

B. ARAK, HEAVY WATER, REPROCESSING

8. Iran will redesign and rebuild a modernised heavy water research reactor in Arak, based on an agreed conceptual design, using fuel enriched up to 3.67 %, in a form of an international partnership which will certify the final design. The reactor will support peaceful nuclear research and radioisotope production for medical and industrial purposes. The redesigned and rebuilt Arak reactor will not produce weapons grade plutonium. Except for the first core load, all of the activities for redesigning and manufacturing of the fuel assemblies for the redesigned reactor will be carried out in Iran. All spent fuel from Arak will be shipped out of Iran for the lifetime of the reactor. This international partnership

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504 S11. 3.67% is well below what is required for explosive purposes. Citation note 10.
505 S12. 300 kg at that enrichment level is under the threshold required for weaponization. Citation note 11.
506 H6. This allows for advanced power production without running the risk of being a proliferation concern. Citation note 12.
507 H7. This allows Iran to buy fuel from the international market after its stock of 5%-20% U-235 has been consumed.
508 W4. Heavy water reactors are a proliferation concern. Citation note 13.
will include participating E3/EU+3 parties, Iran and such other countries as may be mutually determined. Iran will take the leadership role as the owner and as the project manager and the E3/EU+3 and Iran will, before Implementation Day, conclude an official document which would define the responsibilities assumed by the E3/EU+3 participants.

9. Iran plans to keep pace with the trend of international technological advancement in relying on light water for its future power and research reactors with enhanced international cooperation, including assurance of supply of necessary fuel.\textsuperscript{510}

10. There will be no additional heavy water reactors or accumulation of heavy water in Iran for 15 years. All excess heavy water will be made available for export to the international market.

11. Iran intends to ship out all spent fuel for all future and present power and research nuclear reactors, for further treatment or disposition as provided for in relevant contracts to be duly concluded with the recipient party.

12. For 15 years Iran will not, and does not intend to thereafter, engage in any spent fuel reprocessing or construction of a facility capable of spent fuel reprocessing, or reprocessing R&D activities leading to a spent fuel reprocessing capability, with the sole exception of separation activities aimed exclusively at the production of medical and industrial radio-isotopes from irradiated enriched uranium targets.\textsuperscript{511}

C. TRANSPARENCY AND CONFIDENCE BUILDING MEASURES

13. Consistent with the respective roles of the President and Majlis (Parliament), Iran will provisionally apply the Additional Protocol to its Comprehensive Safeguards Agreement in accordance with Article 17(b) of the Additional Protocol, proceed with its ratification within the timeframe as detailed in Annex V and fully implement the modified Code 3.1 of the Subsidiary Arrangements to its Safeguards Agreement.\textsuperscript{512}

14. Iran will fully implement the "Roadmap for Clarification of Past and Present Outstanding Issues" agreed with the IAEA, containing arrangements to address past and present issues of concern relating to its nuclear programme as raised in the annex to the IAEA report of 8 November 2011 (GOV/2011/65). Full implementation of activities undertaken under the Roadmap by Iran will be completed by 15 October 2015, and subsequently the Director General will provide by 15 December 2015 the final assessment on the resolution of all past and present outstanding issues to the Board of Governors, and the E3+3, in their capacity as members of the Board of Governors, will submit a resolution to the Board of Governors for taking necessary action, with a view to closing the issue, without prejudice to the competence of the Board of Governors.\textsuperscript{513}

\textsuperscript{510} S14. Light Water reactors are proliferation resistant. Citation note 15.

\textsuperscript{511} W5. There is a potential for covert proliferation efforts after the 15-year limit expires. Citation note 16.

\textsuperscript{512} S15. The additional protocols are essential for a valid enforcement/compliance verification system. Citation note 17.

\textsuperscript{513} H8. Defers to previously agreed-to document. Citation note 18.
15. Iran will allow the IAEA to monitor the implementation of the voluntary measures for their respective durations, as well as to implement transparency measures, as set out in this JCPOA and its Annexes. These measures include: a long-term IAEA presence in Iran; IAEA monitoring of uranium ore concentrate produced by Iran from all uranium ore concentrate plants for 25 years; containment and surveillance of centrifuge rotors and bellows for 20 years; use of IAEA approved and certified modern technologies including on-line enrichment measurement and electronic seals; and a reliable mechanism to ensure speedy resolution of IAEA access concerns for 15 years, as defined in Annex I.  

16. Iran will not engage in activities, including at the R&D level, that could contribute to the development of a nuclear explosive device, including uranium or plutonium metallurgy activities, as specified in Annex I.

17. Iran will cooperate and act in accordance with the procurement channel in this JCPOA, as detailed in Annex IV, endorsed by the UN Security Council resolution.  

SANCTIONS


19. The EU will terminate all provisions of the EU Regulation, as subsequently amended, implementing all nuclear-related economic and financial sanctions, including related designations, simultaneously with the IAEA-verified implementation of agreed nuclear-related measures by Iran as specified in Annex V, which cover all sanctions and restrictive measures in the following areas, as described in Annex II:

i. Transfers of funds between EU persons and entities, including financial institutions, and Iranian persons and entities, including financial institutions;

ii. Banking activities, including the establishment of new correspondent banking relationships and the opening of new branches and subsidiaries of Iranian banks in the territories of EU Member States;

iii. Provision of insurance and reinsurance;

iv. Supply of specialised financial messaging services, including SWIFT, for persons and entities set out in Attachment 1 to Annex II, including the Central Bank of Iran and Iranian financial institutions;

v. Financial support for trade with Iran (export credit, guarantees or insurance);

vi. Commitments for grants, financial assistance and concessional loans to the Government of Iran;

514 S16. Will enable expedited IAEA verification for 25 years.

515 S17. Straightforward and declarative.

516 H9. Resolution consolidation and sanctions relief.

517 H10: Relief of target sanctions is the carrot/stick combination that drove Iran to accede to the agreement.
vii. Transactions in public or public-guaranteed bonds;
viii. Import and transport of Iranian oil, petroleum products, gas and petrochemical products;
ix. Export of key equipment or technology for the oil, gas and petrochemical sectors;
x. Investment in the oil, gas and petrochemical sectors;
xi. Export of key naval equipment and technology;
 xii. Design and construction of cargo vessels and oil tankers;
 xiii. Provision of flagging and classification services;
 xiv. Access to EU airports of Iranian cargo flights;
xv. Export of gold, precious metals and diamonds;
xvi. Delivery of Iranian banknotes and coinage;
xvii. Export of graphite, raw or semi-finished metals such as aluminum and steel, and export or software for integrating industrial processes;
xviii. Designation of persons, entities and bodies (asset freeze and visa ban) set out in Attachment 1 to Annex II; and
xix. Associated services for each of the categories above.

