

# INTERNATIONAL LAW

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Cessation of the nuclear arms race at an early date is one of the principal if often forgotten objectives of the 1968 nuclear Non-Proliferation Treaty (NPT). Decades later, NPT states parties made commitments to a diminishing role for nuclear weapons in security policies and to the principle of irreversible disarmament. Those and other obligations and commitments and related doctrines create a rich set of standards for assessment of modernization of nuclear forces and infrastructure. Below, the relevant obligations and commitments are set out first. Then they are analyzed and the question of their application to non-NPT states is addressed. An assessment follows of quantitative modernization, qualitative modernization, and modernization enabling long-term maintenance of nuclear forces. A central theme is that modernization erodes the trust and cooperation required for fulfillment of the fundamental nuclear disarmament obligation. The conclusion examines challenges posed by the current state of international law and institutions in the nuclear weapons sphere, and urges development of an institutional capability adequate to the task of monitoring cessation of the nuclear arms race and achievement of the global elimination of nuclear weapons.

## OBLIGATIONS AND COMMITMENTS DIRECTLY RELATING TO MODERNIZATION

### *Nuclear Non-Proliferation Treaty (NPT), article VI*

Each of the Parties to the Treaty undertakes to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date.

### *1995 NPT Review and Extension Conference, Principles and Objectives for Nuclear Non-Proliferation and Disarmament*

4. The achievement of the following measures is important in the full realization and effective implementation of article VI, including the program of action as reflected below: (a) The completion by the Conference on Disarmament of the negotiations on a universal and internationally and effectively verifiable Comprehensive Nuclear-Test Ban Treaty no later than 1996. Pending the entry into force of a Comprehensive Test-Ban

Treaty, the nuclear weapon States should exercise utmost restraint; (b) The immediate commencement and early conclusion of negotiations on a non-discriminatory and universally applicable convention banning the production of fissile material for nuclear weapons or other nuclear explosive devices, in accordance with the statement of the Special Coordinator of the Conference on Disarmament and the mandate contained therein.

### *Comprehensive Nuclear-Test-Ban Treaty, preambular paragraphs 5 and 6*

Recognizing that the cessation of all nuclear weapon test explosions and all other nuclear explosions, by constraining the development and qualitative improvement of nuclear weapons and ending the development of advanced new types of nuclear weapons, constitutes an effective measure of nuclear disarmament and non-proliferation in all its aspects,

Further recognizing that an end to all such nuclear explosions will thus constitute a meaningful step in the realization of a systematic process to achieve nuclear disarmament.

### *2000 NPT Review Conference Final Document, Practical Step 9(d) and (e)*

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

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

### *2010 NPT Review Conference Final Document, Action Plan on nuclear disarmament*

I(b)(4): The Conference recognizes the legitimate interests of non-nuclear-weapon States in the constraining by the nuclear-weapon States of the development and qualitative improvement of nuclear weapons and ending the development of advanced new types of nuclear weapons.

Action 1: All States parties commit to pursue policies that are fully compatible with the Treaty and the objective of achieving a world without nuclear weapons.

Action 11: Pending the entry into force of the Comprehensive Nuclear-Test-Ban Treaty, all States commit to refrain from nuclear-weapon test explosions or any other nuclear explosions, the use of new nuclear

weapons technologies and from any action that would defeat the object and purpose of that Treaty, and all existing moratoriums on nuclear-weapon test explosions should be maintained.

## OBLIGATIONS AND COMMITMENTS RELATING TO NUCLEAR DISARMAMENT

### *Nuclear Non-Proliferation Treaty (NPT), article VI*

Each of the Parties to the Treaty undertakes to pursue negotiations in good faith on effective measures relating to ... nuclear disarmament, and on a treaty on general and complete disarmament under strict and effective international control.

### *Advisory Opinion, International Court of Justice, para. 105(2)F*

There exists an obligation to pursue in good faith and bring to a conclusion negotiations leading to nuclear disarmament in all its aspects under strict and effective international control.

### *2000 NPT Review Conference Final Document, Practical Step 6*

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

### *2000 NPT Review Conference Final Document, Practical Step 5*

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

### *2010 NPT Review Conference Final Document, Action Plan on Nuclear Disarmament*

Action 1: All States parties commit to pursue policies that are fully compatible with the Treaty and the objective of achieving a world without nuclear weapons.

## ANALYSIS OF OBLIGATIONS AND COMMITMENTS DIRECTLY RELATING TO MODERNIZATION

### *Cessation of the nuclear arms race*

It is too little noticed that the NPT envisages that the “cessation of the nuclear arms race” is to be achieved at an “early date” through good-faith negotiations. As Mohamed I. Shaker conveys in his three-volume study of the origin and early implementation of the NPT, this means that the quantitative build-up, and qualitative improvement, of nuclear arsenals is to be ended prior to negotiations on their elimination.<sup>1</sup>

The principal means of cessation of the nuclear arms race were universally understood at the time as a ban on nuclear testing, a ban on production of fissile materials for nuclear weapons, and strategic nuclear arms limitations negotiations, capping build-ups, between the United States and the Soviet Union. At least from the standpoint of many non-nuclear weapon states, a further element was cessation of manufacture of nuclear weapons.<sup>2</sup> Additionally, many non-nuclear weapon states specifically referred to ending the qualitative improvement of nuclear warheads and their delivery systems.

