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Ariel E. Braunstein

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WHAT'S INTENT GOT TO DO WITH IT? INTERPRETING "PEACEFUL PURPOSE" IN ARTICLE IV.1 OF THE NPT

David S. Jonas*
Ariel E. Braunstein**

*"I can't explain what I mean. And even if I could, I'm not sure I'd feel like it."*¹

INTRODUCTION

The drafters of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) seem to have taken the words of J.D. Salinger's character, Holden Caulfield, to heart: Since it entered into force in 1970, the NPT has been the subject of contentious debate due, in large part, to its plethora of ambiguous provisions.² It would not be a stretch to assert that, if the drafters were asked today to define any of these vague provisions, they might utter a retort similar to Caulfield's own response.

Perhaps the NPT's most controversial provision, in terms of meaningful current application (if only one must be singled out), is Part 1 of Article IV, which deals with states' rights to nuclear energy for "peaceful purposes."³ Article IV.1 states: "Nothing in this Treaty shall be interpreted as affecting the inalienable right of all the Parties to the Treaty to develop research, production and use of nuclear energy for peaceful purposes without discrimination and in conformity with Articles I and II of this Treaty."⁴ A frequent debate surrounding

* Partner, Fluet Huber + Hoang; Former General Counsel, National Nuclear Security Administration; Former General Counsel, Defense Nuclear Facilities Safety Board; Adjunct Professor, Georgetown University Law Center, The George Washington University Law School, and former Adjunct Professor at the U.S. Naval War College. B.A., Denison University; J.D., Wake Forest University School of Law; LL.M., The Judge Advocate General's School, U.S. Army; LL.M., Georgetown University Law Center; M.A., U.S. Naval War College. Mr. Jonas previously served in the U.S. Marine Corps, concluding his service with the Joint Chiefs of Staff as the nuclear nonproliferation planner. The views expressed herein are his own and do not necessarily reflect the official policy or position of Fluet Huber + Hoang, the National Nuclear Security Administration, the Defense Nuclear Facilities Safety Board, the Department of the Navy, the Department of Energy, or the U.S. Government.

** J.D. candidate, The George Washington University Law School; M.A. candidate, Elliott School of International Affairs, The George Washington University; B.A., Villanova University. For their valuable comments and insights into earlier drafts, both authors express their deepest gratitude to Professors David Koplow and Daniel Joyner.

¹ J.D. SALINGER, *THE CATCHER IN THE RYE* 158 (Back Bay Books 2001) (1945).

² Treaty on the Non-Proliferation of Nuclear Weapons, *opened for signature* July 1, 1968, 21 U.S.T. 483, 729 U.N.T.S. 161 [hereinafter NPT].

³ *Id.* art. IV.1.

⁴ *Id.*

Article IV is about the meaning and interpretation of “inalienable right.”⁵ Generally, Non-Nuclear Weapon States (NNWS)⁶ adopt the position that the NPT gives them the inalienable right to pursue nuclear technology for peaceful purposes, and by limiting certain technologies and materials to which they may have access, Nuclear Weapon States (NWS) and other potential suppliers in the Nuclear Suppliers Group (NSG) are violating that right.⁷ Conversely, NWS emphasize that NNWS’ right to nuclear materials and technologies is conditioned⁸ on compliance with Articles I and II; this gives credence to their argument that NNWS are not entitled to *all* materials and technologies, which would enable them to develop the complete nuclear fuel cycle.⁹ This debate has evolved into what some NNWS have called “nuclear apartheid,” in which they claim that NWS deny them access to nuclear materials and technologies in order to maintain the status quo hierarchy.¹⁰

However, there is another pressing ambiguity embedded in the text of Article IV.1. Despite the frequent debate over whether states are entitled to unbridled

⁵ See generally Christopher A. Ford, *Nuclear Technology Rights and Wrongs: The NPT, Article IV, and Nonproliferation*, in *REVIEWING THE NUCLEAR NONPROLIFERATION TREATY* (Henry Sokolski ed., 2010). It is worth noting that the concept of “inalienable rights” dates back centuries and is perhaps best known in the Declaration of Independence regarding “Life, Liberty, and the Pursuit of Happiness.” *Id.* at 312–13.

⁶ As per Article IX of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), a Nuclear Weapon State (NWS) is defined as any state “which has manufactured and exploded a nuclear weapon or other nuclear explosive device prior to 1 January, 1967.” NPT, *supra* note 2, art. IX. Therefore, by definition, there are only five NWS recognized by the NPT: the United States, the United Kingdom, Russia, China, and France. All other states are necessarily Non-Nuclear Weapon States (NNWS), but not necessarily NNWS party to the NPT.

⁷ See, e.g., Permanent Rep. of Indonesia to the U.N., Letter dated Sept. 14, 1994 from the Permanent Rep. of Indonesia to the United Nations addressed to the Provisional Secretary-General of the 1995 Review and Extension Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons, U.N. Doc. NPT/CONF.1995/14 (Apr. 6, 1995) (“There continues to exist unjustified restrictions and constraints imposed on developing NNWSs regarding full access to nuclear technology for peacefully [sic] purposes. Unilaterally enforced restrictive measures, beyond safeguards required under the Treaty, must not be used to prevent peaceful development, especially in the nuclear area, and should be removed.”).

⁸ According to Article IV, states’ “inalienable right” to nuclear energy for peaceful purposes must be “in conformity with Articles I and II” of the NPT. NPT, *supra* note 2, art. IV.1. Therefore, this right ultimately may not be “inalienable” because it is conditioned on other requirements.

⁹ See, e.g., Christopher Ford, Principal Deputy Assistant Sec’y, Bureau of Verification & Compliance, Statement to the 2005 Review Conference of the Treaty on the Nonproliferation of Nuclear Weapons: NPT Article IV: Peaceful Uses of Nuclear Energy (May 18, 2005) (“Some have asserted that any State Party in demonstrable compliance with the NPT has a specific right to develop the full nuclear cycle, and that efforts to restrict access to the relevant technologies is inconsistent with the NPT. The Treaty is silent on the issue of whether compliant states have the right to develop the full nuclear fuel cycle, but . . . it does provide for discretion on the part of supplier states regarding the nature of their cooperation with other states.”).

¹⁰ For an excellent overview of this phenomenon, see generally SHANE J. MADDOCK, *NUCLEAR APARTHEID: THE QUEST FOR AMERICAN ATOMIC SUPREMACY FROM WORLD WAR II TO THE PRESENT* (2010). There are no foreseeable financial benefits for NWS to gain by denying NNWS access to the full nuclear fuel cycle; such denial is in the interest of the global nuclear nonproliferation regime.

access to nuclear energy for peaceful purposes, nowhere does the NPT define exactly what constitutes a “peaceful purpose.” This is a vital distinction, especially considering that NNWS’ access to nuclear materials and technologies is expressly conditioned on Articles I and II. Articles I and II only prohibit the development and acquisition of “nuclear weapons” and “nuclear explosive devices,”¹¹ but there exists a host of nuclear materials and technologies that are neither nuclear weapons/nuclear explosive devices nor strictly peaceful. Two such examples are depleted uranium and naval reactor fuel—both of which are used for military purposes.

While there are individualized, country-specific restrictions that delineate what constitutes the use of nuclear energy for “peaceful purposes,” such as export controls and nuclear cooperation agreements,¹² there is neither a globally-accepted definition for “peaceful purpose” nor international guidelines to determine how to characterize materials that do not fall squarely within the parameters of Articles I and II. Therefore, the question arises: How should states in general—and the United States in particular—characterize materials that are neither nuclear weapons/nuclear explosive devices nor meant strictly for “peaceful purposes,” such as depleted uranium and naval reactor fuel?¹³ While the U.S. position has long been that a “peaceful purpose” is “non-aggressive” as opposed to “non-military,”¹⁴ an interpretation of “peaceful purpose” is nonetheless necessary to verify whether this is an acceptable position.

This Article will first discuss the limited views that states have put forth regarding the meaning of “peaceful purpose.” Next, it will incorporate the standards set out in the Vienna Convention on the Law of Treaties (VCLT)¹⁵ to analyze and interpret “peaceful purpose.” It will then present the views

¹¹ NPT, *supra* note 2, arts. I–II.

¹² See Seth Hoedl, *Ensuring Peaceful Use via International Licensing of the Nuclear Fuel Cycle*, in NUCLEAR NON-PROLIFERATION IN INTERNATIONAL LAW—VOLUME III: LEGAL ASPECTS OF THE USE OF NUCLEAR ENERGY FOR PEACEFUL PURPOSES 63, 77–79 (Jonathan L. Black-Branch & Dieter Fleck eds., 2016).