20. The EU will terminate all provisions of the EU Regulation implementing all EU proliferation-related sanctions, including related designations, 8 years after Adoption Day or when the IAEA has reached the Broader Conclusion that all nuclear material in Iran remains in peaceful activities, whichever is earlier.

21. The United States will cease the application, and will continue to do so, in accordance with this JCPOA of the sanctions specified in Annex II to take effect simultaneously with the IAEA-verified implementation of the agreed nuclear-related measures by Iran as specified in Annex V. Such sanctions cover the following areas as described in Annex II:
i. Financial and banking transactions with Iranian banks and financial institutions as specified in Annex II, including the Central Bank of Iran and specified individuals and entities identified as Government of Iran by the Office of Foreign Assets Control on the Specially Designated Nationals and Blocked Persons List (SDN List), as set out in Attachment 3 to Annex II (including the opening and maintenance of correspondent and payable through-accounts at non-U.S. financial institutions, investments, foreign exchange transactions and letters of credit);
ii. Transactions in Iranian Rial;
 iii. Provision of U.S. banknotes to the Government of Iran;
iv. Bilateral trade limitations on Iranian revenues abroad, including limitations on their transfer;
v. Purchase, subscription to, or facilitation of the issuance of Iranian sovereign debt, including governmental bonds;
vi. Financial messaging services to the Central Bank of Iran and Iranian financial institutions set out in Attachment 3 to Annex II;
vii. Underwriting services, insurance, or reinsurance;
viii. Efforts to reduce Iran’s crude oil sales;
ix. Investment, including participation in joint ventures, goods, services, information, technology and technical expertise and support for Iran's oil, gas
and petrochemical sectors;
x. Purchase, acquisition, sale, transportation or marketing of petroleum, petrochemical products and natural gas from Iran;
xi. Export, sale or provision of refined petroleum products and petrochemical products to Iran;

xii. Transactions with Iran’s energy sector;

xiii. Transactions with Iran’s shipping and shipbuilding sectors and port operators;

xiv. Trade in gold and other precious metals;

xv. Trade with Iran in graphite, raw or semi-finished metals such as aluminum and steel, coal, and software for integrating industrial processes;

xvi. Sale, supply or transfer of goods and services used in connection with Iran’s automotive sector;

xvii. Sanctions on associated services for each of the categories above;

xviii. Remove individuals and entities set out in Attachment 3 to Annex II from the SDN List, the Foreign Sanctions Evaders List, and/or the Non-SDN Iran Sanctions Act List; and

xix. Terminate Executive Orders 13574, 13590, 13622, and 13645, and Sections 5 – 7 and 15 of Executive Order 13628.

22. The United States will, as specified in Annex II and in accordance with Annex V, allow for the sale of commercial passenger aircraft and related parts and services to Iran; license non-U.S. persons that are owned or controlled by a U.S. person to engage in activities with Iran consistent with this JCPOA; and license the importation into the United States of Iranian-origin carpets and foodstuffs.

23. Eight years after Adoption Day or when the IAEA has reached the Broader Conclusion that all nuclear material in Iran remains in peaceful activities, whichever is earlier, the United States will seek such legislative action as may be appropriate to terminate, or modify to effectuate the termination of, the sanctions specified in Annex II on the acquisition of nuclear-related commodities and services for nuclear activities contemplated in this JCPOA, to be consistent with the U.S. approach to other non-nuclear-weapon states under the NPT.

24. The E3/EU and the United States specify in Annex II a full and complete list of all nuclear-related sanctions or restrictive measures and will lift them in accordance with Annex V. Annex II also specifies the effects of the lifting of sanctions beginning on "Implementation Day". If at any time following the Implementation Day, Iran believes that any other nuclear-related sanction or restrictive measure of the E3/EU+3 is preventing the full implementation of the sanctions lifting as specified in this JCPOA, the JCPOA participant in question will consult with Iran with a view to resolving the issue and, if they concur that lifting of this sanction or restrictive measure is appropriate, the JCPOA participant in question will take appropriate action. If they are not able to resolve the issue, Iran or any member of the E3/EU+3 may refer the issue to the Joint Commission.

25. If a law at the state or local level in the United States is preventing the implementation of the sanctions lifting as specified in this JCPOA, the United States will take appropriate steps, taking into account all available authorities,
with a view to achieving such implementation. The United States will actively encourage officials at the state or local level to take into account the changes in the U.S. policy reflected in the lifting of sanctions under this JCPOA and to refrain from actions inconsistent with this change in policy.  

26. The EU will refrain from re-introducing or re-imposing the sanctions that it has terminated implementing under this JCPOA, without prejudice to the dispute resolution process provided for under this JCPOA. There will be no new nuclear-related UN Security Council sanctions and no new EU nuclear-related sanctions or restrictive measures. The United States will make best efforts in good faith to sustain this JCPOA and to prevent interference with the realisation of the full benefit by Iran of the sanctions lifting specified in Annex II. The U.S. Administration, acting consistent with the respective roles of the President and the Congress, will refrain from re-introducing or re-imposing the sanctions specified in Annex II that it has ceased applying under this JCPOA, without prejudice to the dispute resolution process provided for under this JCPOA. The U.S. Administration, acting consistent with the respective roles of the President and the Congress, will refrain from imposing new nuclear-related sanctions. Iran has stated that it will treat such a re-introduction or re-imposition of the sanctions specified in Annex II, or such an imposition of new nuclear-related sanctions, as grounds to cease performing its commitments under this JCPOA in whole or in part.  