The NPT preamble recalls the determination to negotiate a ban on all nuclear test explosions expressed in the 1963 Limited Test Ban Treaty. And, at its first session after the NPT was opened for signature on 1 July 1968, the Eighteen Nation Disarmament Committee (ENDC), the predecessor to today’s Conference on Disarmament, the United States and the Soviet Union, as co-chairs, proposed an agenda under a heading taken from article VI:

1. Further effective measures relating to the cessation of nuclear arms race at an early date and to nuclear disarmament. Under this heading members may wish to discuss measures dealing with the *cessation of testing*, the *non-use of nuclear weapons*, the *cessation of production of fissionable materials for weapons use*, the *cessation of manufacture of weapons* and reduction and subsequent elimination of nuclear stockpiles, nuclear-free zones, etc.<sup>3</sup>

An agenda proposed later that year by non-nuclear weapon states also featured elements relating to cessation of the nuclear arms race, with the addition of prevention of further development and improvement of nuclear arms, listed as the first item:

- (a) *the prevention of the further development and improvement of nuclear weapons and their delivery vehicles;*
- (b) *the conclusion of a comprehensive test ban treaty, as an important step in the field of nuclear disarmament, and as a matter of high priority;*
- (c) *reaching agreement on the immediate cessation of the production of fissile materials for weapons purposes and the stoppage of the manufacture of nuclear weapons;*
- (d) *the reduction and subsequent elimination of all stockpiles of nuclear weapons and their delivery systems.*<sup>4</sup>

If bans on testing and production of fissile materials for weapons had been adopted soon after the NPT was signed, they would have helped to prevent the development, build-up, and spread of nuclear forces to the incredible level and extent the world is now working to unwind. The Comprehensive Nuclear-Test-Ban Treaty (CTBT) has long been understood to prevent, or at least to constrain, qualitative arms racing. A fissile materials cut-off treaty (FMCT) would prevent quantitative arms

acing based on production of new materials. However, unless widened in scope, it would not prevent acquisition of additional weapons based on use of stockpiled existing materials, as is unfortunately possible now on a large scale for the older nuclear powers. Cessation of manufacture of nuclear weapons as such so far has not been pursued through proposed agreements. Nor have limitations on qualitative development and improvement of nuclear arsenals. Verification of measures prohibiting development and manufacture would be highly intrusive, comparable to that required for reduction and elimination of nuclear arsenals.

NPT member states have an obligation to pursue negotiations on cessation of the nuclear arms race at an early date, and that obligation must be fulfilled in good faith. As further discussed below, pending achievement of cessation of the nuclear arms race, to show good faith they must not take actions undermining that objective. This prong of article VI therefore generally enjoins states to refrain from both quantitative build-up and qualitative improvement of their nuclear arsenals.

That conclusion is reinforced by the unanimously adopted Final Document of the General Assembly's first special session on disarmament, held in 1978, whose provisions apply to all UN member states including those not party to the NPT. It provides, *inter alia*:

39. *Qualitative and quantitative disarmament measures are both important for halting the arms race. Efforts to that end must include negotiations on the limitation and cessation of the qualitative improvement of armaments, especially weapons of mass destruction and the development of new means of warfare ....*

47. Nuclear weapons pose the greatest danger to mankind and to the survival of civilization. *It is essential to halt and reverse the nuclear arms race in all its aspects* in order to avert the danger of war involving nuclear weapons. ...

50. The achievement of nuclear disarmament will require urgent negotiation of agreements at appropriate stages and with adequate measures of verification satisfactory to the States concerned for:

- (a) *Cessation of the qualitative improvement and development of nuclear-weapon systems;*
- (b) *Cessation of the production of all types of nuclear weapons and their means of delivery, and of the production of fissionable material for weapons purposes.*<sup>5</sup>

### Test ban treaty

Under Article 18 of the Vienna Convention on the Law of Treaties, signatories to the CTBT are required to refrain from actions contrary to its object and purpose. Signatory states possessing nuclear weapons are the United States, United Kingdom, France, Russia, China, and Israel. In addition, NPT member states have com-

mitted under action 11 of the 2010 NPT Final Document to refrain from any action that would defeat the object and purpose of the CTBT. It can be argued, moreover, that in light of its wide ratification, the general practice of non-testing since the CTBT was signed in 1996, General Assembly and Security Council resolutions, and other international statements, at least a "political norm" of no testing has emerged applicable to non-signatory states outside the NPT, India and Pakistan.<sup>6</sup>

Do some modernization activities contravene the object and purpose of the CTBT because they contribute to the development and qualitative improvement of nuclear weapons? The "object" of the Treaty would seem to be the end of nuclear testing. As for the purpose, the broader aim of the Treaty, the last preambular paragraph indicates there are several. It reads: "*Affirming* the purpose of attracting the adherence of all States to this Treaty and its objective to *contribute effectively* to the prevention of the proliferation of nuclear weapons in all its aspects, to the process of nuclear disarmament and therefore to the enhancement of international peace and security."<sup>7</sup> Among the purposes therefore is to contribute to "the process of nuclear disarmament". Earlier preambular paragraphs "recognize" that an end to nuclear explosions is a "meaningful step" in the process of nuclear disarmament because it will "constrain the development and qualitative improvement of nuclear weapons."<sup>8</sup>

The language, however, is quite qualified. The word "recognize" indicates a statement of fact rather than an aim, the word "constrains" is well short of expressing an expectation of termination, and "to contribute effectively" is a limited aim. It accordingly would seem a bridge too far to argue that, in general, modernization activities that develop and improve nuclear weapons are contrary to the CTBT's object and purpose. Finally, especially regarding security matters, states typically argue that they are restricted by what they have specifically agreed to, and no more. Even in this light, at least planned laser fusion experiments involving miniature nuclear explosions are vulnerable to the criticism that they contravene the CTBT's prohibition of nuclear explosive testing and its object and purpose.<sup>9</sup>

If on its own the CTBT does not give rise to a general commitment or obligation to refrain from qualitative modernization of nuclear weapons, nonetheless its preambular language does complement and reinforce other obligations and commitments, notably the NPT obligation regarding cessation of the nuclear arms race at an early date.

A new element in the 2010 NPT commitment regarding the CTBT is refraining from "the use of new nuclear weapons technologies". Its meaning is unclear. It may be a general declaration referring to new nuclear warheads. In context, though, it would appear to refer to technologies that would circumvent the ban on nuclear explosive testing or otherwise defeat the object and

purpose of the treaty. It would seem to apply, for example, to laser fusion facilities as well as to various means of simulating and analyzing nuclear explosions. However, given that such technologies have been employed or have been in development in nuclear weapons states for many years, whether they would come under the commitment is questionable given the qualifier “new,” unless their development post-dates the 2010 conference. There does not seem to have been any in-depth consideration of this element; rather, it was simply inserted at the request of a non-nuclear weapon state.