¹³ Some have argued that non-explosive devices that are not explicitly referenced in the NPT, such as naval propulsion reactors, are necessarily non-peaceful as evidenced by “the wording in Article III [of the NPT] and international practice” JOHN CARLSON ET AL., NUCLEAR WEAPONS: THE STATE OF PLAY 199 (Ramesh Thakur & Gareth Evans eds., 2013). However, it is unwise to assume such a conclusion without further analysis into both the text of the NPT and subsequent international practice.

¹⁴ While not defined explicitly in terms of the NPT, this U.S. interpretation can be inferred from its interpretations of similar provisions in other treaties from the same time period to which it is a party. See, e.g., D. Goedhuis, *Legal Implications of the Present and Projected Military Uses of Outer Space*, in MAINTAINING OUTER SPACE FOR PEACEFUL USES: PROCEEDINGS OF A SYMPOSIUM HELD IN THE HAGUE 253, 263 (Nandasiri Jasentuliyana ed., 1984) (stating that the U.S. interpretation of “peaceful purpose” in the Outer Space Treaty is “non-aggressive” rather than “non-military”).

¹⁵ Vienna Convention on the Law of Treaties, *opened for signature* May 23, 1969, 1155 U.N.T.S. 331 [hereinafter VCLT].

expressed both by the NWS and the NNWS as to the proper interpretation and application of Article IV as a whole, with specific emphasis on “peaceful purpose.” Finally, it will conclude by advocating that U.S. policy should dictate that depleted uranium and naval reactor fuel should not be considered uses of nuclear energy for “peaceful purposes.”

I. AMBIGUITY AS A THEME: WHAT IS *NOT* A “PEACEFUL PURPOSE”

It is first important to note that “peaceful purpose” is not the only source of vague language in the NPT. On the contrary, the NPT is rife with ambiguity that has been the cause of fierce debate for nearly five decades.¹⁶ That being said, Article IV is one of its most ambiguous Articles—as much for the terms it uses as for those it does not. A prominent example is the notable absence of any language referring to enrichment and reprocessing (ENR). The drafters of the NPT were well aware of ENR while drafting the NPT, yet they consciously chose to exclude that specific language—“enrichment and reprocessing”—from Article IV.¹⁷ To specifically designate ENR as an inalienable right would be to give all states legal authority to develop the entire nuclear fuel cycle, which would, in turn, pose a great danger that states would divert the ENR technologies from civilian uses to nuclear weapons programs.¹⁸ Because the NWS were very hesitant to recognize such a right, both the NWS and NNWS eventually agreed to the sufficiently vague language of Article IV as it reads today so that the states in both groups would be able to present the final language as a victory to their respective governments.¹⁹ This is indeed how the scenario played out: Article

¹⁶ See, e.g., David S. Jonas, *Ambiguity Defines the NPT: What Does “Manufacture” Mean?*, 36 LOY. L.A. INT’L & COMP. L. REV. 263, 263 (2014).

¹⁷ See Eldon V.C. Greenberg, *Peaceful Nuclear Energy and the Nuclear Nonproliferation Treaty*, in REVIEWING THE NUCLEAR NONPROLIFERATION TREATY 105, 112 (Henry D. Sokolski ed., 2010) (discussing the rejected attempt by the Spanish delegation to the Eighteen Nation Disarmament Conference to “refer specifically to the entire technology of reactors and fuels” because “it was not the intent of the framers of the NPT to create an obligation to supply any and all forms of nuclear energy with a single exception of actual explosive devices.”) (internal citations omitted); see also Hoedl, *supra* note 12, at 80.

¹⁸ Once a state masters the nuclear fuel cycle, it is very easy to repurpose a civilian nuclear program to a nuclear weapons program. The largest hurdle a state faces when launching a nuclear program is acquiring the knowledge and technology to enrich uranium. However, once it has acquired these, a state can easily continue to enrich uranium past the point required for civilian use to a level suitable for use in weapons. The same concept applies to reprocessing: Once a state acquires the knowledge and technology necessary for reprocessing, it can separate the plutonium created in the course of nuclear reactions from the spent nuclear fuel and keep the plutonium for use in nuclear weapons.

¹⁹ See Donald W. Greig, *The Interpretation of Treaties and Article IV.2 of the Nuclear Non-Proliferation Treaty*, 6 AUSTL. Y.B. INT’L L. 77, 82 (1974–75) (“Given the fact that the NPT deals with an area in which the vital interests of contracting States are of paramount importance, it would hardly be surprising to discover that the Treaty as a whole, as well as many of its provisions, gloss over potential areas of conflict in forms of wording which create the impression that agreement has been achieved and translated into legal prescriptions. Thus, in

IV.1, which underlines “the inalienable right of all the Parties to the Treaty to develop research, production and use of nuclear energy for peaceful purposes,”²⁰ is ambiguous enough for NNWS to argue that ENR *is* implied as an inalienable right and for NWS to argue that it is *not*—thus, an arguably win-win scenario for both groups.

It is therefore clear that the issue of ambiguity is in no way unique to the meaning of “peaceful purpose,” especially considering the way treaties were drafted at the time the NPT entered into force.²¹ It is important to note at the outset that “peaceful use” and “peaceful purpose” are used interchangeably throughout the NPT.²² However, the difference between “use” and “purpose” is of paramount importance and will be further analyzed.

While very little information is available about what constitutes the use of nuclear energy for “peaceful purposes,” some officials have made statements regarding what uses *do not* qualify as such.²³ It is therefore helpful to review these guidelines to determine which activities should be initially excluded from the category of “peaceful purpose” under Article IV.1 in order to define what *does* constitute a “peaceful purpose.”

U.S. officials have disclosed “warning signs” considered to be indicative of non-peaceful nuclear activities and have listed criteria to consider in making such a determination.²⁴ Among the criteria are “the presence of unmarked

approaching the problem of interpreting the Treaty’s provisions, it is necessary to bear in mind that ‘the intention of the parties’ might well include a deliberate choice in favour of accepting a text that gives an illusion, rather than a reality, of agreement.’”)

²⁰ NPT, *supra* note 2, art. IV.1.

²¹ See Hoedl, *supra* note 12, at 67 n.14 (contrasting the NPT and the Biological Weapons Convention, both concluded within two years of each other and opting not to define “peaceful purpose,” with the Chemical Weapons Convention, concluded in 1993 and specifically “sidestepping the peaceful use ambiguity” by identifying what is prohibited); *cf.* Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, *opened for signature* January 27, 1967, 18 U.S.T. 2410, 610 U.N.T.S. 205 [hereinafter Outer Space Treaty] (useful for comparison considering it entered into force in 1967). Article IV of the Outer Space Treaty requires the moon and surrounding planets to be exclusively used for “peaceful purposes” and goes on to prohibit “[t]he establishment of military bases, installations and fortifications, the testing of any type of weapons and the conduct of military manoeuvres” on them. *Id.* It thus effectively declares that any activity other than those expressly listed may be considered “peaceful purposes” and states that military personnel conducting research may also be considered a “peaceful purpose.” *Id.*

²² As in the NPT, the authors cited in this article likewise utilize “use” and “purpose” interchangeably (unless otherwise noted).

²³ See *infra* notes 24–25 and accompanying text.

²⁴ U.S. DEP’T OF STATE, ADHERENCE TO AND COMPLIANCE WITH ARMS CONTROL, NONPROLIFERATION AND DISARMAMENT AGREEMENTS AND COMMITMENTS 64 (2005).

nuclear facilities” and any measures taken by a state which are seemingly inconsistent with civilian nuclear programs.²⁵

These factors are useful in determining what constitutes a “peaceful purpose” because, in specifying activities beyond the realm of civilian use, they help delineate what clearly *is not* a “peaceful purpose.” Scholars of nuclear nonproliferation law and policy have likewise spoken out in support of these criteria. One such supporter is Professor Eldon V.C. Greenberg, who serves as a legal advisor to the Nuclear Control Institute. He has stated:

If the [proliferation] risks are great, if there can be no reasonable civilian justification for particular forms of assistance or activities, and if there can be no certainty that safeguards would be effective with respect to such assistance or activities, then a presumption should arise under the [NPT] that such assistance or activities are not for a permissible, peaceful purpose but are rather for a weapons or explosive purpose and therefore in violation of Articles I and II.²⁶

Further, Robert Zarate concludes that Article IV presents a limited range of interpretations for “peaceful purposes” because “peaceful nuclear energy ‘in conformity with articles I and II’ excludes not only nuclear explosive technology for peaceful or non-peaceful purposes, but also other nuclear technology and assistance that could ‘assist, encourage or induce’ non-nuclear-weapon states ‘to manufacture or otherwise acquire’ nuclear explosive technology.”²⁷

Interestingly, none of these guidelines mention nuclear materials and technologies that are used for military purposes but not as nuclear weapons or nuclear explosive devices. Such examples include depleted uranium (used both in armor-piercing projectiles and tank armor and shielding)²⁸ and naval reactor

²⁵ *Id.* (listing the warning signs as “(a) the presence of undeclared nuclear facilities; (b) procurement patterns inconsistent with a civil nuclear program (*e.g.*, clandestine procurement networks, possibly including the use of front companies, false end-use information, and fraudulent documentation); (c) security measures beyond what would be appropriate for peaceful, civil nuclear installations; (d) a pattern of Article III safeguards violations suggestive not of mere mistake or incompetence, but of willful violation and/or systematic deception and denial efforts aimed at concealing nuclear activities from the International Atomic Energy Agency (IAEA); (e) a nuclear program with little (or no) coherence for peaceful purposes, but great coherence for weapons purposes (*e.g.*, heavy water production in a country the civil nuclear facilities of which use only light water as a moderator, or pursuit of enrichment facilities when other, cheaper energy-producing resources or an outside source of enriched uranium are available, or the pursuit of a full fuel cycle for a civil reactor program too small to provide economic justification for such an effort).”)