27. The E3/EU+3 will take adequate administrative and regulatory measures to ensure clarity and effectiveness with respect to the lifting of sanctions under this JCPOA. The EU and its Member States as well as the United States will issue relevant guidelines and make publicly accessible statements on the details of sanctions or restrictive measures which have been lifted under this JCPOA. The EU and its Member States and the United States commit to consult with Iran regarding the content of such guidelines and statements, on a regular basis and whenever appropriate.  

28. The E3/EU+3 and Iran commit to implement this JCPOA in good faith and in a constructive atmosphere, based on mutual respect, and to refrain from any action inconsistent with the letter, spirit and intent of this JCPOA that would undermine its successful implementation. Senior Government officials of the E3/EU+3 and Iran will make every effort to support the successful implementation of this JCPOA including in their public statements[2]. The E3/EU+3 will take all measures required to lift sanctions and will refrain from imposing exceptional or discriminatory regulatory and procedural requirements in lieu of the sanctions and restrictive measures covered by the JCPOA.  

29. The EU and its Member States and the United States, consistent with their respective laws, will refrain from any policy specifically intended to directly and  

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519 W6. Some people view this as a preemption of the sovereignty of the U.S. President and Congress. Citation note 19.
520 H12. Reference statements made by President Trump, before and after being elected. Citation note 20.
adversely affect the normalisation of trade and economic relations with Iran inconsistent with their commitments not to undermine the successful implementation of this JCPOA.

30. The E3/EU+3 will not apply sanctions or restrictive measures to persons or entities for engaging in activities covered by the lifting of sanctions provided for in this JCPOA, provided that such activities are otherwise consistent with E3/EU+3 laws and regulations in effect. Following the lifting of sanctions under this JCPOA as specified in Annex II, ongoing investigations on possible infringements of such sanctions may be reviewed in accordance with applicable national laws.

31. Consistent with the timing specified in Annex V, the EU and its Member States will terminate the implementation of the measures applicable to designated entities and individuals, including the Central Bank of Iran and other Iranian banks and financial institutions, as detailed in Annex II and the attachments thereto. Consistent with the timing specified in Annex V, the United States will remove designation of certain entities and individuals on the Specially Designated Nationals and Blocked Persons List, and entities and individuals listed on the Foreign Sanctions Evaders List, as detailed in Annex II and the attachments thereto.

32. EU and E3+3 countries and international participants will engage in joint projects with Iran, including through IAEA technical cooperation projects, in the field of peaceful nuclear technology, including nuclear power plants, research reactors, fuel fabrication, agreed joint advanced R&D such as fusion, establishment of a state-of-the-art regional nuclear medical centre, personnel training, nuclear safety and security, and environmental protection, as detailed in Annex III. They will take necessary measures, as appropriate, for the implementation of these projects.

33. The E3/EU+3 and Iran will agree on steps to ensure Iran’s access in areas of trade, technology, finance and energy. The EU will further explore possible areas for cooperation between the EU, its Member States and Iran, and in this context consider the use of available instruments such as export credits to facilitate trade, project financing and investment in Iran.

**IMPLEMENTATION PLAN**

34. Iran and the E3/EU+3 will implement their JCPOA commitments according to the sequence specified in Annex V. The milestones for implementation are as follows:

i. Finalisation Day is the date on which negotiations of this JCPOA are concluded among the E3/EU+3 and Iran, to be followed promptly by submission of the resolution endorsing this JCPOA to the UN Security Council for adoption without delay.

ii. Adoption Day is the date 90 days after the endorsement of this JCPOA by the UN Security Council, or such earlier date as may be determined by mutual consent of the JCPOA participants, at which time this JCPOA and the commitments in this
JCPOA come into effect. Beginning on that date, JCPOA participants will make necessary arrangements and preparations for the implementation of their JCPOA commitments.

iii. Implementation Day is the date on which, simultaneously with the IAEA report verifying implementation by Iran of the nuclear-related measures described in Sections 15.1. to 15.11 of Annex V, the EU and the United States take the actions described in Sections 16 and 17 of Annex V respectively and in accordance with the UN Security Council resolution, the actions described in Section 18 of Annex V occur at the UN level.

iv. Transition Day is the date 8 years after Adoption Day or the date on which the Director General of the IAEA submits a report stating that the IAEA has reached the Broader Conclusion that all nuclear material in Iran remains in peaceful activities, whichever is earlier. On that date, the EU and the United States will take the actions described in Sections 20 and 21 of Annex V respectively and Iran will seek, consistent with the Constitutional roles of the President and Parliament, ratification of the Additional Protocol.

v. UN Security Council Resolution Termination Day is the date on which the UN Security Council resolution endorsing this JCPOA terminates according to its terms, which is to be 10 years from Adoption Day, provided that the provisions of previous resolutions have not been reinstated. On that date, the EU will take the actions described in Section 25 of Annex V.

35. The sequence and milestones set forth above and in Annex V are without prejudice to the duration of JCPOA commitments stated in this JCPOA.

**DISPUTE RESOLUTION MECHANISM**

36. If Iran believed that any or all of the E3/EU+3 were not meeting its commitments under this JCPOA, Iran could refer the issue to the Joint Commission for resolution; similarly, if any of the E3/EU+3 believed that Iran was not meeting its commitments under this JCPOA, any of the E3/EU+3 could do the same. The Joint Commission would have 15 days to resolve the issue, unless the time period was extended by consensus. After Joint Commission consideration, any participant could refer the issue to Ministers of Foreign Affairs, if it believed the compliance issue had not been resolved. Ministers would have 15 days to resolve the issue, unless the time period was extended by consensus. After Joint Commission consideration – in parallel with (or in lieu of) review at the Ministerial level - either the complaining participant or the participant whose performance is in question could request that the issue be considered by an Advisory Board, which would consist of three members (one each appointed by the participants in the dispute and a third independent member). The Advisory Board should provide a non-binding opinion on the compliance issue within 15 days. If, after this 30-day process the issue is not resolved, the Joint Commission would consider the opinion of the Advisory Board.