### *NPT conference commitments*

The 1995 NPT Review and Extension Conference made strong commitments to negotiation of a CTBT and an FMCT, and those commitments were subsequently reaffirmed and developed by the 2000 and 2010 NPT Review Conferences.<sup>10</sup> Both measures are understood to be key elements of cessation of the nuclear arms race under Article VI. All three conferences also made commitments to the reduction and elimination of nuclear arsenals. As quantitative build-up of arsenals by NPT nuclear weapon states had ended, that aspect of cessation of the nuclear arms race no longer received attention and the nuclear disarmament prong of article VI came to the fore.<sup>11</sup>

Regarding qualitative modernization, the Practical Steps adopted by the 2000 NPT Review Conference, reaffirmed by the 2010 Review Conference, contain commitments to reduce the role of nuclear weapons in security postures on both policy and operational levels. Those commitments have been incorporated in a long string of General Assembly resolutions adopted by overwhelming majorities.<sup>12</sup> A natural corollary is that nuclear weapons will not be improved to give them additional military capabilities and make them more suitable for new missions. The 2010 NPT Final Document also “recognizes” the “legitimate interest” of non-nuclear weapon states in “constraining” the development of nuclear weapons. While not definitive due to the unwillingness of NPT nuclear weapon states to go further, these provisions support the contention that qualitative modernization adding to military capabilities undermines good-faith achievement of the article VI objective of cessation of the nuclear arms race.

In 2005, the US State Department argued that given the fact that all of the NPT nuclear weapon states “have continued to modernize their nuclear weapons stockpiles during the period in which the NPT has been in effect ... it would be a novel and unfounded interpretation of the NPT to argue that such modernization is problematic under the NPT.”<sup>13</sup> In general, a practice of non-compliance, however long-lasting, does not demonstrate compliance. Moreover, from the beginning non-nuclear weapon states have insisted that the NPT bargain requires the achievement of a CTBT, which was long, if over-optimistically, regarded as tantamount

to ending qualitative nuclear arms racing. The Final Document of the 1975 NPT Review Conference reflects this view, stating that the “Conference expresses the view that the conclusion of a treaty banning all nuclear weapons tests is one of the most important measures to halt the nuclear arms race.”<sup>14</sup> And as noted earlier, after the NPT was signed non-nuclear weapon states placed prevention of development and improvement of nuclear arms at the top of their proposed agenda for negotiations in the ENDC.

Perhaps most significantly, in the aftermath of the disintegration of the Soviet Union, the NPT conferences of 1995, 2000, and 2010 have established more symmetry, in principle at least, between the obligation of non-nuclear weapon states not to acquire nuclear weapons and the obligation of NPT nuclear weapon states to enter into a process of eliminating their arsenals including through the reduction of the role of nuclear weapons.<sup>15</sup> Modernization improving military capabilities and projecting retention of nuclear forces for many decades into the future is inherently incompatible with such a process, as is shown more fully by consideration of the nuclear disarmament prong of article VI.

## ANALYSIS OF OBLIGATIONS AND COMMITMENTS RELATING TO NUCLEAR DISARMAMENT

### *NPT article VI, the ICJ statement of the disarmament obligation, and the unequivocal undertaking*

The two principal aims of article VI are cessation of the nuclear arms and the elimination of nuclear weapons. The latter aim is made crystal clear in the preamble to the NPT, which refers to “the liquidation of all [States’] existing stockpiles, and the elimination from national arsenals of nuclear weapons and the means of their delivery pursuant to a Treaty on general and complete disarmament under strict and effective international control.”

In the 1950s and 1960s, a treaty on general and complete disarmament had been envisioned as a) the limitation and reduction of armed forces and conventional armaments; b) prohibition of nuclear weapons and weapons of mass destruction of every type; and c) establishment of effective international control through a control organ.<sup>16</sup> Subsequent to the negotiation of the NPT, the practice of states was to negotiate separate conventions on prohibition and elimination of distinct types of weapons, notably on biological weapons, chemical weapons, antipersonnel landmines, and cluster munitions, with an implementing agency in the case of chemical weapons. Such matters are considered by the UN General Assembly under the rubric of “general and complete disarmament”.

In light of this practice, article VI should now be understood as requiring, not negotiation of a treaty on

elimination of WMD and limitation of conventional arms, but rather negotiation of a treaty on the prohibition and elimination of nuclear weapons—a Nuclear Weapons Convention—comparable to the Chemical Weapons Convention and Biological and Toxin Weapons Convention.<sup>17</sup> Such a reading of article VI is supported by article 31 of the Vienna Convention on the Law of Treaties, which provides for application and interpretation of treaties in light of practice and agreement subsequent to their adoption.

The 1996 International Court of Justice advisory opinion on nuclear weapons also supports this reading of article VI. With all justices concurring, the Court concluded that article VI and other international law requires that states “pursue in good faith and bring to a conclusion negotiations leading to nuclear disarmament in all its aspects under strict and effective international control.”<sup>18</sup> Thus the Court did not make the obligation of complete nuclear disarmament dependent upon achievement of general and complete disarmament, which in any case is being pursued, notably through the treaties on biological and chemical weapons. Relying on an international law distinction between obligations of conduct and result, the Court held that with respect to nuclear weapons, both conduct (negotiation) and result (“nuclear disarmament in all its aspects”) are required. The result element arises from article VI itself, the NPT preamble, which clearly identifies the sought after result, as well as the long history of UN efforts related to nuclear disarmament, starting with the first resolution adopted by the General Assembly.<sup>19</sup>

