

# **US Nuclear Posture Reviews: A Comparative Analysis**

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## **Abstract**

The Nuclear Posture Review 2018 has generated a debate about the current US nuclear deterrence policy and its future scope vis-à-vis Russia and China. Some analysts term it a continuity of the previous reviews and others find it a departure from previous reviews. A closer look at the contents of 2018 and previous reviews helps clear this ambiguity of continuity or change. This paper examines the strategic environment, nuclear weapons role in the US defence and US stance pertaining to the arms control treaties in all Reviews. There are a few additional characteristics of the 2018 Review. US nuclear deterrence is made more credible by improving flexible response option and expanding the nuclear use scenarios. The review as well as US President Trump's position on the arms control and disarmament may instigate an arms race between the US, Russia and China resulting in strategic instability globally.

## **Keywords**

Strategic stability, great power competition, arms race, nuclear modernization, arms control, low-yield weapons, New START, INF Treaty, JCPOA

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## **Introduction**

The bombing of the Japanese, Hiroshima, and Nagasaki by the United States in 1945 manifested the unprecedented destructive power of nuclear weapons. The United States was the first to develop such a weapon. Later other countries, the Soviet Union, Britain, France, and China joined the league and developed their own weapons. But, due to the enormous destructive power of these weapons, none of the possessor countries ever used them. Theories of deterrence and conflict avoidance, the fear of mutual annihilation due to the presence of nuclear second-strike capability on both sides, explained the reasons for non-use of nuclear weapons. These weapons became the basis for a national strategy in which deterrence figured prominently. Initially, the concept of deterrence was rudimentary due to limited technological development. But, with the development in delivery means for nuclear weapons, the need for a robust nuclear strategy also grew. The concept of nuclear strategy kept evolving throughout the Cold War era due to limitations of the strategies formulated by the two superpowers then as well as changes in technological advancement. First, the strategy of Massive Retaliation was adopted by the US, but when the USSR was able to develop the ability to strike back after absorbing the first strike, 'Flexible Response' was developed. The criticism on Flexible Response, due to the large concentration of resources among others, led to the 'Countervailing' and 'Prevailing' Strategies. After the end of the Cold War, successive US administrations came up with reviews of nuclear policy called Nuclear Posture Review. The Nuclear Posture Review outlines US' nuclear strategy, capabilities, policy and force posture. It formulates the presidential policy directions keeping in focus threat to the US as perceived by its policymakers for five to ten years. For example, the Clinton Administration launched the first review in 1994. Later, George W. Bush Administration in 2002 and President Obama's

Administration in 2010 also published Reviews. President Trump's Administration came up with its review in 2018.

It is important to note that today, the US nuclear politics revolves primarily around the Russian and Chinese threats. In any case, these three powers are the main actors of nuclear politics in the world presently. This paper will look at the review process of the US Nuclear Posture Review and the future trends and implications of 2018 review for the overall global nuclear environment. The paper will seek to answer questions like; whether the latest review was a setback to the non-proliferation efforts and reduction in the nuclear weapons role in the US security strategy? Does Trump Administration have a different approach than the Obama Administration towards its nuclear posture?

The paper is divided into three parts. The first part will find the similarities and differences between 2002, 2010 and 2018 Reviews. The second part will look at the future trends in nuclear policies and the last part will discuss the implications of these trends.

### **Nuclear Posture Review 2018 – Key Features**

One of the key features of the Nuclear Posture Review (NPR) 2018 is the “return of great power competition”.<sup>1</sup> The US “does not wish to regard either Russia or China as an adversary”<sup>2</sup> but these states have posed challenges that the US is ready to meet. The Review assesses that Russia may resort “to use force to alter the map of Europe and impose its will on its neighbors.”<sup>3</sup> Russia is also believed to making moves in the “violation of its international legal and political commitments.”<sup>4</sup> These violations directly affect the security of other countries. China had rejected the ruling of the Permanent Court of Arbitration Tribunal which had termed “Chinese maritime claims in the South China Sea to be without merit.”<sup>5</sup> Russia and China have also not followed the US lead in