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522 S19. JCPOA commitments must be met to advance in the timeline.

523 S20. A codified, mandatory, and independent dispute resolution mechanism allows for resolution of problems within the context of the JCPOA and prevents extraneous issues from becoming a problem.
Board for no more than 5 days in order to resolve the issue. If the issue still has not been resolved to the satisfaction of the complaining participant, and if the complaining participant deems the issue to constitute significant nonperformance, then that participant could treat the unresolved issue as grounds to cease performing its commitments under this JCPOA in whole or in part and/or notify the UN Security Council that it believes the issue constitutes significant non-performance.

37. Upon receipt of the notification from the complaining participant, as described above, including a description of the good-faith efforts the participant made to exhaust the dispute resolution process specified in this JCPOA, the UN Security Council, in accordance with its procedures, shall vote on a resolution to continue the sanctions lifting. If the resolution described above has not been adopted within 30 days of the notification, then the provisions of the old UN Security Council resolutions would be re-imposed, unless the UN Security Council decides otherwise. In such event, these provisions would not apply with retroactive effect to contracts signed between any party and Iran or Iranian individuals and entities prior to the date of application, provided that the activities contemplated under and execution of such contracts are consistent with this JCPOA and the previous and current UN Security Council resolutions.

The UN Security Council, expressing its intention to prevent the reapplication of the provisions if the issue giving rise to the notification is resolved within this period, intends to take into account the views of the States involved in the issue and any opinion on the issue of the Advisory Board. Iran has stated that if sanctions are reinstated in whole or in part, Iran will treat that as grounds to cease performing its commitments under this JCPOA in whole or in part.

[1] The provisions of this Resolution do not constitute provisions of this JCPOA.


Annex I – Nuclear-related measures
Annex II – Sanctions-related commitments
Annex III - Civil Nuclear Cooperation
Annex IV – Joint Commission

1. Establishment, Composition, and Coordinator

1. The Joint Commission is established to carry out the functions assigned to it in the JCPOA, including its Annexes.

1. The Joint Commission is comprised of representatives of Iran and the E3/EU+3.

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524 Annex I of the JCPOA covers specific technical limitations and definitions. It has been herein omitted as the specificity is irrelevant to the legal discussion at hand.

525 Annex II of the JCPOA provides in-depth analysis of the sanctions that drove Iran to the table and abatement thereof after compliance has been verified. It has been herein omitted as the specificity is irrelevant to the legal discussion at hand.

526 Annex III of the JCPOA provides specific technical requirements for the civil nuclear cooperation between the IC and Iran. It has been herein omitted as the specificity is irrelevant to the legal discussion at hand.

527 S21. Annex IV outlines the makeup, function and purpose of the Joint Commission which serves as the point of contact for implementation and execution of the JCPOA.
(China, France, Germany, the Russian Federation, the United Kingdom, and the United States, with the High Representative of the Union for Foreign Affairs and Security Policy), together, the JCPOA participants.

1. The Joint Commission may establish Working Groups in particular areas, as appropriate.

1. The High Representative of the Union for Foreign Affairs and Security Policy (‘High Representative’), or his/her designated representative will serve as the Coordinator of the Joint Commission.

2. **Functions**

2. The Joint Commission will perform the following functions:

1. Review and approve the final design for the modernized heavy water research reactor and the design of the subsidiary laboratories prior to the commencement of construction, and review and approve the fuel design for the modernized heavy water research reactor as provided for in Section B of Annex I;

2. Review and approve, upon request by Iran, development, acquisition, construction or operation of hot cells (containing a cell or interconnected cells), shielded cells or shielded glove boxes with dimensions beyond 6 cubic meters in volume and specifications set out in Annex I of the Additional Protocol, as provided for in paragraph 21 of Annex I;

3. Review and approve plans submitted by Iran to initiate R&D on uranium metal based TRR fuel, as provided for in paragraph 26 of Annex I;

4. Review and approve, upon request by Iran, projects on new types of centrifuges to proceed to a prototype stage for mechanical testing, as provided for in paragraph 43 of Annex I;

5. Receive information in advance about the specific projects that will be undertaken at Fordow, as provided for in paragraph 44 of Annex I;

6. Receive information about the conceptual framework of stable isotope production at Fordow, as provided for in paragraph 46.1 of Annex I;

1. Assess and then approve, upon request by Iran, that fuel assemblies manufactured in Iran and their intermediate products cannot be readily reconverted into UF6, based on the objective technical criteria, with the goal of enabling fuel to be fabricated in Iran, as provided in paragraph 59 of Annex I;

2. Support assistance to Iran, including through IAEA technical cooperation as appropriate, in meeting international qualification standards for nuclear fuel produced by Iran, as provided for in paragraph 59 of Annex I;

3. Review and approve in advance, upon request by Iran, engagement by Iran, including through export of any enrichment or enrichment related equipment and technology, with any other country, or with any foreign entity in enrichment and enrichment related activities, including related research and development, as provided for in paragraph 73 in Annex I;

4. Provide consultation, and advise on the necessary means in the context of access as specified in paragraph 78 of Annex I;

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528 S22. Creation of an independent, dedicated organization with functionally divided subordinate organizations allows for efficient and effective efforts in a broad range of areas.
5. Review and approve in advance, upon request by Iran, the design, development, fabrication, acquisition, or use for non-nuclear purposes of multi-point explosive detonation systems suitable for a nuclear explosive device and explosive diagnostic systems (streak cameras, framing cameras and flash x-ray cameras) suitable for the development of a nuclear explosive device, as provided for in paragraphs 82.2 and 82.3 of Annex I;