In the 2000 Final Document, NPT state parties effectively endorsed the understanding of article VI as requiring the achievement of complete nuclear disarmament, adopting the “unequivocal undertaking by the nuclear-weapon States to *accomplish* the total elimination of their nuclear arsenals leading to nuclear disarmament to which all States parties are committed under Article VI.”<sup>20</sup> This provision has considerable legal weight; it represents the practice and agreement of states bearing directly and specifically upon the interpretation of article VI.<sup>21</sup>

The implication for modernization of nuclear arsenals is straightforward. If implemented at all, it must not be done in a way which interferes with accomplishing the result of elimination of nuclear weapons required by the nuclear disarmament obligation. This implication is generally recognized in the commitment set forth in the 2010 NPT Final Document: “All States parties commit to pursue policies that are *fully compatible* with the Treaty and *the objective of achieving a world without nuclear weapons.*”<sup>22</sup>

The implication also follows from the fundamental principle of good faith governing compliance with treaty obligations set forth in article 26 of the Vienna Convention on the Law of Treaties. Good faith requires abiding by agreements in a manner true to their pur-

poses and working sincerely and cooperatively to attain agreed objectives.<sup>23</sup> Acts at cross-purposes with the achievement of agreed objectives are incompatible with good faith.<sup>24</sup> While such acts may in theory be reversible, they undermine the development of the trust necessary to achievement of objectives. As the ICJ stated: “One of the basic principles governing the creation and performance of legal obligations, whatever their source, is the principle of good faith. Trust and confidence are inherent in international co-operation, in particular in an age when this co-operation in many fields is becoming increasingly essential.”<sup>25</sup> The need for trust is especially pronounced when it comes to security matters and even more so with respect to a process of global nuclear disarmament.<sup>26</sup>

Thus in the NPT context, states Judge Mohammed Bedjaoui, former President of the International Court of Justice, good faith proscribes “every initiative the effect of which would be to render impossible the conclusion of the contemplated disarmament treaty” eliminating nuclear weapons globally pursuant to article VI.<sup>27</sup> In Australia’s argument to the ICJ in 1995, then Foreign Minister Gareth Evans put the matter more specifically. He said that to implement the nuclear disarmament obligation, states possessing nuclear weapons “cannot add to, improve or test them.”<sup>28</sup>

#### *The NPT principle of irreversibility*

The principle of irreversibility has its origins in the formation of policy concerning disposal of fissile materials from dismantled warheads. The policy adopted between the United States and Russia is that such materials should be processed to render them effectively unusable again in warheads, for example by “down-blending” highly enriched uranium and using it as nuclear reactor fuel, or mixing plutonium with highly radioactive nuclear waste and burying it underground. The principle was similarly applied to delivery systems: missiles and bombers removed from deployment were verifiably destroyed under the Intermediate-Range Nuclear Forces and START agreements. As is readily understood, the aim is to make arms control measures, and the elimination of nuclear weapons, not sham but effective, so that items subject to arms control and disarmament cannot be employed for rearmament.

The principle of irreversibility connects tightly to good faith implementation of the nuclear disarmament obligation. Its adoption by the 2000 and 2010 Review Conferences represents an interpretation and application of article VI identifying a key legal criterion for assessment of compliance.<sup>29</sup> The principle has also been repeatedly affirmed by General Assembly resolutions adopted by overwhelming majorities.<sup>30</sup> Modernization of nuclear weapons infrastructures for the purpose, declared or unspoken, of making a build-up of nuclear forces possible, circumvents the principle of irreversibility,<sup>31</sup> and undermines the achievement of the

objective of disarmament in violation of the principle of good faith.

## STATES NOT PARTY TO THE NPT

It is often assumed that because India, Israel, and Pakistan never joined the NPT, they are not subject to any international law disarmament obligation.<sup>32</sup> As previously noted, in matters of security, states are especially insistent that they are not bound by any obligation to which they have not expressly agreed. Moreover, because they are subject to constitutional processes of approval, treaties typically have the advantage of greater buy-in from entire political systems. Nonetheless, there are multiple reasons to believe that in principle all states are bound by a customary international law nuclear disarmament obligation. At an absolute minimum, they are subject to a “political norm” enjoining nuclear disarmament.<sup>33</sup>

To begin with, the NPT has nearly universal adherence, and article VI applies to all parties to that Treaty, not only the nuclear weapon states acknowledged by the Treaty. Extensive adherence to treaty obligations is a strong indicator of the existence of a customary international law obligation.

Second, disarmament, and nuclear disarmament in particular, has been an aim of the United Nations since its beginning. Articles 11 and 26 of the UN Charter contemplate work on disarmament by the General Assembly and the Security Council. The first General Assembly resolution sought to set in motion the elimination of nuclear and other weapons of mass destruction.<sup>34</sup> Then resolutions of the General Assembly called for the elimination of nuclear weapons and other WMD through general and complete disarmament. In 1978, the Final Document of the General Assembly special session made nuclear weapons the top priority for disarmament negotiations.<sup>35</sup>

Third, the obligation of elimination of nuclear weapons and other WMD is rooted—as the term ‘weapons of mass destruction’ itself conveys—in their incompatibility with international humanitarian law forbidding indiscriminate attacks, the prohibitions of crimes against humanity and genocide, and what the ICJ called “elementary considerations of humanity.”<sup>36</sup> Law based in such elementary considerations applies universally, regardless of particularities of treaty adherence. No one would argue that a state is not subject to the prohibition of genocide because it is not a party to the Genocide Convention. Nor does the persistent objector doctrine, permitting states to avoid the application of rules of customary international law to which they consistently declare their non-consent, apply to such fundamental rules. If law forbidding employment of nuclear weapons applies universally, and it does, that is a powerful reason for the nuclear disarmament obligation to apply universally.<sup>37</sup>

The International Court of Justice stated the disarmament obligation in a way open to its universal application: “There exists an obligation ....”<sup>38</sup> That this was deliberate was confirmed by Judge Bedjaoui, then President of the Court, in his separate declaration: “[I]t is not unreasonable to think that, considering the at least formal unanimity in this field, this twofold obligation to negotiate in good faith and achieve the desired result has now, 50 years on, acquired a *customary character*.”<sup>39</sup> The first two factors referred to above clearly shaped the Court’s approach. Regarding the widespread adherence to the NPT and the participation of all member states of the United Nations in disarmament deliberations, the Court stated:

100. This twofold obligation to pursue and to conclude negotiations formally concerns the 182 States parties to the Treaty on the Non-Proliferation of Nuclear Weapons, or, in other words, the *vast majority of the international community*.