reducing and eliminating nuclear weapons. The US nuclear capabilities have been reduced by 85 percent since 1991.<sup>6</sup> On the other hand, Russia and China are not only expanding their nuclear arsenals but also modernizing them. Russia has expanded and improved its strategic and non-strategic forces and China has expanded its nuclear force under its military modernization program.<sup>7</sup> North Korea is increasing its nuclear arsenal and Iranian nuclear ambitions are still prevalent.<sup>8</sup> Nuclear terrorism also remains a significant threat to the US and its allies.<sup>9</sup>

The review also states that the role of nuclear weapons will not be limited to deterring nuclear aggression, but non-nuclear aggression as well. The US undertakes to provide guarantees to allies through extended deterrence. Nuclear weapons will also be used to achieve objectives should deterrence fail. The US will modernize and maintain a strategic nuclear triad as well as non-strategic nuclear forces, as well as, maintain robust nuclear command and control and responsive infrastructure.

The review highlights that American nuclear weapons are approaching the end of their lifecycle,<sup>10</sup> the US should, therefore, prepare for uncertain and unexpected challenges. 2018 review has outlined tailor-made deterrence strategies to “deter across a spectrum of adversaries, threats, and contexts.”<sup>11</sup> This includes the low-yield or tactical nuclear weapons for flexible response options. The US will continue to provide extended nuclear deterrence to the allies and partner countries. This will dissuade them from developing their own independent deterrence capability. Nuclear modernization, being undertaken by the US, will assure the allies about the credibility of the US commitment to their security. The US also remains committed to the nuclear arms control and non-proliferation, but this is linked with efforts in these areas globally and actions by Russia and China. This approach by the US on arms control and non-proliferation suggests that these agendas are no more in the US strategic focus.

## **2002, 2010 and 2018 Reviews**

The key features of 2002, 2010 and 2018 NPRs are discussed below to highlight commonalities and differences.

### *Global Security Environment*

One of the key sections in every NPR is dedicated to the analysis of the global security environment. The reviews outline the potential adversaries and threats to US security. By comparing the global security environment in the 2018 review with the 2002 review and 2010 review, one finds that there is no major change in threats and adversaries, but the priorities have changed. The international security environment was termed as dynamic and unpredictable in 2002 review. The US faced a range of potential adversaries like hostile states, a coalition of opposing states and non-state actors. The threat of global nuclear war had reduced in the 2010 security environment assessment but the risk of the use of nuclear weapons had increased.<sup>12</sup> Non-state actors and terrorism are also given more focus in the 2010 Review. The security environment in the 2018 Review is termed as the return of great power competition with reference to Russia and China. Thus the 2018 Review shifts its focus from non-state actors to great power politics vis-à-vis Russia and China.

The competition with Russia and China is mentioned in all three reviews. 2002 and 2010 reviews state it in ambiguous terms, but in the 2018 review, it is referred to in a clear and categorical manner. Russia and China are mentioned in the 2002 and 2010 reviews as the undesired but potential adversaries. Their nuclear programs are termed as a source of concern for the US. The 2018 review states Russia and China as geopolitical competitors.

The other common pressing challenge is nuclear proliferation. North Korean and Iranian nuclear programs are mentioned as a possible threat to the US and its allies. Unlike 2010 and 2018

reviews, the 2002 review also expressed concern with nuclear proliferation in Iraq, Libya, and Syria. However, these countries no more pose threat of weapons of mass destruction after the US direct military invasion of Iraq in 2003 and NATO-led military intervention in Libya in 2011. The Syrian plutonium reactor was destroyed by Israel in 2007 and its chemical weapons stockpile was destroyed by OPCW led joint mission in 2013. Hence, they don't get a mention in the successive reviews.