6. Review and consult to address issues arising from the implementation of sanctions lifting as specified in this JCPOA and its Annex II;

7. Review and decide on proposals for nuclear-related transfers to or activities with, Iran, in accordance with Section 6 of this Annex and the United Nations Security Council resolution endorsing this JCPOA;

8. Review, with a view to resolving, any issue that a JCPOA participant believes constitutes nonperformance by another JCPOA participant of its commitments under the JCPOA, according to the process outlined in the JCPOA;

9. Adopt or modify, as necessary, procedures to govern its activities;

10. Consult and provide guidance on other implementation matters that may arise under the JCPOA.

3. Procedures

3. The Joint Commission will meet on a quarterly basis and at any time upon request of a JCPOA participant to the Coordinator. The Coordinator will convene a meeting of the Joint Commission to be held no later than one week following receipt of such a request, except for consultations in accordance with Section Q of Annex I and any other matter that the Coordinator and/or a JCPOA participant deem urgent, in which case the meeting will be convened as soon as possible and not later than three calendar days from receipt of the request.

3. Meetings of the Joint Commission will be held in New York, Vienna, or Geneva as appropriate. The host country should facilitate entry formalities for those attending such meetings.

3. The Joint Commission may decide by consensus to invite observers to attend its meetings.

3. Except as provided in Section 6 of this Annex which will be subject to the confidentiality procedure of the UN, the work of the Joint Commission is confidential and may be shared only among JCPOA participants and observers as appropriate, unless the Joint Commission decides otherwise.

4. Decisions

4. Except as stated otherwise in this Annex, decisions by the Joint Commission are to be made by consensus.

4. Each JCPOA participant will have one vote. Decisions of the Joint Commission are to be taken by the Representative or the Deputy Representative or other such alternate as the JCPOA participant may designate.

4. The vote of each JCPOA participant will be made known to all other JCPOA participants if any JCPOA participant requests a recorded vote.

4. Matters before the Joint Commission pursuant to Section Q of Annex I are to be decided by consensus or by affirmative vote of five JCPOA participants. There is no quorum requirement.

4. The Coordinator will not take part in decision-making on nuclear-related transfers.
and activities as set out in Section 6 of this Annex.

5. Other
5. Each JCPOA participant will be responsible for its own costs of participating in the Joint Commission, unless the Joint Commission decides otherwise.
5. JCPOA participants may request that the Coordinator circulates a notification to the other JCPOA participants at any time. Upon such a request, the Coordinator will circulate such notification without delay to all JCPOA participants.

6. Procurement Working Group
6. With the purpose of establishing a procurement channel, the Joint Commission will, except as otherwise provided by the United Nations Security Council resolution endorsing this JCPOA, review and decide on proposals by states seeking to engage in:
7. the supply, sale or transfer directly or indirectly from their territories, or by their nationals or using their flag vessels or aircraft to, or for the use in or benefit of, Iran, and whether or not originating in their territories, of all items, materials, equipment, goods and technology set out in INFCIRC/254/Rev.12/Part 1, and, if the end-use will be for Iran's nuclear programme set out in this JCPOA or other non-nuclear civilian end-use, all items, materials, equipment, goods and technology set out in INFCIRC/254/Rev.9/Part 2 (or the most recent version of these documents as updated by the Security Council), as well as any further items if the relevant State determines that they could contribute to activities inconsistent with the JCPOA; and,
8. the provision to Iran of any technical assistance or training, financial assistance, investment, brokering or other services related to the supply, sale, transfer, manufacture, or use of the items, materials, equipment, goods and technology described in subparagraph (a) above;
9. acquisition by Iran of an interest in a commercial activity in another State involving uranium mining, production or use of nuclear materials and technologies as listed in INFCIRC/254/Rev.12/Part 1, and such investments in territories under their jurisdiction by Iran, its nationals, and entities incorporated in Iran or subject to its jurisdiction, or by individuals or entities acting on their behalf or direction, or by entities owned or controlled by them.
6. The Joint Commission will discharge its responsibility for reviewing and making recommendations on proposals for nuclear-related transfers to or activities with Iran through a Procurement Working Group.
6. Each E3+3 State and Iran will participate in the Procurement Working Group. The High Representative will serve as the Coordinator of the Procurement Working Group.
6. Except as otherwise provided by the Joint Commission or the United Nations Security Council resolution endorsing this JCPOA, the Procurement Working Group will consider proposals according to the following process:
1. Upon receipt of a proposal, including all necessary supporting information, by a State seeking to engage in transfers and activities referenced in Section 6.1, the Coordinator will forward the proposal, through appropriate means, without delay to the Procurement Working Group and, when the proposal relates to items, material, equipment, goods and technology intended to be used in nuclear activities authorized by the JCPOA, to the IAEA. The Procurement Working Group will have
up to 30 working days to consider and decide on the proposal.

2. “Necessary supporting information” for purposes of Section 6.4.1 means: (a) a description of the item; (b) the name, address, telephone number, and email address of the exporting entity; (c) the name, address, telephone number, and email address of the importing entity; (d) a statement of the proposed end-use and end use location, along with an end-use certification signed by the AEOI or the appropriate authority of Iran attesting the stated end-use; (e) export license number if available; (f) contract date, if available; and (g) details on transportation, if available; provided that if any of the export license number, contract date, or details on transportation are not available as of the time of submittal of the proposal, such information will be provided as soon as possible and in any event as condition of approval prior to shipment of the item.

3. Each participant in the Procurement Working Group will have to communicate to the Coordinator, within 20 working days, whether it approves or rejects the proposal. The timeline for consideration may be extended for an additional period of 10 working days at the request of a participant of the Procurement Working Group.