*Virtually the whole of this community appears moreover to have been involved when resolutions of the United Nations General Assembly concerning nuclear disarmament have repeatedly been unanimously adopted. Indeed, any realistic search for general and complete disarmament, especially nuclear disarmament, necessitates the co-operation of all States.*

101. Even the very first General Assembly resolution, unanimously adopted on 24 January 1946 at the London session, set up a commission whose terms of reference included making specific proposals for, among other things, “the elimination from national armaments of atomic weapons and of all other major weapons adaptable to mass destruction”. In a large number of subsequent resolutions, the General Assembly has reaffirmed the need for nuclear disarmament. Thus, in resolution 808 A (IX) of 4 November 1954, which was likewise unanimously adopted, it concluded “that a further effort should be made to reach agreement on comprehensive and co-ordinated proposals to be embodied in a draft international disarmament convention providing for: ... (b) The total prohibition of the use and manufacture of nuclear weapons and weapons of mass destruction of every type, together with the conversion of existing stocks of nuclear weapons for peaceful purposes.”

The same conviction has been expressed outside the United Nations context in various instruments.<sup>40</sup>

India and Pakistan each vote for the annual General Assembly resolution on follow-up to the ICJ opinion.<sup>41</sup> Its first operative paragraph welcomes the ICJ statement of the disarmament obligation, and the second calls for early commencement of multilateral negotiations leading to a convention prohibiting and eliminating nuclear weapons. The votes provide some evidence that the two countries accept that the nuclear disarmament obligation applies to them, and they have not stated otherwise.

Finally, Security Council resolution 1887, issued in 2009 by the first ever head of state-attended session exclusively addressing nuclear non-proliferation and disarmament, contains a call on non-NPT states to join in the article VI nuclear disarmament “endeavor”. While falling short of a legally-binding directive, a “call” from the Council is more than a suggestion. The resolution also calls on states outside the NPT to join it as non-nuclear weapon states, a standard provision in UN and NPT documents, and a preambular paragraph reaffirms “that proliferation of weapons of mass destruction, and their means of delivery, constitutes a threat to international peace and security.”

At least with respect to India and Pakistan, the call to join in nuclear disarmament, new for the Security Council, is probably the more operationally pertinent paragraph. But both provisions of the resolution, as well as calls in NPT Review Conference outcome documents for states outside the NPT to join as non-nuclear weapon states, at a minimum support an international expectation that non-NPT states not engage in

## MODERNIZATION OF NUCLEAR WEAPONS INFRASTRUCTURE IN ORDER TO ENABLE POSSIBLE FUTURE BUILD-UP OF ARSENALS IS CONTRARY TO THE PRINCIPLE OF IRREVERSIBLE DISARMAMENT.

arms racing. That expectation was directly stated by the Security Council shortly after India and Pakistan conducted nuclear tests in 1998. In resolution 1172 the Council called upon them “to stop their nuclear weapon development programmes, to refrain from weaponization or from the deployment of nuclear weapons, to cease development of ballistic missiles capable of delivering nuclear weapons and any further production of fissile material for nuclear weapons.”

In summary, while it may not readily be accepted by non-NPT states, there is a strong case that they are subject to a universal nuclear disarmament obligation and the subsidiary obligation of cessation of the nuclear arms race. Their conduct should certainly be assessed under at least the same standards applicable to NPT nuclear weapon states—if not more restrictive ones, given the persistent calls for them to join the NPT as non-nuclear weapon states—whether the standards are considered legal or political in nature.

## ASSESSMENT OF MODERNIZATION UNDER INTERNATIONAL LAW STANDARDS

Other contributions in this collection provide detailed information and analysis on particular states’ modernization programmes. It is not possible here to apply the above discussed international law standards to each country. However, relevant issues are summarized below with respect to quantitative moderniza-

tion, qualitative modernization improving military capabilities, and modernization to enable long-term maintenance of existing capabilities. The central contention is that modernization depletes the fund of trust needed for cooperation in disarmament.<sup>42</sup> The converse is also true; a failure to forge ahead with arms control and disarmament measures, modest or far-reaching, encourages modernization as a hedge against feared actions of other states.<sup>43</sup>

### *Quantitative modernization*

Increases in the size of nuclear arsenals and the amount of fissile material dedicated to weapons purposes is not currently a concern with respect to the United States, United Kingdom, France, and Russia. But they are a critical concern with respect to India and Pakistan, as well as to China at least with respect to its arsenal. The refusal on the part of Pakistan to enter into negotiations on an FMCT (with China and India perhaps taking advantage of Pakistan’s overt position) is contrary to the universal obligation of good-faith pursuit of negotiations leading to nuclear disarmament and the subsidiary obligation of good-faith negotiation of cessation of the nuclear arms race. More generally, increases in arsenal size and in fissile materials stocks are actions contrary to good faith because they undermine achievement of cessation of the nuclear arms race and disarmament.<sup>44</sup>

Modernization of nuclear weapons infrastructure in order to enable possible future build-up of arsenals is contrary to the principle of irreversible disarmament. In the United States, the building of new facilities has been expressly justified as providing a surge capability. This not only violates the irreversibility principle, it is contrary to the principle of good faith; it erodes the trust needed for the enterprise of global nuclear disarmament.

### *Qualitative modernization improving military capabilities*

An end to such qualitative modernization was envisaged in the article VI prong of cessation of the nuclear race at an early date, and the CTBT was understood as a principal means for achieving this objective. More than four decades after the NPT was signed, the failure to date of NPT nuclear weapon states United States and China to ratify the CTBT demonstrates a lack of good faith with respect to achieving the objective of cessation of the nuclear arms race. The failure of India, Pakistan, and Israel so far to sign and/or ratify the treaty is subject to similar criticism.