²⁶ Robert Zarate, *The Three Qualifications of Article IV’s “Inalienable Right”*, in REVIEWING THE NUCLEAR NONPROLIFERATION TREATY 219, 233 n.18 (Henry Sokolski ed., 2010) (internal quotations omitted).

²⁷ *Id.* at 221 (internal citations omitted).

²⁸ *Background Information on Depleted Uranium*, U.S. NUCLEAR REGULATORY COMM’N, <https://www.nrc.gov/waste/llw-disposal/llw-pa/uw-streams/bg-info-du.html> (last updated Aug. 9, 2017).

fuel (used to power nuclear submarines²⁹ and currently being studied as a means to power research and rescue submarines).³⁰ While being utilized in the military context may not immediately qualify as “non-peaceful” or violent, the use of such materials and technology in that manner normally serves a non-peaceful end.³¹ For example, while depleted uranium utilized in tank armor and shielding is intended for defensive and passive—rather than aggressive—purposes, depleted uranium is also used to make armor-piercing projectiles, which *are* intended for aggressive purposes. Likewise, naval reactor fuel powering a research submarine may be a passive use, but it is more frequently used to power nuclear submarines or warships—a generally aggressive purpose.³² For both depleted uranium and naval reactor fuel, whether they are considered to be peaceful depends on how the state possessing them intends to use them.

While the guidelines presented *supra* are indeed helpful, they fail to render exact classifications for depleted uranium and naval reactor fuel under “peaceful purposes.” It is thus necessary to examine the text of Article IV itself, as well as its drafting and negotiating history, to understand how the drafters defined “peaceful purpose” as it relates to such nuclear materials and technologies.

II. INTERPRETATION OF ARTICLE IV.1

There are generally two primary schools of thought³³ regarding treaty interpretation: one that advocates for plain meaning of the text only and the other that advocates for the general purpose of the text, including the plain meaning.³⁴ Those who advocate for plain meaning only rely on “the notion of univocalism,

²⁹ “Nuclear submarines” in this context will refer to those submarines employed by the military for aggressive purposes—namely, warships. Both attack submarines (SSNs) and boomers (SSBNs) are classes of warships.

³⁰ *Nuclear-Powered Ships*, WORLD NUCLEAR ASS’N, <http://www.world-nuclear.org/information-library/non-power-nuclear-applications/transport/nuclear-powered-ships.aspx> (last updated Dec. 2017).

³¹ This has been acknowledged by the NWS, who also are the permanent members of the Security Council. See P5 Working Group on the Glossary of Key Nuclear Terms, P5 GLOSSARY OF KEY NUCLEAR TERMS 54 (2015) (“There may be *non-peaceful uses of nuclear material* which would not be proscribed under the NPT and to which safeguards would not apply during the period of such use (e.g. *nuclear propulsion of submarines or other warships*).”) (emphasis added).

³² This is a generally aggressive purpose because nuclear submarines have non-aggressive uses, such as gathering intelligence.

³³ While there are various schools of thought and vast literature on treaty interpretation, this Article will not delve into all of them; rather, it will focus on interpretation as set forth by the VCLT.

³⁴ Rex J. Zedalis, “*Peaceful Purposes*” and Other Relevant Provisions of the Revised Composite Negotiating Text: A Comparative Analysis of the Existing and the Proposed Military Regime for the High Seas, 7 SYR. J. INT’L L. & COM. 1, 19 n.73 (1979); see also Zhang Xinjun, *Intentional Ambiguity and the Rule of Interpretation in Auto-Interpretation: The Case of “Inalienable Right” in NPT Article IV*, 52 JAPANESE Y.B. INT’L L. 35 (2009) (discussing auto-interpretation as it relates to the VCLT).

i.e., that every term has but one meaning, that the meaning is easily identifiable, and that the meaning controls.”³⁵ However, the more internationally-accepted method of interpretation, codified in the VCLT, is the general purpose approach.³⁶ This approach “seeks to effectuate the true intentions of the drafters by construing ambiguous provisions in the context of the total treaty.”³⁷ This Article will therefore proceed with an analysis of “peaceful purpose” utilizing the general purpose approach.

A. VCLT Standards

VCLT Articles 31 and 32 are the relevant provisions to consider regarding treaty interpretation. When considering an ambiguous provision or term, Article 31(1) of the VCLT states: “A treaty shall be interpreted in good faith in accordance with the ordinary meaning to be given to the terms of the treaty in their context and in the light of its object and purpose.”³⁸ Article 31(3) states that, in addition to the context of the treaty, it is important to take into account the subsequent practice of the parties to correctly interpret a certain provision.³⁹

If the ordinary meaning and subsequent state practice in the context of the treaty’s object and purpose do not suffice, Article 32 allows for examination of the *travaux préparatoires*, or preparatory works, as well as the “circumstances of [the treaty’s] conclusion, in order to confirm the meaning resulting from the application of Article 31, or to determine the meaning when the interpretation according to Article 31(a) leaves the meaning ambiguous or obscure, or (b) leads to a result which is manifestly absurd or unreasonable.”⁴⁰

1. Article 31 – Plain Meaning

According to Article 31 of the VCLT, the first step in determining the correct interpretation of “peaceful purpose” must be to examine its plain meaning in the context of the NPT’s object and purpose.⁴¹ At the outset, “peaceful purpose” in Article IV.1 of the NPT must be distinguished from “peaceful use” as used in

³⁵ Zedalis, *supra* note 34, at 19 n.73.

³⁶ *Id.*

³⁷ *Id.*

³⁸ VCLT, *supra* note 15, art. 31.

³⁹ *Id.*

⁴⁰ *Id.* art. 32.

⁴¹ For a comprehensive analysis of the object and purpose of treaties, see David S. Jonas & Thomas N. Saunders, *The Object and Purpose of a Treaty: Three Interpretive Methods*, 43 VAND. J. TRANSNAT’L L. 565 (2010).

Article IV.2. The real distinction between these phrases lies in the definitions of “use” and “purpose.”⁴²

Merriam-Webster Dictionary defines “peaceful” as “devoid of violence or force;”⁴³ “use” as “the act or practice of employing something;”⁴⁴ and “purpose” as “something set up as an object or end to be attained; intention.”⁴⁵ Combining the definitions, “peaceful use” would be defined as the act or practice of employing something which is devoid of violence or force. Similarly, “peaceful purpose” would be defined as an object or end to be attained or an intention devoid of violence or force.⁴⁶ Both definitions correlate with the object and purpose of the NPT as a non-proliferation treaty:⁴⁷ to reduce nuclear weapons proliferation to ensure a more stable world, as referenced in the Preamble.⁴⁸ Therefore, the use of nuclear technologies only for ends devoid of violence are mandated by such a scheme.

Because the definition of “peaceful” applies equally to both terms, the most relevant distinction lies between “purpose” and “use”—specifically the presence of intent in “purpose.”⁴⁹ This is pertinent for determining whether depleted uranium and naval reactor fuel should be categorized as “peaceful purposes” under Article IV.1 because of their applications in the military context. Ultimately, it is the *intent* of the state that matters—whether the state will, in

⁴² The dictionary definitions are not being used as an ultimate source of meaning. This is especially true because the key terms here are phrases and not single words. Rather, the definitions are simply meant as a starting point to demonstrate common understanding.

⁴³ *Peaceful*, MERRIAM-WEBSTER COLLEGIATE DICTIONARY (11th ed. 2014).

⁴⁴ *Use*, MERRIAM-WEBSTER COLLEGIATE DICTIONARY (11th ed. 2014).

⁴⁵ *Purpose*, MERRIAM-WEBSTER COLLEGIATE DICTIONARY (11th ed. 2014).

⁴⁶ It is relevant to note the application of this interpretation to nuclear deterrence, as this is a common practice among states. While deterrence is effectively a threat of great violence, it is different from the “peaceful purpose” question addressed here because deterrence does not actually promulgate any tangible violence or aggression. A “peaceful purpose” contemplates only tangible actions, not threats. Therefore, it remains a separate issue.