4. The proposal will be recommended for approval as soon as the Coordinator receives formal approvals from all the Procurement Working Group Participants or if, at the end of the 30 working day period, the Coordinator has received no disapprovals from any of the Procurement Working Group Participants. If at the end of the 30 working day period, the proposal has not been recommended for approval, the proposal may, at the request of at least two Working Group Participants within 5 working days, be referred to the Joint Commission, which would decide on approval of the proposal by consensus within 10 working days. Otherwise the proposal will be recommended for disapproval. The disapproving JCPOA participant(s) should provide relevant information regarding the disapproval to the Joint Commission as appropriate, taking into account the need to protect confidential information.

5. The Coordinator will communicate the recommendation of the Joint Commission to the United Nations Security Council no later than 35 working days, or in case of referral to the Joint Commission no later than 45 working days from the date the Coordinator transmitted the proposal and all necessary supporting information to the Procurement Working Group.

6. Except as decided otherwise by consensus, the Procurement Working Group will meet every three weeks for reviewing the proposals. When some of the proposals to be reviewed relate to items, material, equipment, goods and technology intended to be used in nuclear activities authorized by the JCPOA, the IAEA may be invited to attend the meeting as an observer.

6. All JCPOA participants will act in accordance with the procurement channel and will only engage in transfers and activities referenced in Section 6.1 following approval by the Joint Commission and the United Nations Security Council. Iran will not use, acquire, or seek to procure the items, materials, equipment, goods, and technology referred to in Section 6.1 of this Annex for nuclear activities which are inconsistent with this JCPOA.

6. Any JCPOA participant may refer a procurement-related activity to the Joint Commission under the dispute settlement mechanism if it is concerned that such
activity is inconsistent with this JCPOA.

6. Iran will provide to the IAEA access to the locations of intended use of all items, materials, equipment, goods and technology set out in INFCIRC/254/Rev.12/Part 1 (or the most recent version of these documents as updated by the Security Council) imported following the procedure under Section 6 of this Annex.

6. Iran will permit the exporting state to verify the end-use of all items, materials, equipment, goods and technology set out in INFCIRC/254/Rev.9/Part 2 (or the most recent version of these documents as updated by the Security Council) imported following the procedure under Section 6 of this Annex. Upon request of the exporting state, or if the Joint Commission deems necessary when approving a proposal for transfer, the Joint Commission will provide expertise to the exporting state, including experts, as needed, to participate in the end-use verification.

6. The Procurement Working Group will respond to requests for guidance on procurement activities from third parties, as communicated by the Coordinator. The Procurement Working Group will endeavor to respond to such requests for guidance within 9 working days from the date the Coordinator submits it to the Procurement Working Group.

6. The Joint Commission will report to the United Nations Security Council at least every 6 months on the status of the Procurement Working Group's decisions and on any implementation issues.

7. Working Group on Implementation of Sanctions Lifting

7. The Joint Commission will discharge its responsibilities for reviewing and consulting on issues related to the implementation of sanctions lifting as specified in this JCPOA assisted by a working group on the implementation of sanctions lifting.

7. The Joint Commission participants will participate in this working group. The High Representative will serve as coordinator of this working group.

7. If at any time following the implementation day Iran believes that any other nuclear related sanction or restrictive measure including related designations of the E3/EU+3 is preventing the full implementation of the sanctions lifting as specified in this JCPOA, the JCPOA participant in question will consult with Iran with a view to resolving the issue. If they are not able to resolve the issue, Iran or any member of the E3/EU+3 may refer the issue to the working group.

7. The participants of the working group will review and consult, with a view to resolving the issue within 30 working days.

7. If after involvement of the working group, the issue remains unresolved, any participant of the JCPOA may refer it to the Joint Commission.

Annex V - Implementation Plan[1]529

[1] This Annex is only for the purpose of determining the sequence of implementation of the commitments described in this JCPOA and annexes thereto and does not restrict or expand the scope of these commitments.

[2] The sanctions that the United States will cease to apply are those directed towards non-U.S. persons, as described in Section 4 of Annex II.

[3] The provisions of this Resolution do not constitute provisions of this JCPOA.

529 Annex V of the JCPOA provides a specific technical outline of the implementation plan. It has been herein omitted as the specificity is irrelevant to the legal discussion at hand.
Omissions:

In addition to the strengths, weaknesses, and highlights noted above there are several potential omissions in the JCPOA that must be evaluated. There are four primary omissions that the most strident western opponents of the JCPOA claim to be fatal flaws. The first omission is that the JCPOA does not contain restrictions on delivery systems. U.N. Resolution 2231, however, did contain restrictions on missile technology.\textsuperscript{530} The second omission is the absence of a long-term regional strategy. Without a long-term plan in place the JCPOA serves only to delay Iran’s acquisition of nuclear weapons.\textsuperscript{531} The third omission in the JCPOA is that it lacks a definition of the difference between missiles and space launch vehicles. The genesis of the U.S.’s and Soviet space programs was an attempt to develop the means to deliver nuclear weapons through space launch.\textsuperscript{532} The fourth, and final, omission in the JCPOA is that it does not require Iran to assist the IC in combatting terrorism. Inclusion of such a mandate would have more strongly tied a non-nuclear Iran to the IC.\textsuperscript{533}

Citation notes: Table A1.1

\textsuperscript{530} Citation note 22.  
\textsuperscript{531} Citation note 24.  
\textsuperscript{532} Citation note 27.  
\textsuperscript{533} Citation note 28.
<table>
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<td>Robert Einhorn, <em>The JCPOA should be maintained and reinforced with a broad regional strategy</em>, BROOKINGS, at ¶ 2 (Sept. 29, 2006) retrieved from <a href="https://www.brookings.edu/research/the-jcpoa-should-be-maintained-and-reinforced-with-a-broad-regional-strategy/">https://www.brookings.edu/research/the-jcpoa-should-be-maintained-and-reinforced-with-a-broad-regional-strategy/</a>.</td>
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<td>Statute of the IAEA, Art. 2-3.</td>
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<td>11</td>
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nuclear-programme.