Upgrades and replacements of nuclear warheads and delivery systems that improve military capabilities are counter to the NPT commitment to diminishing the role of nuclear weapons, demonstrate a lack of

good faith with respect to achievement of cessation of the nuclear arms race, and are incompatible with good-faith achievement of the objective of disarmament through a cooperative global enterprise. In the United States, the projected development of the B61-12 bomb with enhanced targeting capabilities, to be carried by a new aircraft, the F-35, with stealth capabilities, illustrates qualitative modernization arising from replacement of existing delivery systems and bombs/warheads.<sup>45</sup> Another example is the French deployment in 2010 of the submarine-launched M51 missile with increased range, accuracy, and payload capacity compared to the M45 missile it replaced.<sup>46</sup>

A very troubling dynamic arises from the relationship of nuclear forces, maintained through ongoing modernization, to other military capabilities. In the context of missile defence deployments, cyberware capabilities, development of non-nuclear long-range strike capabilities, possible space-based systems, and the like, existing nuclear weapons may become objectively more threatening because at least in theory they have more potential for effective use in preemptive strikes. The 2000 NPT Final Document recognized the connection between missile defences and disarmament, calling in the Practical Steps for “preserving and strengthening the [Anti-Ballistic Missile] Treaty as a cornerstone of strategic stability and as a basis for further reductions of strategic offensive weapons.” While the ABM Treaty is now history due to US withdrawal from the Treaty under the Bush administration, the principle remains valid. Assessment of modernization of nuclear forces must thus consider those forces within a state’s overall military posture. And, as the United Nations and NPT negotiators recognized in placing nuclear disarmament in the context of general and complete disarmament, the good-faith pursuit of nuclear disarmament must also encompass as necessary related strategic systems.

#### *Modernization enabling long-term maintenance of nuclear forces*

States with nuclear weapons have plans and budgets for replacement of delivery systems and warheads stretching several decades into the future. This tends to be portrayed not as adding to military capabilities, but simply as maintaining an existing and benign ‘nuclear deterrent’. In practice, whether currently intended or not by governments, military capabilities will be enhanced, directly and also indirectly due to the combination of nuclear forces with other strategic systems.

Assume for purposes of discussion, however, modernization programmes that serve only to perpetuate existing capabilities for the indefinite future. One can imagine that they would simply be terminated when a collective decision to eliminate nuclear forces is made. Such a view ignores the practical reality of the programmes’ reinforcement of anti-disarmament el-

ements within each country. It also ignores the likely prospect of arms racing centered on infrastructures if not the forces themselves, which in turn undermines prospects for cooperation in disarmament. Generally, whether or not competition ensues, the intent of the modernizing states to comply with the disarmament obligation is thrown into doubt, with adverse effects on the non-proliferation regime, and erosion of the trust needed for the nuclear disarmament enterprise.

## CONCLUSION

The application of international law to modernization, especially qualitative modernization, faces multiple challenges. To begin with, while in the NPT context nuclear weapon states have endorsed in principle the CTBT, FMCT, and capping and reducing nuclear arsenals, they have resisted specific commitments with respect to qualitative modernization. Thus the 2010 NPT Review Conference could only record the “legitimate interest” of non-nuclear weapon states in “constraining” development and improvement of nuclear arsenals.

Second, absent an overall, verified, program of elimination of nuclear forces, it is difficult to envisage how verification of a complete halt to both qualitative and quantitative modernization would be accomplished. Nonetheless, compliance with existing standards should be assessed to the extent possible, and those standards should be made more precise.

Most importantly, there is no international institutional mechanism for assessment of nuclear weapons programmes and the state of their compliance with international law with respect to cessation of the nuclear arms race and nuclear disarmament. Nor is there any international mechanism for enforcement of compliance. In the NPT review process and in the General Assembly First Committee, a few states devote at most several sentences to general statements on the subject of modernization. No ad hoc official international expert groups have examined the subject. NPT states parties not only do not have any institutional capability for assessment and enforcement of compliance with article VI, they have not developed such a capability with respect to non-proliferation. That is handled by the International Atomic Energy Agency, a wholly distinct body whose Board of Governors has a restricted membership, and the Security Council.

The establishment of adequate institutional capability to monitor nuclear weapons matters would help develop reliable information and a shared understanding of applicable standards, and thus the trust needed for a workable process of global disarmament.<sup>47</sup> It would counteract the tendency of states, especially powerful ones, to treat international law and institutions as manipulable for their own ends, rather than as global public goods whose integrity should be preserved.



Notwithstanding those challenges, international law bearing on modernization is reasonably well developed. It is a normative code that the ‘invisible college’ of non-governmental analysts exemplified by the authors in this collection,<sup>48</sup> as well as disarmament experts and advocates within and without governments around the world, can and should draw upon in working for an end to modernization and a beginning of global disarmament.