The threat of nuclear terrorism was given relatively more space in the 2010 review as compared to 2002 and 2018 reviews. According to the 2010 Review, nuclear terrorism was the most immediate and extreme threat. It stated that Al Qaeda and its allies were trying to get nuclear weapons.<sup>13</sup> And that they would use nuclear weapons against the United States if they could get them.

### *Role of Nuclear Weapons*

The basic role assigned to nuclear weapons in the US strategy is to deter a nuclear attack on the US mainland, its allies, and partners. This, however, also includes other conditions where nuclear weapons play a role. Deterring chemical, biological and large conventional attacks against the US could also be used as an objective of US' nuclear strategy. The 2002 review stated that nuclear forces would "continue to play a critical role in the defense capabilities of the United States, its allies, and friends."<sup>14</sup> Nuclear weapons provide credible military options to deter a wide range of threats, including WMD and large-scale conventional military force.<sup>15</sup> Obama pledged to reduce the role of nuclear weapons in his April 2009 Prague speech. Although the 2010 review downgraded the role of nuclear weapons for deterring nuclear aggression, there remained a range of contingencies in which US nuclear weapons might have played a role. These included conventional or chemical and biological weapons attack<sup>16</sup> from states like Russia and China which were nuclear weapons states

and noncompliant states like Iran and North Korea. The 2002 Review limits contingencies, in which nuclear weapons might be employed, in an indirect manner. It states that the US also reserved the right to deter aggressions from sources other than nuclear including chemical, biological as well as “surprising military developments.”<sup>17</sup> The 2018 review is more explicit on the role of nuclear weapons in the US strategy. It defines the role of nuclear weapons would be to deter nuclear and non-nuclear attacks.<sup>18</sup> “Non-nuclear strategic attacks include, but are not limited to, attacks on the U.S., allied, or partner civilian population or infrastructure, and attacks on U.S. or allied nuclear forces, their command and control, or warning and attack assessment capabilities.”<sup>19</sup> The role of nuclear weapons also includes the achievement of political objectives should deterrence fail and hedge against an uncertain future. The 2018 Review also creates a new category of threats, non-nuclear strategic attacks, upon which the US may consider using nuclear weapons. These include attacks on infrastructure and the civilian population.<sup>20</sup> By assigning new roles to the nuclear weapons, the latest review has further lowered the nuclear threshold and makes nuclear weapons more of war-fighting weapons rather than for deterrence. This situation is dangerous for nuclear nonproliferation since the US is the main driver of global nuclear non-proliferation policy.

### *Nuclear Force Policy and Strategy*

Nuclear triad (SSBNs, ICBMs, and bombers) has been made a necessary part of the defense strategy of the US, and its allies in all the reviews. In 2002 review a new triad was introduced, consisting of offensive strike systems (which partly included the old strategic nuclear triad), defensive systems, and a responsive defense infrastructure.<sup>21</sup> In 2002 review a capabilities-based approach was adopted instead of threat-based approach. The capabilities-based approach focuses more on ways and means that may be adopted

by a potential adversary than who the adversary might be and where a war might occur.<sup>22</sup> This approach gave the US the flexibility to respond to a range of threats. The 2010 review considered the options under the NEW START and concluded to retain each leg of the nuclear triad to maintain strategic stability. Under the 2010 review too, funds were allocated to “sustain and modernize the nuclear weapons complex.”<sup>23</sup> According to the 2018 Review, each leg of the nuclear triad has its own advantages that warrant retaining them. Each leg of the nuclear triad will be modernized to deter, assure, and achieve political objectives should deterrence fail and provide a hedge against future challenges. The US will sustain its legacy triad until replacement programs are deployed.<sup>24</sup> The policy regarding nuclear triad is constant in all three reviews and no major change is visible there to eliminate or restrict a leg of the triad.

The US currently has 1350 strategic nuclear warheads on 652 ICBMs, SLBMs, and strategic bombers. The US has 4000 stockpile of strategic and non-strategic nuclear warheads and 2550 additional retired warheads waiting for dismantlement.<sup>25</sup> It has also deployed 150 tactical warheads in Europe.