Robert Einhorn, *An unsatisfying outcome on Iran’s past nuclear activities is no reason to derail the nuclear deal*, BROOKINGS, ¶ 26 (Dec. 1, 2015) retrieved from https://www.brookings.edu/blog/markaz/2015/12/01/an-unsatisfying-outcome-on-irans-past-nuclear-activities-is-no-reason-to-derail-the-nuclear-deal/ (cited hereinafter as Einhorn 2).

Einhorn, *supra*.


ADDENDUM II: SELECTED MUST-HAVES IN A DPRK RELATED AGREEMENT.

“…developments on the Korean Peninsula could have dangerous, large-scale regional security implications”.

A proposed instrument of international law that affects the denuclearization of the DPRK must include certain items. For such an instrument to adequately bar the DPRK from being able to acquire (whether covertly or otherwise) nuclear weapons select elements should necessarily be codified therein including: (a) regime survival, (b) fuel cycle controls, (c) Additional Protocols, (d) a clear declaration of the DPRK’s intent to disarm and rejoin the NPT as a NNWS, (e) controls on potential delivery systems, (f) a dispute resolution mechanism, (g) a requirement for the U.S. to adopt the instrument as a full-force treaty per the Constitution, and (h) a requirement that the UN Security Council adopt the agreement via passage of a resolution that firmly recognizes the agreement as a binding facet of international law.

The first must-have item in a proposed agreement with the DPRK should be that it allows continued existence of the regime. Because the DPRK is being driven to proliferated by neorealist logic, a proposed agreement should not only allow for regime survival, it should make denuclearization a precondition for survival of the regime. The application of sanctions and other forms of international pressure ought to be backed by the threat of military force. The IC should incrementally increase those pressures over time in quid-pro-quo response to transgressions by the DPRK. Due to mounting economic and international pressure by the IC, the DRPK will eventually reach a point at which continued survival of the regime cannot be sustained. At that point, the IC could offer sanctions and pressure relief in exchange for total abandonment of its nuclear weapons program.

534 S.C. Res. 2375, ¶ 6 (Sept. 11, 2017).
The second must-have in a proposed agreement should be stringent controls on the DPRK’s nuclear fuel cycle. There are two primary methods that would allow the DPRK to exercise its Article Four NPT rights to develop peaceful nuclear technology while preventing misuse of their developments: (a) limits on the DPRK’s ability to domestically produce fissile materials, or (b) restricting the DPRK to solely rely on international sources (at market costs) for production of all weaponizable elements of the nuclear fuel cycle. The complexity and expense of absolute monitoring of a domestic peaceful nuclear program would have to be distributed across a substantial portion of the IC. Therefore, allowing the DPRK to maintain a domestic peaceful nuclear program is inherently more complicated than foreign sourced peaceful applications. On the other hand, requiring the DPRK to purchase technology from external sources would allow the IAEA to exclusively perform a use-compliance role. Thereunder the IAEA would only need to assure that the DPRK is not misusing the equipment and fuel that it purchases from the NSG. By requiring the DPRK to rely on foreign sourced technology, the IC could more effectively control the outputs and wastes that could be diverted to proliferation related activities while saving the DPRK the costs associated with organic development of a nuclear fuel cycle. In a political-economic sense, there are only two reasons why the DPRK would want a domestic fuel cycle if the IC offered to supply the fruits thereof at-cost: fear that the IC might cut-off supply, and desire to divert the outputs and wastes to covert production of nuclear weapons materials. If the agreement included a competitive supply and waste recovery mechanism which could not be suspended except under extreme circumstances, the DPRK would likely accept the conditions.

The third must-have provision in an instrument of international law with the DPRK should be mandatory adoption of the Additional Protocol with the IAEA. The exact
requirements of the Additional Protocol should be determined between the DPRK and the IAEA, however, certain elements could be included in the proposed instrument between the DPRK and the IC: (a) unrestricted access for IAEA inspectors at any declared or undeclared site without time delays, (b) permanent IAEA presence in the DPRK including support personnel and required facilities and infrastructure, and (c) diplomatic visa status for inspectors and IAEA support personnel. The three listed facets of an Additional Protocol will allow the IAEA unrestricted and unabated access to facilitate assurance inspections.

The fourth must-have item in a proposed agreement with the DPRK is a clear and unambiguous statement of purpose. By codifying the agreements purpose as: ensuring the DPRK’s reentry into the NPT as a NNWS, and facilitating the relief of sanctions in a mutually beneficial way. The specific language included in the proposed agreement should mandate the DPRKs resumption of NNWS status under the NPT and a permeant oath to abstain from any activity that could be perceived by the IC as contributing to the covert development of nuclear weapons or related materials. The specific provisions that would be included should draw upon already established instruments of international law.

The fifth must-have item in an agreement with the DPRK is some form of control on delivery systems. Specific limitations on the range and throw-weight of cruse and ballistic missiles do not necessarily have to be included in a proposed agreement but a blanket prohibition on the further missile tests and launches by the DPRK should be included. Such tests are inherently destabilizing and are largely counterproductive for diplomatic efforts. The IC should be willing to support the DPRK’s right to explore and utilize space, it can allow space-launch while preventing missile development and testing by establishing competitive international space-launch services that provide at-cost delivery of orbital satellites and other peaceful
technology. Since the DPRK (and other potential proliferators) would be freed from the infrastructure and development costs, the proposed services would likely be able to provide peaceful launch capability at a fraction of the cost of organic domestic programs. The five NWS identified in the NPT are the probable prime contenders for chartering/establishing the services as they already possess the technology for deployment of ballistic missiles and all already possess much of the infrastructure required for peaceful space launch.

The sixth must-have component of an agreement with the DPRK is inclusion of a dedicated and integrated dispute resolution mechanism. The complexities inherent to counterproliferation will invariably lead to problems in how different parties view the actions of others. By including a dispute resolution mechanism, the parties to the agreement can resolve those issues without resorting to external bodies. By making referral of problems to that body compulsory, the long-term effectiveness of the agreement would be protected from transient problems in the hands of deliberative bodies whose mandates are not so dedicated to sustainment of the proposed agreement.