## NOTES

1. Mohamed I. Shaker, *The Nuclear Non-Proliferation Treaty: Origin and Implementation, 1959–1979* (London: Oceana Publications, 1980) (hereafter, “Shaker”), vol. 2, pp. 572–580, 583–585.
2. In the NPT preamble, cessation of the manufacture of nuclear weapons appears in a paragraph concerning a treaty on general and complete disarmament, which tends to support the view that it is not an element of cessation of the nuclear arms race. However, a fissile materials cut-off treaty was seen at the time as contributing or even equivalent to cessation of the nuclear arms race because it would end production of nuclear warheads. See Shaker, vol. 2, at pp. 584–585. See also *id.* at p. 577 (statement of Cyprus in First Committee of the General Assembly includes cessation of manufacture under halting the nuclear arms race). The history of negotiation of the NPT and statements soon after it was adopted are not conclusive, but indicates that nuclear weapons states viewed cessation of the manufacture of nuclear weapons as an element of a final stage of elimination of nuclear weapons, while many non-nuclear weapon states viewed it as an element of cessation of the nuclear arms race.
3. Conference of the Eighteen-Nation Committee on Disarmament, *Final Record of the Three Hundred and Nineteenth Meeting*, Verbatim Record, ¶ 93, Aug. 15, 1968, ENDC/PV. 390 (emphasis added), cited in Shaker, vol. 2, p. 579.
4. Final Document of the Conference of Non-Nuclear-Weapon States (A/CONF.35/10, 1 Oct. 1968), Resolution C, p. 8 (emphasis added), cited in Shaker, vol. 2, p. 580.
5. Final Document of the Tenth Special Session of the General Assembly, adopted by A/RES/S-10/2, 30 June 1978, adopted without a vote (emphasis added).
6. George Bunn, “The Status of Norms Against Nuclear Testing,” *The Nonproliferation Review* (Winter 1999) (hereafter, “Bunn”), pp. 20–32.
7. Emphasis added.
8. Emphasis added.
9. See Nicole Deller, Arjun Makhijani, John Burroughs, eds., *Rule of Power or Rule of Law? An Assessment of U.S. Policies and Actions Regarding Security-Related Treaties* (New York: The Apex Press, 2003) (hereafter, “*Rule of Power or Rule of Law*”), pp. 54–57.
10. For background on the NPT review process and the NPT itself, see Charles J. Moxley, Jr., John Burroughs, and Jonathan Granoff, “Nuclear Weapons and Compliance with International Humanitarian Law and the Nuclear Non-Proliferation Treaty,” 34 *Fordham International Law Journal*, April 2011, no. 4, www.lcnp.org/wcourt/Fordhamfinaljoint.pdf (hereafter, “Moxley”), pp. 595, 680–683; and Michael Spies and John Burroughs, eds., *Nuclear Disorder or Cooperative Security? U.S. Weapons of Terror, the Global Proliferation Crisis, and Paths to Peace*, Lawyers Committee on Nuclear Policy, Western States Legal Foundation, Reaching Critical Will of the Women’s International League for Peace and Freedom, 2007, wmdreport.org/ndcs/online (hereafter, “*Nuclear Disorder or Cooperative Security*”) pp. 27–34, 57–76.
11. In a declaration dated 6 April 1995, France, Russia, the United Kingdom and the United States among other things welcomed “the fact that the nuclear arms race has ceased.” NPT/Conf.1995/20, 19 April 1995, Annex. Perhaps the declarants had in mind quantitative arms racing; qualitative arms racing demonstrably has not ceased.
12. E.g., A/RES/66/45, “United action towards the total elimination of nuclear weapons,” 2 December 2011, adopted by a vote of 169 to 1 (DPRK), with 11 abstentions, operative paragraphs 10 and 11; A/RES/65/71, “Decreasing the operational readiness of nuclear weapons systems,” 8 December 2010, adopted by a vote of 157 to 3 with 22 abstentions.
13. U.S. Department of State, Bureau of Arms Control, “Article VI of the Non-Proliferation Treaty,” 10 February 2005, cited in *Nuclear Disorder or Cooperative Security*, p. 65.
14. Shaker, vol. 2, p. 631.
15. See *Rule of Power or Rule of Law*, pp. 39–40.
16. See, e.g., General Assembly Resolution 808 (IX) A (1954).
17. Regarding the extensive record of governmental and civil society support in the UN context for a Nuclear Weapons Convention, see *Good Faith Negotiations Leading to the Total Elimination of Nuclear Weapons: Request for an Advisory Opinion from the International Court of Justice*, International Association of Lawyers Against Nuclear Arms and International Human Rights Clinic at Harvard Law School, 2009, www.lcnp.org/disarmament/2009.07.ICJbooklet.pdf, pp. 23–25.
18. *Legality of Threat or Use of Nuclear Weapons*, Advisory Opinion of 8 July 2006, I.C.J. Reports 1996, p. 226 (hereafter, “Nuclear Weapons Advisory Opinion”), at ¶ 105(2)F.
19. A/Res/1(1), 24 January 1946, “Establishment of a Commission to Deal with the Problems Raised by the Discovery of Atomic Energy.”
20. Emphasis added.
21. See Article 31 of the Vienna Convention on the Law of Treaties (VCLT); see also Moxley, p. 686 and note 290 and sources cited therein.
22. Emphasis added.
23. See Moxley at p. 687 and sources cited therein.
24. Cf. *Report of the International Law Commission Covering its 16th Session, 727th Meeting*, 20 May 1964: Pursuant to the VCLT Article 26 obligation that every treaty in force must be performed by the parties in good faith, the duty of the parties is “not only to observe the letter of the law but also to abstain from acts which would inevitably affect their ability to perform...”
25. Nuclear Weapons Advisory Opinion, at ¶ 102.
26. See Judge Mohammed Bedjaoui, “Good Faith, International Law, and Elimination of Nuclear Weapons,” Keynote Address, 1 May 2008, www.lcnp.org/disarmament/2008MayoeventBedjaoui.pdf, pp. 24–29.
27. *Ibid.*, p. 22.
28. Verbatim Record of Proceedings Before the ICJ, 30 October 1995, www.icj-cij.org/docket/files/95/5925.pdf (hereafter, “Evans”), p. 53.
29. Pursuant to VCLT Article 31. See Moxley at p. 686 and note 290 and sources cited therein.
30. E.g., A/RES/66/45, 2 December 2011. Its operative paragraph 5 “[e]mphasizes the importance of applying the principles of irreversibility, verifiability and transparency in relation to the process of nuclear disarmament and non-proliferation.”
31. See Jacqueline Cabasso, “Irreversibility and Verification,” NGO Presentation to the NPT Review Conference Preparatory Committee, April 2002, www.reachingcriticalwill.org/legal/npt/NGOpres02/11.pdf. Cf. Ian Anthony, *Irreversibility in Nuclear Disarmament: Political, Societal, Legal and military-Technical Aspects* (Swiss Confederation and Stockholm International Peace Research Institute, September 2011), p. 9; David Cliff, Hassan Elbahtimy, and Andreas Persbo, *Irreversibility in Nuclear Disarmament: Practical steps against nuclear rearmaments* (Swiss Confederation and Stockholm International Peace Research Institute, September 2011), pp. 11–13.
32. As for the Democratic People’s Republic of Korea (DPRK), if it is considered to have withdrawn from the NPT, the discussion regarding non-NPT states applies all the more powerfully to it. The DPRK also is subject to stringent Security Council resolutions requiring the dismantlement of its nuclear weapons programme.
33. On the concept of political norm, see Bunn.
34. A/Res/1(1), 24 January 1946.
35. Final Document of the Tenth Special Session of the General Assembly, adopted by A/RES/S-10/2, 30 June 1978, ¶ 45.
36. Nuclear Weapons Advisory Opinion, at ¶ 79.
37. While not specifically addressing the question of states outside the NPT, Gareth Evans captured the thrust of this reasoning in Australia’s argument to the ICJ. He stated: “It is therefore illegal, in our submission, to acquire, develop, test, possess, or otherwise use or threaten to use nuclear weapons. § The right of States