### *Command and Control*

In each of the review, a number of initiatives are enlisted to further improve, secure and modernize the Command and Control (C2) to increase the effectiveness of each element of the nuclear triad, to decrease the decision-making time and chances of miscalculation and miscommunication. The 2018 review calls the current Nuclear Command, Control and Communication (NC3) a legacy of the Cold War and requires modernization to address the challenges posed in the 21<sup>st</sup> Century. It gives a detailed roadmap for NC3 modernization and covers the threats in space and cyber-space, strategies of limited nuclear warfare and the overall governance of NC3.



### *Safety and Security*

The subject of safety and security of nuclear weapons received less attention in 2002 review than the successive reviews.<sup>26</sup> During the Obama's period review, the War on Terrorism not was on the front burner and the subject of safety and security received more attention. The US committed itself to nuclear safety and security worldwide. It also focused on expanding international cooperation to strengthen "nuclear security standards, practices, and international safeguards."<sup>27</sup> The 2018 review largely shares its safety and security clauses with the 2010 review. The objective of both review's posture is to deny terrorist organizations any access to nuclear weapons, weapon-usable materials, and related technologies.

### *Defense-Industrial Infrastructure*

The 2002 review had pledged to reduce the size of the operationally deployed nuclear arsenal. Instead it had outlined that the US technology base and infrastructure should be modernized to adjust to the rapidly changing situations.<sup>28</sup> Under the 2010 review, DoD transferred \$5 billion to Department of Energy (DoE) to fund "design and initial construction of the Chemistry and Metallurgy Research Replacement Nuclear Facility at Los Alamos and the Uranium Processing Facility at Oak Ridge"; "increased plutonium manufacturing capacity at the PF-4 facility at Los Alamos"; and "a revitalized warhead surveillance effort and associated science and technology support."<sup>29</sup> The modest capacity had to be put to raise production in an event of a significant geopolitical surprise. The 2018 review outlines the modernization of nuclear warheads, triad, and command, control and communication to meet the challenges of the 21<sup>st</sup> Century. It also affords the highest priority to these modernization plans.

The US has plans to engage on extensive nuclear modernization program spread over 30 years. The Obama Administration initiated it and the Trump administration vowed to continue it. The 2018 review makes no changes in the size of nuclear modernizations instead it adds new Submarine Launched Cruise Missiles(SLCMs) and low-yield nuclear warheads plans. The 2018 review says that nuclear modernization will take no more than the 6.4 percent of the national defense budget, but the new proposed capabilities will cost separately. According to the Arms Control Association, the 30 years cost of this program would approach \$1.7 trillion.<sup>30</sup> The complete US nuclear arsenal will be under modernization for the next 20 years. Many of these are at the early stage of modernization and few other will begin soon. These initiatives make the path for the nuclear arms control and disarmament further narrow.

### *Arms Control*

The US and Russia possess 92 percent of the global nuclear arsenal between them. After the end of Cold War and till 2009, the US has decreased its operationally deployed nuclear warheads and delivery vehicles from Cold War highs of 31,255<sup>31</sup> to 2200 warheads and 850 delivery vehicles under START I. But the Bush Administration review created a provision for the 'Responsive Force' under which thousands of warheads would be reserved to augment the operationally deployed warheads to meet the potential contingencies. After the expiry of Strategic Offensive Reductions Treaty in February 2011, the US and Russia negotiated NEW START as a follow-on bilateral arms control measure. The NEW START was signed between the Obama Administration and Russia in 2010 in Prague. It limited the operationally deployed nuclear warheads to 1550 and the number of delivery vehicles to 700 on both sides. Both sides met their limits by February 2018 and will continue to abide by the limits until February 2021.

Nuclear reductions beyond New START were proposed by the Obama Administration in 2013 but there has been no progress on it and the 2018 Review also doesn't say much on this matter. It says, "Russia has also rebuffed US efforts to follow New START with another round of negotiated reductions, and to pursue reductions in non-strategic nuclear forces."<sup>32</sup> It vows to extend NEW START for five years to 2026 with mutual agreement with Russia.<sup>33</sup> But the efforts of the US in this regard are not satisfactory since President Trump has come into the office.