⁴⁷ See Greenberg, *supra* note 17 (“Hypothetically, any nuclear energy application denominated as ‘peaceful’ would escape the prohibitions of Articles I and II. . . . But clearly it makes no sense to interpret Article IV in such a fashion, for to do so would be to undercut the *fundamental purpose of the Treaty to halt proliferation*, primarily through the prohibitions of Articles I and II.”) (emphasis added).

⁴⁸ See NPT, *supra* note 2, pmb1. (“The States concluding this Treaty Considering the devastation that would be visited upon all mankind by a nuclear war and the consequent need to make every effort to avert the danger of such a war and to take measures to safeguard the security of peoples, Believing that the proliferation of nuclear weapons would seriously enhance the danger of nuclear war. . . .”).

⁴⁹ While the element of intent may not be explicitly present in some uses of the term “purpose” (*e.g.*, if used as a synonym for “application”), that is not the case here. Even if the drafters meant for “purpose” to convey a meaning of functionality, such that one state could ask the question of another state, “What purpose does this nuclear activity serve?” the element of intent remains; the answer of the second state would be, “We *intend* it to”.

fact, use the depleted uranium for tank armor and shielding, rather than for armor-piercing projectiles; or whether it will use the naval reactor fuel to power a research submarine, as opposed to a nuclear submarine meant for aggressive purposes.⁵⁰

While contrasting these definitions in the context of the NPT's object and purpose provides some insight into the proper interpretation of "peaceful purpose"—specifically that it is the state's intent that ultimately matters—it is still not enough to definitively categorize depleted uranium or naval reactor fuel. Therefore, it is necessary to examine states' subsequent practice.

2. *Article 31 – Subsequent Practice*

Article 31(3) of the VCLT directs that the subsequent practice of states may also be considered as a tool of interpretation. Such a method is commonplace in the international arena, as confirmed by Sean D. Murphy, a member of the U.N. International Law Commission.⁵¹ This section will examine the subsequent practice of states, which is founded on—but by no means constrained by—the criteria set forth by the first Director of the Arms Control and Disarmament Agency (ACDA),⁵² William Foster. This section will also present theoretical subsequent practice, as outlined by academics and scholars, and will then turn to the actual subsequent practice of states. The actual subsequent practice will be examined from the distinct viewpoints of NWS and NNWS.

a. *Subsequent Practice – Academics and Scholars*

While the drafters of the NPT may not have attached much importance to the difference between the definitions of "use" and "purpose," as evidenced by the fact that the terms are used interchangeably throughout the NPT, Article

⁵⁰ Even if a state declares that it only seeks to *possess* depleted uranium or naval reactor fuel without having yet decided how to use the materials, an inquiry into how the state intends to use the materials once possessing them would still be necessary to determine whether the eventual use would be peaceful.

⁵¹ Sean D. Murphy, *The Relevance of Subsequent Agreement and Subsequent Practice for the Interpretation of Treaties*, in *TREATIES AND SUBSEQUENT PRACTICE* 82, 85 (Georg Nolte ed., 2013) ("In my own experience as a government attorney, it was quite common when analyzing a commitment under a treaty to take account of not just the ordinary meaning of the text but the manner in which governments had applied the treaty since its inception. Indeed, I would regularly read a provision in an investment treaty or environmental agreement or military protocol, and see multiple possible interpretations or shades of meaning, which could only be resolved by going into the files to figure out how the provision had been applied over time.").

⁵² The Arms Control and Disarmament Agency (ACDA) has since been abolished and its functions absorbed into the State Department. Records of the U.S. Arms Control and Disarmament Agency (RG 383), NAT'L ARCHIVES, <https://www.archives.gov/research/foreign-policy/related-records/rg-383> (last updated Oct. 18, 2017).

31(3) of the VCLT dictates that an equally important part of interpreting a provision is states’ subsequent practice regarding the implementation of the relevant provision. Although the NPT provides no explicit definition of “peaceful purpose,” and because the dictionary definition alone does not suffice, over the years, scholars and government officials alike have taken a somewhat more qualified stance on the proper interpretation of “peaceful purpose.” Some, including ACDA Director Foster, have even expressed the importance of a state’s intent regarding the use of nuclear technologies.

When Foster testified before the Senate Committee on Foreign Relations in 1968, he established the criteria for subsequent interpretations of, and practices implementing, nuclear activities for “peaceful purposes.” Foster stated that “facts indicating that the *purpose* of a particular activity was the acquisition of a nuclear explosive device would tend to show non-compliance.”⁵³ Foster thus implied that the starting point for determining what constitutes a “peaceful purpose” is anything that is neither a nuclear weapon nor a nuclear explosive device, per the terms of the NPT.

In his analysis of the “Foster criteria” (as they have come to be known), James Acton, Co-Director of the Nuclear Policy Program and Senior Associate at the Carnegie Endowment, states, “Foster could hardly be clearer: [i]n his view[,] article IV permits pretty much anything short of building a nuke so long as (i) it is carried out under safeguards and (ii) it is done with peaceful intent”⁵⁴ Bertrand Goldschmidt, former Chair of the Board of Governors of the International Atomic Energy Agency (IAEA) and one of the founders of France’s nuclear program, supported this view, believing that “explosion is forbidden, everything else is allowed. Nothing in the NPT prohibits Party States

⁵³ *Nonproliferation Treaty: Hearings Before the S. Comm. on Foreign Rel.*, 90th Cong. 39 (1968) (statement of Hon. William C. Foster, Director, U.S. Arms Control and Disarmament Agency) (emphasis added). Foster went on to elaborate:

It may be useful to point out, for illustrative purposes, several activities which the United States would not consider per se to be violations of the prohibitions in Article II. Neither uranium enrichment nor the stockpiling of fissionable material in connection with a peaceful nuclear program would violate Article II so long as these activities were safeguarded under Article III. Also clearly permitted would be the development, under safeguards, of plutonium fueled power reactors, including research on the properties of metallic plutonium, nor would Article II interfere with the development or use of fast breeder reactors under safeguards. *Id.*

Of course, if a NNWS possesses a nuclear explosive device, it is a per se violation of the NPT; thus, a “peaceful purpose” analysis is not necessary.

⁵⁴ James Acton, *What Does Article IV Mean?*, ARMS CONTROL WONK (Aug. 22, 2008), www.armscontrolwonk.com/archive/602007/what-does-article-iv-mean/.

from following the technical path of their choice.”⁵⁵ This means any application of nuclear materials or technologies, so long as they are not used for nuclear weapons or nuclear explosive devices,⁵⁶ would be classified as a “peaceful purpose.” Such a definition would include depleted uranium and naval reactor fuel, used in either an aggressive or non-aggressive military context, so long as they were not used for nuclear weapons or nuclear explosive devices. These views have thus become the standard for states’ subsequent interpretation and practice.

Perhaps the most overarching modern interpretation of “peaceful purpose” correlates with the dictionary definitions of the terms—namely, that a “peaceful purpose” encompasses any end to be attained or intention that is not forceful or aggressive.⁵⁷ A different, but still overarching, definition is that “only non-military uses are consonant with the provision.”⁵⁸ Zedalis compares these two definitions in the context of the Law of the Sea. He writes:

[I]f only non-military uses are permitted, then the high seas may not be employed for any activity of a military nature, including the navigation of warships. On the other hand, if “peaceful purposes” simply prescribes a non-aggressive standard, then the high seas may legally be used for a whole host of activities of a military nature as long as none of the activities are aggressive.⁵⁹

These definitions are useful for comparison with Article IV’s “peaceful purpose” provision. If only non-military uses are permitted as “peaceful purposes” under the NPT, then any nuclear activity of a military nature is deemed prohibited, even if non-aggressive. Under this definition, the use of depleted uranium in tank armor and shielding and naval reactor fuel that powers research submarines would not be permitted. While neither nuclear weapons nor nuclear explosive devices, both of these resources are still used in the military context, albeit non-aggressively. Zedalis’s other definition—that nuclear activities constitute a permissible use in the military context as long as they are “non-aggressive”—simply reiterates the ambiguity at issue here, for the aforementioned uses of depleted uranium and naval reactor fuel are neither explicitly aggressive in the military context nor peaceful. Therefore, other modern interpretations must be examined for clarification.

⁵⁵ Xinjun, *supra* note 34, at 44.

⁵⁶ It is relevant to note that on its face, the NPT still permits peaceful nuclear explosions. However, the Comprehensive Nuclear Test-Ban Treaty (CTBT) will prohibit such explosions upon entry into force.

⁵⁷ Zedalis, *supra* note 34, at 18.

⁵⁸ *Id.*

⁵⁹ *Id.* at 18–19.