The seventh must-have facet of a proposed agreement with the DPRK is that the U.S. must be compelled to accede to the agreement as a full force treaty. The U.S. as the prime military and economic power in the region (as well as in the world) will inherently be a key player in achieving and enforcing the agreement. If political changes in the U.S. make its future adherence to and support for a proposed agreement suspect, as was the case with the JCPOA, the deal will be hobbled at the outset. By ensuring that the U.S. adopts the agreement in the form of a treaty per Article 2 of the Constitution, the IC can ensure more stable support on the part of the U.S.

The eighth, and final, must-have element in a proposed agreement with the DPRK is that
the UN Security Council must resolve to enshrine the agreement in the *Corpus Juris* of international law. If the Security Council makes the proposed agreement a binding component of international law, the IC can force other states to comply with their obligations under that agreement.

By including the above listed elements in a proposed agreement, the IC can lay the foundation for an effective instrument of international law that prevents the DPRK from further development and future possession of nuclear weapons. This Addendum is not intended to be a comprehensive listing of elements that should be included in a proposed agreement, but a brief explanation of the most critical facets. At a minimum, the forgoing elements must be included if the proposed agreement will adequately disarm the DPRK.
ADDENDUM III: SELECTED TECHNICAL EXPLANATIONS/DEFINITIONS.

“When it went off, in the New Mexico dawn, that first atomic bomb, we thought of Alfred Nobel, and his hope, his vain hope, that dynamite would put an end to wars.”535

This Addendum will focus on clarifying selected technical aspects of nuclear weapons proliferation that were omitted from the body of this research paper. Those definitions and explanations were omitted as their inclusion would not have facilitated better understanding in a topical and legal sense, until enforcement becomes the primary issue. Over-technical details would have detracted from the intended message of the paper. However, descriptions of the more technical aspects herein, will afford better comprehension for those who are interested in further study of nuclear weapons counterproliferation and the international law surrounding it.

**Breakout**

Breakout is the amount of time that a prospective proliferator would need to build a nuclear weapon.536 Estimates on breakout time are based on intelligence estimates of a state’s ability to enrich enough fissile material to build one weapon.537

**Fission**

Fission is the splitting of atomic nuclei.538 Heavy elements can be split apart by introducing a destabilizing neutron. One of the curious facets of nuclear physics stems from the

537 id at ¶ 6.
The fact that an atom weighs less than the sum of its parts. The missing remainder is converted into pure energy in the form of strong nuclear force. When the atom undergoes fission the mass that was consumed in the strong force is released in the form of energy at the rate of \( E=MC^2 \) or more simply stated the missing mass is converted into a significant amount of energy.

**Fuel Cycle**

The Nuclear fuel cycle is defined as the processes undertaken to convert natural materials into fissionable materials. Uranium, a naturally occurring element, is mined processed into an oxide form referred to as yellowcake. It is then turned into gaseous UH6 which can be centrifugally separated into its various isotopes. Once the fuel is enriched to >90% U-235 the material can be used in uranium based weapons. If the fuel is enriched to a lower degree it can be used in reactors. Some reactors may convert parts of the remaining U-238 into Pu-239 or Pu-240 which can also be used in weapons.

**Fusion**

Fusion is the union of nuclei of lighter elements. Nuclear fusion only takes place in extremely high temperatures and pressures. In the center of a fission explosion, the hydrogen isotopes, deuterium and tritium, can be fused together to form helium and extra neutrons that accelerate the fission of the remaining fissile material. In addition to the boosting effect, fusion

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541 id.
542 id.
544 DUKE ENERGY, *supra.*
releases a profound amount of energy.

**HWR**

A HWR uses water with an abnormally high concentration of deuterium as the primary coolant and/or moderator. These reactors have a higher potential to turn unconsumed uranium into plutonium.\(^{545}\) The plutonium fuel gained in this manner requires substantially less infrastructure and therefore is more effective for covert weapons production.

**LWR**

A LWR uses water with a neutral concentration of deuterium as the primary coolant and/or moderator.\(^{546}\) Because light water has a lower neutron density than heavy water, substantially less of the uranium is converted to plutonium. The resultant waste requires prohibitively more reprocessing to amass a weaponizable quantity of plutonium.

**Miniaturization**

Miniaturization is reduction in size of a nuclear device to the degree that it can be delivered by missiles.\(^{547}\)

**Missile Technology**

Missiles are ranged unmanned weapons designed for terminal use. In the context of nuclear weapons missiles fall into two broad categories: cruse and ballistic. Cruse missiles

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\(^{546}\) *id* at ¶ 27.

typically follow low altitude flight paths to get to the predetermined target.  

Ballistic missiles follow a very high-altitude arch and can reach targets nearly anywhere on the planet.  

**Weapon types**

Nuclear weapons are broadly divided into two categories: atomic and thermonuclear. Atomic weapons rely solely on the fission of certain isotopes of uranium or plutonium. Thermonuclear weapons rely on a staged system where the initial fission reaction creates the temperatures and pressures needed for fusion.  

**Yield**

Yield in the context of nuclear weapons is the equivalence of explosive power between a given device and trinitrotoluene (TNT). Typical atomic devices are measured in kilotons of TNT where modern thermonuclear devices may reach into the megatons of TNT. A blast of one kiloton is equivalent to one thousand tons of TNT or 2,000,000 pounds of TNT. A megaton is equal one million tons of TNT or 2,000,000,000 pounds. A blast of 59 megatons (the largest device ever detonated) is equivalent to 118,000,000,000 pounds of TNT.  

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552 id.  
553 id.  
554 id.  

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ADDENDUM IV: SUGGESTED FURTHER READINGS.


Ian Brownlie, Some Legal Aspects of the Use of Nuclear Weapons (1965).


Nuclear Non-Proliferation in International Law (Jonathan L. Black-Branch et al. eds., Vols. 1-3 2014).