While these arms control agreements are signed and ratified, all the Reviews continue to stress on the modernization of the US nuclear arsenal. Currently, the Minuteman III ICBM and Trident II SLBM are being rebuilt. Life of Ohio-Class submarines is being extended and the new Columbia-Class submarine is under-development to replace the Ohio-Class. The B-2 strategic bomber is also under modernization. The US Air Force is also planning a new B-21 strategic bomber along with a new Long-Range Standoff Weapon (LRSO).<sup>34</sup> The nuclear warheads and bombs are also going under the Life Extension Program (LEF).<sup>35</sup> The United States Air Force B-2 Bomber test-dropped the B61-12 gravity bomb at the Tonopah Test Range in Nevada in June 2018. It gives the US Air Force a wide range of options including the earth penetrating, low-yield, high-yield attacks, and option of above surface or bunker buster detonation. All the previous versions of B61 will be consolidated in B61-12 and it will have a service life of 20 years.<sup>36</sup>

The 2018 review also downplays the prospect of strategic arms control, it wishes to eliminate nuclear weapons but in the current environment, it is supposedly forced to not only retain them but also expand them. The review also fails to make efforts in this regard.

## **Nuclear Posture Review 2018 – Trends**

Among the major premises of the 2018 review is the emphasis on the low-yield nuclear weapons, broadening or lowering the nuclear use threshold, and less emphasis on international arms control treaties. The pledge to make the nuclear deterrent more credible by the above efforts is a major setback for arms control and non-proliferation frameworks.

### *Low-Yield Nuclear Weapons*

Low-yield nuclear weapons have been in debate for lowering the nuclear threshold and warfighting. These weapons are seen as less destructive and more usable. The decision regarding their use is psychologically and operationally easier due to pre-delegation of command and control.<sup>37</sup> However, the 2018 review has pledged to add low-yield weapons to meet regional aggression and lower the nuclear threshold. Unlike the 2018 review, the 2002 review did not give details about the future of the US tactical nuclear weapons, but only noted that such “nonstrategic” forces were included in the active US nuclear arsenal.<sup>38</sup> The 2010 review vowed to retire its sea-launched cruise missile (TLAM-N), terming it redundant. It had also announced to replace its F-16 with a new F-35 fighter in Europe along with a life extension program of the B-61 bomb. The existing stockpile of B-61 low-yield nuclear weapons will be replaced with the improved version B-61-12. The Trump Administration continues with old plans pertaining to the dual-capable aircraft in Europe. However, it changed the policy on the sea-launched cruise missiles. The changed policy includes a new SLCM and a new warhead for the Trident II D5 sea-launched ballistic missile (SLBM). The new low-yield warhead and a new SLCMs system are some major changes to Obama’s Review. The addition of new low-yield weapons in the US nuclear arsenal may lead other powers to further develop their own low-yield weapons.

### *Nuclear Weapons Threshold*

Does the new review lower or raise the nuclear employment threshold? The US 2018 review added two new scenarios in which nuclear weapons can be employed, cyber-attacks and a conventional attack on US NC3. The 2018 review also states that “it remains the policy of the United States to retain some ambiguity regarding the precise circumstances that might lead to a U.S. nuclear response.”<sup>39</sup> The term “non-strategic nuclear attack” is not clearly explained. Leaving the chances open, it is up to the US to define the said ambiguity in almost any conflict. However, whether a larger cyber-attack on the US NC3 really instigate a nuclear response remains to be seen. Also, the US objective of adding low-yield warheads and expanding the nuclear use scenarios in the review is to counter the escalate-to-deescalate strategy of Russia. Russia has low-yield nuclear warheads and reportedly it keeps the option open to use them in the event that it might be losing a conventional war with NATO. The US low-yield weapons are supposed to strengthen the deterrence by denying Russia any incentive to use its low-yield weapons. However, the expansion of conditions to use nuclear weapons and the introduction of low-yield nuclear weapons, also called nuclear war-fighting, may lower the nuclear threshold.<sup>40</sup> The 2018 review states that the No-First-Use has never been part of its nuclear policy and given the current environment the policy is not justified this time too.<sup>41</sup>