One interpretation that has contributed to the subsequent practice of states encompassed within “peaceful purposes” is the use of nuclear energy to better society as a whole. Daniel Rietiker includes health and well-being, food security, sustainability, combating climate change, and the right to life within the category of nuclear activities employed for “peaceful purposes.”⁶⁰ While Rietiker does not distinguish between “use” and “purpose,” the technologies employed to accomplish the goals he mentions retain the element of intent.⁶¹ In other words, just as utilizing naval reactor fuel in a research submarine requires definitive action on the part of the state employing the submarine *not* to use it instead for aggressive purposes, a state must definitively choose only to enrich uranium to low levels suitable for civilian purposes, such as generating electricity, rather than to high levels suitable for nuclear weapons or naval reactors.⁶²

Another modern interpretation of “purpose”—albeit extreme—is that it should be deemed altogether irrelevant. Seth Hoedl “proposes that Article IV of the NPT be interpreted⁶³ so that all nuclear activities are presumed non-peaceful, i.e., undertaken in pursuit of nuclear explosives and in violation of the NPT, unless such activities are licensed by an international agency.”⁶⁴ Hoedl argues that eliminating any consideration of intent “would resolve the ambiguity of peaceful use [by] . . . creat[ing] a legal bright line between peaceful and non-peaceful”⁶⁵

While these proposed interpretations of “peaceful purpose” are theoretically useful, it remains necessary to examine states’ *actual* subsequent practice to see how they have implemented this provision.

⁶⁰ See Daniel Rietiker, *Between Prosperity and Destruction: A Modern Interpretation of the Right to Peaceful Use of Nuclear Energy in Light of the Protection of Human Rights and Future Generations*, in *NUCLEAR NON-PROLIFERATION IN INTERNATIONAL LAW, VOL. III: LEGAL ASPECTS OF THE USE OF NUCLEAR ENERGY FOR PEACEFUL PURPOSES* 21, 37–42 (Jonathan L. Black-Branch & Dieter Fleck eds., 2016). Other applications may be included here as well, such as nuclear medicine. However, the use of a nuclear power plant to provide electricity to a military base which presumably conducts aggressive activities would not be included as a “peaceful purpose.” See Annual Budget Message to the Congress: Fiscal Year 1961, 1960 PUB. PAPERS 37, 58 (Jan. 18, 1960) (reflecting President Eisenhower’s categorization of powering military bases using nuclear-generated electricity as a use other than a “peaceful use” of atomic energy).

⁶¹ Rietiker, *supra* note 60, at 37–42.

⁶² It should be noted that, while many states use high enriched uranium (HEU) in their naval reactors, some do use low enriched uranium (LEU). See George Moore, Cervando Banuelos & Thomas Gray, *Replacing Highly Enriched Uranium in Naval Reactors*, *NUCLEAR THREAT INITIATIVE* (Mar. 24, 2016), <http://www.nti.org/analysis/reports/replacing-highly-enriched-uranium-naval-reactors/>.

⁶³ While Hoedl’s reference to “interpretation” is understood in context, his suggestion might be so significant as to require an amendment to the NPT rather than simply a different interpretation. Hoedl, *supra* note 12, at 69.

⁶⁴ *Id.*

⁶⁵ *Id.*

b. *Subsequent Practice – NWS*

Greenberg succinctly presents the view of NWS by quoting Adrian Fisher, who led the original NPT negotiations on behalf of the United States: “[T]he NPT ‘does not require us to do something foolish.’”⁶⁶ This implies that NWS have largely adopted the view that any nuclear materials or technologies that could potentially be repurposed to create nuclear weapons or nuclear explosive devices must remain under IAEA safeguards. This view is consistent with the object and purpose of the NPT and likely encompasses depleted uranium and naval reactor fuel: while their most frequent use is not for nuclear weapons or nuclear explosive devices, states most often use these materials in the military context.⁶⁷ However, many NWS have avoided explicitly defining what constitutes the use of nuclear energy for “peaceful purposes,” likely for fear of being accused of “nuclear discrimination.”⁶⁸

Rather than making such an explicit statement, NWS have instead opted to emphasize the interrelationship of Articles I, II, and III to substantiate the point that nuclear energy, even for “peaceful purposes,” must necessarily take a back seat to the NPT’s overall nonproliferation objective.⁶⁹ While methods of treaty interpretation generally give full implementation to all parts of a treaty without reading in a hierarchy among the various articles, it is nonetheless acceptable for a state to argue for greater weight to be attached to a particular aspect of the treaty—often depending on the current political climate. As Christopher Ford explained at the 2005 NPT Review Conference on behalf of the United States:

The NPT does not require any specific sharing of nuclear technology between particular States Party, nor does it oblige technology-

⁶⁶ Greenberg, *supra* note 17, at 121 (quoting *Hearings on S.1439 before the S. Comm. on Government Operations*, 94th Cong., 2d Sess. 141 (1976)).

⁶⁷ See generally Andrew Womack, *The Latest Nuclear War: Does the Use of Depleted Uranium Armaments and Armors Constitute a War Crime?*, 41 VT. L. REV. 405 (2016).

⁶⁸ Ford, *Nuclear Technology Rights and Wrongs: The NPT, Article IV, and Nonproliferation*, *supra* note 5, at 246 (“At the 2005 NPT Review Conference, for instance, a working paper offered by several Western governments carefully refrained from spelling out what Article IV actually entails, instead stressing that whatever rights it may enshrine are not ones that countries necessarily have to act upon. ‘States may choose individually not to exercise all their rights,’ the paper carefully noted, ‘or to exercise those rights collectively.’ In a similar vein, the European Union (EU) tap-danced around the question by declaring that ‘[t]he right to peaceful uses of nuclear energy remains undisputed,’ but without describing what it actually means to have such a right. Instead, the EU’s working paper on the subject merely pleaded the policy merits of ‘multilateralization/ guarantees of access to the fruits of the most sensitive parts of the nuclear fuel cycle.’”).

⁶⁹ *Id.* But see DANIEL H. JOYNER, *INTERPRETING THE NUCLEAR NON-PROLIFERATION TREATY 75* (Oxford Univ. Press 2011) (“The NPT is substantively and structurally comprised of three primary principled pillars—i.e. civilian use of nuclear energy, non-proliferation of nuclear weapons, and disarmament of nuclear weapons These three principled pillars *together* comprise the object and purpose of the NPT.”).

possessors to share any specific materials or technology with non-possessors. Indeed, to conform both to the overall objective of the NPT—strengthening security by halting nuclear proliferation—and to any Article I and III obligations, supplier states must consider whether certain types of assistance, or assistance to certain countries, are consistent with the nonproliferation purposes and obligations of the NPT, other international obligations, and their own national requirements. . . . While compliant State[s] Party should be able to avail themselves of the benefits that the peaceful use of nuclear energy has brought to mankind, the Treaty establishes no right to receive any particular nuclear technology from other States Party—and most especially, no right to receive technologies that pose a significant proliferation risk.⁷⁰

Based on Ford’s statement, it may be inferred that the U.S. position—and likely the position of other NWS—is that, regardless of intent, NNWS are not explicitly granted the right to materials or technologies that could result in the proliferation of nuclear weapons or nuclear explosive devices under the NPT.⁷¹ Therefore, to conform to the object and purpose of the NPT, NNWS should not be allowed to access or develop such technologies.⁷² This view is especially applicable because certain states have operated under the guise of acquiring nuclear technology for peaceful purposes only to renege on that premise and initiate nuclear weapons programs.⁷³ Charles Ferguson, writing for the Council on Foreign Relations, further supported this contention by warning that “‘greater efforts are needed . . . to limit the spread of fuel-making technologies’ and declar[ing] that ‘the NPT’s right to peaceful nuclear technologies’ should be ‘properly interpret[ed]’ to make clear that ‘[t]his right . . . comes with the responsibility to maintain adequate safeguards’ and . . . does not . . . guarantee ‘nuclear fuel-making facilities as part of that right.’”⁷⁴

⁷⁰ See Ford, Statement to the 2005 Review Conference of the Treaty on the Nonproliferation of Nuclear Weapons: NPT Article IV: Peaceful Uses of Nuclear Energy, *supra* note 9. The corollary is also true: even if a state has a right to the full nuclear cycle, that does not imply that that state has a right to receive any particular item or component from another, specific state. *Id.* The right of states to acquire nuclear materials and technologies does not impose a reciprocal obligation on other states to supply such items. *Id.*

⁷¹ *But see* China, *Peaceful Uses of Nuclear Energy* 1 (NPT Conf. 2005, Working Paper No. 6, 2005) (“Non-proliferation efforts should not undermine the legitimate rights of countries, especially the developing countries, to the peaceful uses of nuclear energy.”).