- to self-defence cannot be invoked to justify such actions. The right to self-defence is not unlimited. It is subject to fundamental principles of humanity. Self-defence is not a justification for genocide, for ordering that there shall be no enemy survivors in combat or for indiscriminate attacks on the civilian population. Nor is it a justification for the use of nuclear weapons. § This prohibition under customary international law must apply equally to nuclear-weapon States and non-nuclear-weapon States. It is in the nature of rules of customary international law that they apply to all States alike. If humanity and the dictates of conscience demand the prohibition of such weapons for some States, it must demand the same prohibition for all States.” Evans, p. 52.
38. Nuclear Weapons Advisory Opinion, at ¶ 105(2)F: “There exists an obligation to pursue in good faith and bring to a conclusion negotiations leading to nuclear disarmament in all its aspects under strict and effective international control.”
  39. Declaration of President Bedjaoui, *Legality of Threat or Use of Nuclear Weapons*, Advisory Opinion of 8 July 2006, I.C.J. Reports 1996, p. 268, at ¶ 23.
  40. Nuclear Weapons Advisory Opinion, at ¶¶ 100-101 (emphasis supplied).
  41. See, e.g., A/RES/66/46, 2 December 2011.
  42. I am indebted to Robert Zuber, director of Global Action to Prevent War, for his insights regarding the role of trust. For a discussion in another context, see Robert Zuber and Ana Carolina Barry Laso, “Trust but Verify: Building Cultures of Support for the Responsibility to Protect Norm,” *Global Responsibility to Protect 3* (2011), pp. 286–300.
  43. As Robert Socolow, member of the *Bulletin of the Atomic Scientists* Science and Security Board, and professor of Mechanical and Aerospace Engineering, Princeton University, observed: “Obstacles to a world free of nuclear weapons remain. Among these are disagreements between the United States and Russia about the utility and purposes of missile defense, as well as insufficient transparency, planning, and cooperation among the nine nuclear weapons states to support a continuing drawdown. The resulting distrust leads nearly all nuclear weapons states to hedge their bets by modernizing their nuclear arsenals. While governments claim they are only ensuring the safety of their warheads through replacement of bomb components and launch systems, as the deliberate process of arms reduction proceeds, such developments appear to other states to be signs of substantial military build-ups.” *Bulletin of the Atomic Scientists* press release, “Doomsday Clock Moves 1 minute closer to midnight,” 10 January 2012 (emphasis added).
  44. Arguably, a factor to be weighed in the assessment of good faith as to both quantitative and qualitative modernization is the purpose of a state’s actions. If such actions are aimed solely at preserving a second-strike capability in view of enhanced preemptive capabilities of other powers, that is less provocative than efforts aimed at building up “war-fighting” capabilities of various kinds. Cf. the first preambular paragraph of the NPT, which refers to the “need to make every effort to avert the danger of a [nuclear] war”.
  45. Hans Kristensen, “B61 LEP: Increasing NATO Nuclear Capability and Precision Low-Yield Strikes,” *Federation of American Scientists*, 15 June 2011, [www.fas.org/blog/ssp/2011/06/b61-12.php](http://www.fas.org/blog/ssp/2011/06/b61-12.php). Similarly, “life-extension” for the W76 submarine-based warhead added to the capability to hit hard targets. See Greg Mello, “That Old Designing Fever,” *Bulletin of the Atomic Scientists*, January/February 2000, Vol. 56, No. 1, pp. 51–57.
  46. See Hans M. Kristensen’s contribution to this collection.
  47. A first step to an international monitoring capability may have been taken by the 2010 NPT Review Conference. The action plan on nuclear disarmament set forth in the Final Document provides: “Action 21. As a confidence-building measure, all the nuclear-weapon States are encouraged to agree as soon as possible on a standard reporting form and to determine appropriate reporting intervals for the purpose of voluntarily providing standard information without prejudice to national security. The Secretary-General of the United Nations is invited to establish a publicly accessible repository, which shall include the information provided by the nuclear-weapon States.” Also needed are adequate disarmament infrastructures at the national level. See Randy Rydell, “The United Nations and a Humanitarian Approach to Nuclear Disarmament,” *Nuclear Abolition Forum* (No. 1, 2011), [www.abolitionforum.org/site/wp-content/uploads/2012/01/NAF-First-issue.online-version.pdf](http://www.abolitionforum.org/site/wp-content/uploads/2012/01/NAF-First-issue.online-version.pdf), pp. 25–35, at p. 30.
  48. In a famous article, Oscar Schachter described the “professional community of international lawyers” as an “invisible college dedicated to a common intellectual enterprise”. “The Invisible College of International Lawyers,” *72 Northwestern University Law Review*, 1977, pp. 217–226.