### *New Sea-Launched Cruise Missiles*

Currently, the US has air-delivered low-yield warheads which are not credible and survivable as compared to the SLCMs and gives more flexibility in responding to a threat. The US is looking to “pursue a modern nuclear-armed sea-launched cruise missile (SLCM).”<sup>42</sup> “They [SLCMs] will provide additional diversity in platforms, range, and survivability, and a valuable hedge against future nuclear ‘break out’ scenarios.”<sup>43</sup> The new SLCM is termed as

a response to the Russian violation of the 1987 Intermediate Nuclear Forces (INF) Treaty between the US and Russia to eliminate and permanently eliminated all of their nuclear and conventional ground-launched ballistic and cruise missiles with ranges of 500 to 5,500 kilometers.<sup>44</sup>

### *US & International Treaties*

The US 2018 review has put insurmountable challenges to the international arms control treaties. It has rejected the possibility of ratifying the Comprehensive Test Ban Treaty (CTBT).<sup>45</sup> Its entry into force, therefore, in near future, looks implausible. But, it says it will continue to adhere to the 1992 moratorium on nuclear testing. Russia has already ratified the CTBT and China has not ratified it yet like the US. It is up to the US and China to work to ratify and enter the treaty into the force. The US also pledges to continue strengthening the Nuclear Non-Proliferation Treaty by providing extended deterrence to other countries in order to restrict the number of nuclear weapons states. The 2018 review, however, fails to take into consideration the fact that nuclear disarmament is one of the three main pillars of the NPT and nuclear weapons states are obliged to renounce their weapons. The development of new low-yield weapons is also against the commitment made in the article VI of NPT because states pledged to nuclear disarmament in 'good faith.' The 2018 review also terms the new Nuclear Weapons Ban Treaty, opened in 2017 for signatures, fueled by unrealistic expectations to eliminate nuclear weapons without transforming the global security environment.<sup>46</sup> The new posture is positively against the Nuclear Weapons Ban Treaty and its principle objectives. The prospects of any developments on the talks on the FMCT are also in trouble after the US plans to expand its inventory. The 2018 review has also cost the US its leadership role in the nuclear arms control and disarmament affairs.

## **Implications**

The 2018 review adds to the existing challenges of the international nuclear order more so to arms control and disarmament efforts. With the US open to using nuclear weapons in an expanded set of scenarios it would become increasingly difficult to persuade other nations to quit their nuclearization path or disarm those who already have acquired them. The larger role of nuclear weapons in defense of the US also deepens the disappointment in the Non-Nuclear Weapon States (NNWS) who were assured, under the NPT, not to develop nuclear weapons in return to Nuclear Weapons States (NWS) relinquishing of their nuclear weapons. NWS have failed to meet this commitment “in good faith” under the Article VI of the NPT. After 2015 review Conference on the Nonproliferation of Nuclear Weapons (RevCom) failed to achieve substantial progress toward nuclear disarmament the NNWS worked to bring out a treaty to ban nuclear weapons globally.<sup>47</sup> The Treaty on the Prohibition of Nuclear Weapons (TPNW) was adopted on 7 July 2017 by the United Nations’ General Assembly. This Nuclear Weapon Ban Treaty in the UN General Assembly is a manifestation of disappointment in the Non-Nuclear Weapons States on lack of progress on nuclear disarmament.<sup>48</sup>

The renewed importance attached to nuclear weapons by the US may instigate an arms race between the US and the Russian Federation. Even China may think to increase its nuclear arsenal in the emerging situation. There is a shift in the US posture towards a more confrontational approach towards Russia and China and the latest review implies that the US relationship with these states in coming years will be guided by strategic competition rather than cooperation towards a more peaceful world.<sup>49</sup>