⁷² See, e.g., *Promoting Expanded and Responsible Peaceful Uses of Nuclear Energy*, BUREAU OF INT’L SECURITY & NONPROLIFERATION (Apr. 16, 2007), <https://2001-2009.state.gov/t/isn/rls/other/83210.htm>.

⁷³ See generally Henry Sokolski, *After Iran: Back to the Basics on “Peaceful” Nuclear Energy*, ARMS CONTROL ASS’N (Apr. 1, 2005), http://www.armscontrol.org/act/2005_04/Sokolski.

⁷⁴ Ford, *Nuclear Technology Rights and Wrongs: The NPT, Article IV, and Nonproliferation*, *supra* note 5, at 24 (quoting CHARLES FERGUSON, NUCLEAR ENERGY: BALANCING BENEFITS AND RISKS 16-17 (Council on Foreign Relations Press, Council Special Report No. 28, 2007)).

In practical implementation of this interpretation, three of the five NWS—the United States, the United Kingdom, and France—have provided monetary support to the IAEA’s Peaceful Uses Initiative (PUI).⁷⁵ The PUI “supports IAEA projects that apply nuclear technologies to areas that include human health, food security, water resource management, and the development of nuclear power infrastructure.”⁷⁶ Since 2010, the United States has given more than \$50 million to the PUI, and at the 2015 Review Conference, it pledged to give another \$50 million by 2020.⁷⁷ The United States has indicated that its support should be used to fund projects that bolster “[h]uman health, [f]ood security, [w]ater resource management, [and] [d]evelopment of infrastructure for the safe and secure use of civil nuclear power” in underdeveloped countries.⁷⁸ Additionally, while the United Kingdom and France have both contributed funding to the PUI, it is unclear how much they contributed or whether they dedicated their funds to certain projects, as the United States did.⁷⁹

It is therefore somewhat apparent that NWS’ subsequent practice has evolved to eliminate any materials or technologies that could be used for nuclear weapons or nuclear explosives—dependent on the state’s intent—from the category of “peaceful purpose.” However, this practice neither presents a clear definition of “peaceful purpose” as it relates to materials and technologies like depleted uranium and nuclear reactor fuel, nor has it been accepted by NNWS.

c. Subsequent Practice – NNWS

As expected, many NNWS have not happily accepted the NWS practice of placing restrictions on sharing sensitive nuclear materials and technologies. Many NNWS understand Article IV to imply that they *are* entitled to access to such materials and technologies because they are given the “inalienable right . . . to develop research, production and use of nuclear energy for peaceful purposes”⁸⁰ NNWS rely on the premise that nothing in Article IV precludes them from such technologies and, therefore, as long as the technologies are in compliance with Articles I, II, and III, they are encompassed in the “research,

⁷⁵ See *Funding*, IAEA, <https://www.iaea.org/about/pui/funding> (last visited Feb. 11, 2018).

⁷⁶ *NPT Compliance*, NNSA, <https://nnsa.energy.gov/ourmission/managingthestockpile/nptcompliance> (last visited Feb. 11, 2018). For a full list of the activities that the PUI supports, see *What is the Peaceful Uses Initiative (PUI)*, IAEA, <https://www.iaea.org/services/key-programmes/peaceful-uses-initiative> (last visited Feb. 11, 2018).

⁷⁷ See *NPT Compliance*, *supra* note 76.

⁷⁸ Jennie Gromoll, Presentation for the Global Partnership Working Group, Stockholm (Aug. 29, 2012), <https://2009-2017.state.gov/documents/organization/202626.pdf>.

⁷⁹ See *Funding*, *supra* note 75.

⁸⁰ NPT, *supra* note 2, art. IV.1.

production, and use . . . for peaceful purposes” language.⁸¹ Indeed, in the NPT, what is not expressly “prohibited is [generally] permitted.”⁸² Cuba vehemently advocated for this interpretation at the 2005 NPT Review Conference, stating that “the unilateral restrictions put in place by some States parties to the Treaty—in most cases for political reasons—that impede other States parties’ peaceful uses of nuclear energy are a violation of the Treaty, and should cease.”⁸³ Similarly, Iran advocated that “[m]easures taken by the States Parties to prevent nuclear proliferation should facilitate rather than hamper the exercise of the recognized rights of the developing States Parties to the Treaty for the peaceful applications of nuclear energy. Imposition of undue restrictions . . . is a manifest violation of Article IV obligations”⁸⁴

Certain scholars also adopt and champion the viewpoint of NNWS. Daniel C. Rislove advocates on behalf of NNWS having the right to access all nuclear materials and technologies, even if such materials and technologies have the potential to be used for aggressive military purposes.⁸⁵ He writes, “[f]irst, the use of nuclear technology for energy generation does not automatically imply an intention, or even a capability, of assembling a nuclear arsenal. Second, there may exist a sovereign right to use nuclear technology not only for peaceful purposes but for defensive military purposes as well.”⁸⁶ Professor Daniel Joyner takes the position that this is the correct reading of Article IV, especially in light of the three pillars—civilian use of nuclear energy, nonproliferation of nuclear weapons, and nuclear weapon disarmament—which comprise the object and purpose of the NPT.⁸⁷ Joyner writes:

NWS officials during the target era justified their disproportionate prioritization of the non-proliferation pillar of the NPT over the peaceful use and disarmament pillars of the NPT, *inter alia* by reference to the legal interpretation that the non-proliferation pillar of the NPT is the principal, primary, central, or core principled pillar of the treaty, and that the other two pillars are of secondary or lesser legal

⁸¹ *Id.*

⁸² Cable No. 121338 from the U.S. Dep’t of State to the U.S. Embassy, Bonn, Non-Proliferation Treaty (Jan. 18, 1967) (on file with the National Security Archive, The George Washington University). This is also a vital principle of international law, dating back to the *Lotus* case. See *S.S. Lotus (Fr. v. Turk.)*, 1927 P.C.I.J. (ser. A) No. 10 (Sept. 7) (standing for the proposition that a state has the right to act as it wishes, provided it has not consented to any constraint upon its actions).

⁸³ Cuba, *Peaceful Uses of Nuclear Energy* 1 (NPT Review Conf. 2005, Working Paper No. 25, 2005).

⁸⁴ Islamic Republic of Iran, *Peaceful Use of Nuclear Energy* 3 (NPT Review Conf. 2005, Working Paper No. 50, 2005).

⁸⁵ See Daniel C. Rislove, *Global Warming v. Non-Proliferation: The Time Has Come for Nations to Reassert Their Right to Peaceful Use of Nuclear Energy*, 24 WIS. INT’L L.J. 1069, 1073 (2007).

⁸⁶ *Id.*

⁸⁷ See JOYNER, *supra* note 69.

status and weight. This was in stark contrast to the statements of many NNWS parties to the NPT, and particularly developing countries, who tended to stress the need for balance and equal prioritization among the three pillars.⁸⁸

In his statement on behalf of the United States to the 2008 NPT Preparatory Committee, Joyner goes on to criticize Christopher Ford, emphasizing that what the NWS perceived to be the most important aspect of the NPT—namely, nonproliferation—cannot be construed as being the most important aspect according to *all* states party because “the *travaux préparatoires* of the NPT, when taken in their entirety show that NNWS generally did not share this perception, and had their own set of equally ‘core’ issues which they demanded be included in the treaty.”⁸⁹ Joyner thus concludes that Article IV prohibits NNWS only from those nuclear materials and technologies expressly prohibited by the NPT.⁹⁰

While Joyner’s interpretation is easily postulated on paper, it is much more difficult for NNWS to implement. Specifically, the group from which the NNWS would acquire such sensitive materials and technologies—or, at least which they would need to consult for approval—is the NSG, of which the NWS, who staunchly oppose this view, are a part.⁹¹ Nonetheless, many NNWS have also contributed funding to the PUI, expressing their overall support for the peaceful applications of nuclear materials and technologies.⁹²

Considering these varied and sometimes conflicting interpretations, how then to conclude a working definition of “peaceful purpose”? Joyner provides some guidance in his analysis of the proper interpretation of “manufacture,” found in Articles I and II of the NPT.⁹³ Joyner discusses a definition of “manufacture” that implicates the intent of the state to produce or otherwise acquire a nuclear weapon but ultimately disqualifies such a definition because of the difficulty of proving “intent.”⁹⁴ He emphasizes the importance of the act

⁸⁸ *Id.* at 76.

⁸⁹ *Id.* at 77.

⁹⁰ *Id.* at 83 (“Article IV(1) serves . . . to clarify that states retain all rights to engage in nuclear activities which are not clearly delineated by the conventional prohibitive obligation in Article II and by those terms forbidden to them.”).

⁹¹ See *Participants*, NUCLEAR SUPPLIERS GROUP, <http://www.nuclearsuppliersgroup.org/en/participants1> (last visited Feb. 11, 2018) (illustrating that the NWS are part of the NSG).

⁹² See *Funding*, *supra* note 75.

⁹³ Daniel Joyner, *Iran’s Nuclear Program and the Legal Mandate of the IAEA*, JURIST (Nov. 9, 2011, 5:00 PM), <http://www.jurist.org/forum/2011/11/dan-joyner-iaea-report.php>; see also Jonas, *Ambiguity Defines the NPT: What Does ‘Manufacture’ Mean?*, *supra* note 16.

⁹⁴ See Joyner, *supra* note 93.

(*actus reus*), rather than solely the requisite mental state (*mens rea*), which U.S. domestic law requires to prove criminal intent and analogizes this concept to demonstrate the difficulty of proving a state’s intent to manufacture a nuclear weapon or nuclear explosive device.⁹⁵ The same logic reasonably applies to the interpretation of “peaceful purpose.”⁹⁶ Because it is so difficult to prospectively determine the intent of a state, it would be equally difficult to determine how a state intends to use depleted uranium or naval reactor fuel as it would be to conclude, as Joyner notes, that a state intends to manufacture a nuclear weapon or nuclear explosive device simply because it has the capability to do so.⁹⁷

Therefore, perhaps the most logical interpretation of “peaceful purpose” would be to adopt the approach advocated by Hoedl; namely, that “purpose”—insofar as it implies intent—should be deemed irrelevant and international licensing controls should be instituted.⁹⁸ However, because this is a prospective view aimed at taking future action rather than determining what the drafters meant by “peaceful purpose,” it remains necessary to consult the *travaux préparatoires* of the NPT to see whether they provide any further guidance.

3. Article 32 – Drafting and Negotiating History

Regrettably, there is little to be found in the drafting and negotiating history of the NPT that illuminates a possible definition of “peaceful purpose.” Indeed, what *is* evident is that many states party to the NPT pushed to include such a definition. In his seminal work on the NPT, Egyptian Ambassador to the United Kingdom Mohamed I. Shaker outlined the desire of many of the states party to the NPT (mostly NNWS) to clarify what constitutes the use of nuclear energy for “peaceful purposes”:

⁹⁵ *Id.* (“While domestic legal systems routinely provide for the inference of intent as one criterion for the establishment of tortious or criminal liability, they seldom if ever provide for a determination of intent prospectively, i.e. in domestic law we seldom if ever allow a finder of fact to infer from evidence what the accused party intends to do in the future. Rather, we wait until the *actus reus*, or objective act-based element of a crime is committed before putting *actus reus* and *mens rea* together to determine liability. This is both an evidentiary point as well as a substantive element point. Substantively, it would be nearly impossible to ever show from evidence that falls short of satisfying the legal concept of ‘manufacture’ as interpreted above, that an accused state nevertheless intends in the future to manufacture a nuclear explosive device. It will in almost all conceivable cases be just as reasonable, if not more so, to infer an intent simply to develop the knowledge and capacity necessary to manufacture a nuclear weapon, without actually constructing working components or a finished device.”).

⁹⁶ Some might argue that the task of interpreting a treaty is not identical to the task of interpreting a statute or contract, and that “intent” implies something different when applied to human beings as opposed to states. However, this Article asserts that human beings set state policy and thus are the driving force of states’ intent; therefore, the Article does not distinguish between the two when referring to “intent.”

⁹⁷ See Joyner, *supra* note 93.

⁹⁸ Hoedl, *supra* note 12, at 69.

No area of peaceful nuclear energy seems to be precluded by the NPT including the development and use of peaceful nuclear explosions which are, however, the strict domain of the nuclear-weapon States. Nevertheless, there was an urge by many States to define explicitly the peaceful uses of nuclear energy. For example, the representative of the FRG in Committee Two of the Conference of Non-Nuclear-Weapon States found that “the wording of the Treaty was not sufficiently explicit to permit a definition of peaceful uses, as distinct from the prohibited production of nuclear weapons, which did not lend itself to different interpretations.”⁹⁹

Despite the fact that the negotiating history of the NPT is replete with suggested examples of peaceful applications of nuclear energy, ultimately no definition of “peaceful purpose” was included in the text of the treaty.¹⁰⁰ This is not surprising considering so many key terms remain undefined—including one as vital as “NNWS.”¹⁰¹

However, Ambassador Shaker manages to categorize nuclear materials and technologies which may qualify as “peaceful” into five groups, the objective of which is either the generation of energy or the use of ionizing radiation and radioactive isotopes.¹⁰² The five categories he identifies are: (1) mining and concentration of nuclear raw materials; (2) production of enriched uranium; (3) fabrication of nuclear fuel elements; (4) design, construction, and operation of nuclear reactors; and (5) fuel reprocessing.¹⁰³ Therefore, because the drafters did not include an explicit definition of “peaceful purpose” and because materials and technologies such as depleted uranium and naval reactor fuel do not easily fit into any of the above five groupings, they should not be included in the “peaceful purpose” category.

The exclusion of these materials would fit well with the interpretation of “peaceful purpose” used by states in the few preparatory works available for consultation. States generally adopted three prevalent interpretations: (1) a peaceful purpose is anything not intended for a nuclear weapons program, which

⁹⁹ MOHAMED I. SHAKER, *THE NUCLEAR NON-PROLIFERATION TREATY: ORIGIN AND IMPLEMENTATION 1959-1979* VOL. I, at 279–80 (1980) (citing U.N. Doc. A/CONF.35/C.2/SR.4 (Sept. 10, 1968)).

¹⁰⁰ *See, e.g.*, U.N. Doc. A/C.1/PV.1568, at 7–8 (May 15, 1968).

¹⁰¹ *See* David S. Jonas, *Variations on Non-Nuclear: May the “Final Four” Join the Nuclear Nonproliferation Treaty as Non-Nuclear Weapon States While Retaining Their Nuclear Weapons?*, 2005 MICH. ST. L. REV. 417, 443 (2005) (expanding the problem presented by the absence of a definition of “NNWS” to examine whether the states not party to the NPT—at the time of writing, Israel, India, Pakistan, and North Korea—could join while retaining their nuclear weapons).

¹⁰² *See* SHAKER, *supra* note 99, at 282.

¹⁰³ *Id.*

is distinct from use in a military context; (2) a peaceful purpose is anything not intended to be used in a military context, which may or may not include a nuclear weapons program; or (3) a peaceful purpose is anything not intended for a nuclear weapons program—itsself considered for use in a military context.¹⁰⁴

The United States is one of the few states that encompassed all three interpretations in one document. In a memorandum entitled “Value and Feasibility of a Nuclear Nonproliferation Treaty,” the United States proposed that “[t]he nuclear weapons non-manufacturing obligation should preferably include acceptance of IAEA safeguards against possible diversion of fissionable material from peaceful nuclear facilities to military purposes.”¹⁰⁵ Here, peaceful purposes are contrasted with military purposes, which indicates that a peaceful purpose is anything not intended to be used in a military context. The memorandum goes on to declare that “[i]n the absence of safeguards, it would be very difficult to tell whether large-scale nuclear facilities for peaceful purposes . . . are being used for a nuclear weapons program.”¹⁰⁶ Here, a peaceful purpose is assumed to be the exact opposite of a nuclear weapons program, which, in conjunction with the first reference, leads the reader to believe that the United States interpreted “peaceful purpose” to be anything not intended for a nuclear weapons program, where the weapons program itself is considered to be for use in a military context. This is confirmed at the end of the memorandum, where it asserts that “[a]cceptance of IAEA safeguards by key non-nuclear states would probably be encouraged if the nuclear powers were to accept such safeguards over all their non-military nuclear activities, and/or to halt production of fissionable material for use in nuclear weapons.”¹⁰⁷ In this final declaration, military purposes are equated with nuclear weapons programs, but both of those are excluded from the “peaceful purpose” category.

In contrast, the focus of the Union of Soviet Socialist Republics (USSR) appears to have been solely on “peaceful purpose” as the direct opposite of “military purpose.” In a draft of the NPT submitted on September 24, 1965, to the President of the U.N. General Assembly, the USSR proposed that a section of Article I read: “The said Parties to the Treaty shall not transfer nuclear weapons, or control over them or over their emplacement and use, to units of the armed forces or military personnel of States not possessing nuclear weapons,

¹⁰⁴ U.S. Internal Paper, “Value and Feasibility of a Non-Proliferation Treaty” (Dec. 10, 1964) (on file with the Lyndon Baines Johnson Library).

¹⁰⁵ *Id.*

¹⁰⁶ *Id.*

¹⁰⁷ *Id.*

even if such units or personnel are under the command of a military alliance.”¹⁰⁸ The USSR proposed similar language for Article II,¹⁰⁹ presumably operating under the interpretation that any use of nuclear materials or technologies in the military context would not be for peaceful purposes.

Likewise, the government of Australia feared whether, even with international safeguards and controls, nuclear materials and technologies for peaceful purposes could be effectively monitored to prohibit states from misappropriating them to violent and aggressive military purposes.¹¹⁰ Mexico, too, likely interpreted “peaceful purpose” to mean the direct opposite of use in a military context, as it was the state to originally propose including the language of Article IV in the NPT.¹¹¹ This language was derived from Article 17 of the Treaty of Tlatelolco, which reads: “Nothing in the provisions of this Treaty shall prejudice the rights of the Contracting Parties, in conformity with this Treaty, to use nuclear energy for peaceful purposes, in particular for their economic development and social progress.”¹¹² It is fair to assume that Mexico attached the same interpretation to “peaceful purpose” in the NPT as in the Treaty of Tlatelolco, which explicitly states that a “peaceful purpose” is one that is meant to develop the economic and social aspects of society rather than the military.¹¹³

III. MOVING FORWARD

It is indeed surprising that a definition of “peaceful purpose” has not yet been demanded by states party to the NPT. While this may be because it has become internationally accepted that a “peaceful purpose” is one that is not a nuclear weapon or a nuclear explosive device, as expressly prohibited by the NPT, this

¹⁰⁸ Draft Treaty on the Non-Proliferation of Nuclear Weapons, *attached to* Letter from the Minister for Foreign Affairs of the Union of Soviet Socialist Republics to the President of the U.N. General Assembly (Sept. 24, 1965) (on file with the National Security Archive, The George Washington University). It is important to note that this language was aimed primarily at North Atlantic Treaty Organization (NATO) NNWS. *Id.*

¹⁰⁹ *Id.*

¹¹⁰ Cable No. 4923 from U.S. Embassy, Canberra, to Dep’t of State, Non-Proliferation Treaty (Apr. 10, 1969) (on file with The National Security Archive, The George Washington University).

¹¹¹ See Ford, *Nuclear Technology Rights and Wrongs: The NPT, Article IV, and Nonproliferation*, *supra* note 5, at 327.

¹¹² Treaty for the Prohibition of Nuclear Weapons in Latin America and the Caribbean, *opened for signature* February 14, 1967, 634 U.N.T.S. 326 (entered into force Apr. 25, 1969) [hereinafter Treaty of Tlatelolco]. The Treaty of Tlatelolco was opened for signature and entered into force prior to the NPT; the Treaty of Tlatelolco was opened for signature in 1967 and entered into force in 1969, whereas the NPT was opened for signature in 1968 and entered into force in 1970.

¹¹³ However, the authors acknowledge that it is often difficult to construe meaning from silence or the absence of a provision. Some might therefore argue that the absence of the Tlatelolco provision in the NPT was deliberate and intended to convey a different meaning.

definition may very well be contested at some point in the future as certain nuclear materials and technologies become more advanced or, alternatively, as they become increasingly important to matters of national security. The question may therefore arise as to whether the use of such materials and technologies, such as depleted uranium and naval reactor fuel, is permitted or prohibited by the NPT.

In such circumstances, the following analytical framework is useful. First, it is necessary to establish that the NPT does not define what is allowed as a “peaceful purpose” the way it explicitly states what is prohibited—namely, nuclear weapons and nuclear explosive devices. Second, “peaceful purpose” must be defined as per the dictionary definitions of each of its terms. This establishes that a “peaceful purpose” is an intention that is carried out in a non-aggressive manner. Third, examining the subsequent practice of states will reveal that, while “peaceful purpose” has evolved to mean the exact opposite of the expressly prohibited nuclear weapons and nuclear explosive devices, some states have contributed alternative interpretations by means of subsequent practice. However, none of these alternative interpretations expressly rule out the use of nuclear materials and technologies for military purposes so long as they are not used for nuclear weapons or nuclear explosive devices. These alternative interpretations tend to fall along the division between NWS and NNWS, however, which will likely influence the weight that they carry—dependent upon whether the state raising the question is a NWS or NNWS. Finally, it is helpful to consult the *travaux préparatoires* of the NPT to determine whether they may aid in a proper interpretation.

Considering the above analysis, U.S. officials’ instinctive reactions would likely be to advocate that, because the majority of states that possess depleted uranium¹¹⁴ and naval reactor fuel¹¹⁵ are NWS, the use of those materials should be permitted only by NWS. A primary justification would be the near-impossibility of proving the element of intent inherent in “purpose”: if NWS were to *trust* NNWS to use depleted uranium and naval reactor fuel only for non-aggressive and non-violent military purposes, there would be no substantive

¹¹⁴ Doug Weir, *Depleted Uranium – The Facts*, NEW INTERNATIONALIST MAG. (Nov. 1, 2007), <https://newint.org/features/2007/11/01/the-facts/> (portraying a graph that shows that the states with the largest stockpiles of depleted uranium are the United States, Russia, France, Britain, Germany, and Japan—mostly NWS).

¹¹⁵ *Nuclear-Powered Ships*, *supra* note 30 (listing the states that have nuclear naval fleets as Russia, India, the United States, China, and France—all NWS in addition to India which, although a non-signatory to the NPT, has nuclear weapons).

recourse if NNWS were to break the trust and use those materials for aggressive military purposes.

However, this argument will likely raise cries of “nuclear apartheid” from NNWS, which would further inhibit the global nuclear nonproliferation regime. To avoid such a case, the United States should instead advocate for a two-part solution: (1) the states that already possess depleted uranium and naval reactor fuel may continue using them, considering most of these states are NWS; and (2) the NSG should undertake a case-by-case assessment for any other state that wishes to utilize depleted uranium or naval reactor fuel. It is important to acknowledge that increased assessments will cause the NSG to incur increased costs, but in light of the greater nonproliferation goal, these costs should not be a deterrent. This solution will more easily advance the global nuclear nonproliferation agenda and combat allegations of discrimination that would surely surface if the United States advocated that only NWS should be able to use depleted uranium and naval reactor fuel without giving other states the opportunity to be considered, particularly because the majority of the NSG’s members are NNWS.

This proposed policy is related to and substantiated by existing U.S. policies. For example, Section 123 of the Atomic Energy Act directs that any state potentially entering into an agreement for civil nuclear cooperation with the United States (a “123 Agreement”) must guarantee that no materials or technology it receives “will be used for any nuclear explosive device, or for research on or development of any nuclear explosive device, *or for any other military purpose.*”¹¹⁶ Likewise, the United States has interpreted activities “inimical to the interest of the United States” found in Section 57(b)(2) of the Atomic Energy Act¹¹⁷ to include nuclear activities for military purposes.¹¹⁸ More explicitly, in its 123 Agreements, the United States includes a section that delineates exactly what constitutes the use of energy for peaceful purposes; noticeably prohibited are any applications of nuclear energy or technology for military purposes, which likely include depleted uranium and naval reactor fuel.¹¹⁹

¹¹⁶ 42 U.S.C. § 2153(a)(3) (1954) (emphasis added).

¹¹⁷ *Id.* § 2077(b)(2) (“It shall be unlawful for any person to directly or indirectly engage or participate in the development or production of any special nuclear material outside of the United States except . . . (2) upon authorization by the Secretary of Energy after a determination that such activity will not be *inimical to the interest of the United States . . .*”) (emphasis added).

¹¹⁸ *See generally* Assistance to Foreign Atomic Energy Activities, 10 C.F.R. § 810 (2017).

¹¹⁹ *See, e.g.*, Agreement for Cooperation Between the Government of the United States of America and the Government of the People’s Republic of China Concerning Peaceful Uses of Nuclear Energy, China-U.S., art. 1(23), Apr. 13, 2015, T.I.A.S. No. 15-1029 (“‘Peaceful purposes’ include the use of information, technology,

Therefore, based both on the above analysis and related policies, the United States should not interpret uses of nuclear materials and technologies not explicitly prohibited by the NPT but which also may be used for military purposes, such as depleted uranium and naval reactor fuel, to be included under the NPT’s “peaceful purpose” category. Rather, the most prudent solution would be for the United States to advocate that the states already using depleted uranium and naval reactor fuel may continue to do so, but that the use of those materials by any other state must be conditioned on a positive assessment by the NSG.

material, equipment, and components, in such fields as research, power generation, medicine, agriculture, and industry, but do not include use in, research on, or development of any nuclear explosive device, or any military purpose.”); Agreement for Cooperation Between the Government of the United States of America and the Government of the Socialist Republic of Vietnam Concerning Peaceful Uses of Nuclear Energy, U.S.-Viet., art. 1(O), May 6, 2014, T.I.A.S. No. 14-1003 (utilizing similar language); Agreement for Cooperation Between the Government of the United States of America and the Government of Australia Concerning Peaceful Uses of Nuclear Energy, Austl.-U.S., art. 2(k), May 4, 2010, T.I.A.S. No. 10-1222 (utilizing similar language).