In the regional scenario, when the US openly talks about providing extended deterrence to its allies, it adds more value to nuclear

modernization for Russia and particularly China. China already feels threatened by the US' advanced military systems. These developments may create pressure on it to do the same. China can respond to the US new nuclear policy in two ways. It may continue to adhere to the strategy of minimum deterrence and have less reliance on nuclear weapons or engage with the US in an open arms competition. China has a declared policy of Credible Minimum Deterrence and maintains small nuclear stockpile of 200-300 nuclear warheads.<sup>50</sup> The US nuclear posture, however, signals that an aggressive nuclear policy may force its adversaries to accept US terms in negotiations. Presently, a nuclear disparity which exists between the US and China may be one of the major considerations in Beijing's decision to engage with Washington. The US has a much bigger and sophisticated nuclear arsenal than China. China at present would stand to lose by negotiating with the US because China has a much smaller nuclear arsenal and its conventional capabilities are also lagging behind the US. India's increasing nuclear and conventional force development capabilities also factor in China's strategic calculation and in its decision to agree on talks with the US on nuclear arms reductions. China and India have unsettled border disputes. Indian has also developed long-range nuclear-capable missile which is capable of hitting Chinese major cities.<sup>51</sup>

One of the threats the US referred to in the 2018 review was the nuclear ambitions of Iran. It states that though Iran had agreed to constraints on its nuclear program under the Joint Comprehensive Plan of Action (JCPOA), it had retained the capacity to develop nuclear weapons in a year or so whenever it felt the need to do so.<sup>52</sup> In a period of a mere three months, the US withdrew from the JCPOA. The US withdrawal has undermined the credibility of the US in regard to bilateral and multilateral commitments. The European states, Russia and China have opposed the US decision on the JCPOA. Trump Administration has warned the foreign



companies doing businesses in Iran. It has also rejected the European plea to exempt its companies from Iran related sanctions<sup>53</sup> and demanded a strong action from European states against Iran. This rejection by the US' European allies of its stance on JCPOA may create a cleavage between the US and Europe.

Trump Administration was vocal about the North Korean nuclear threat and had openly stated to neutralize this threat. North Korea has nuclear warheads and the capability to launch them including ICBMs. President Trump discussed the denuclearization with North Korean leader Kim Jong Un in the historic Singapore meeting on 12 June 2018. There is no clear indication by North Korea whether it agrees with the US on the de-nuclearization issue and what its understanding of the term is. The US wants complete verifiable, and irreversible denuclearization (CVID) of North Korea. The North Korean Foreign Ministry, on the contrary, showed their preference for a phased and synchronous principle<sup>54</sup> and conditioned the denuclearization with the US withdrawal from the Korean Peninsula. President Trump's statements about the final points on nuclear issues between the US and North Korea are not clear. He announced that there was no longer a nuclear threat from the North after the summit with Kim Jong Un, later he declared that there was no time limit for North Korea's de-nuclearization.<sup>55</sup> Of course, the US-North Korea talks have put a stop to the exchange of the back-and-forth hawkish statements and threats between Korean leader Kim Jon-Un and US President Trump. This may pave the way for serious peace efforts in the future. But at the moment there is no clear strategy.

Both the US and Russia retain their low-yield nuclear capabilities and are modernizing them amid the arms reduction commitment they have undertaken under the START I and the NEW START. After NEW START expires in 2021 and if the US and Russia fail to agree on a follow-on arms control agreement their nuclear

programs will be free from major arms control and disarmament commitments since 1972.

President Trump held a summit with the Russian President Putin in Helsinki on July 16, 2018. President Putin brought in the Intermediate Nuclear Forces (INF) Treaty implementation issue and extension of the NEW START for a period of another five years. According to the US Secretary of State, Mike Pompeo, no specific agreements were reached on nuclear arms control. The extension of the NEW START would hold significance for arms control since Russia and the US are not moving towards any other major arms control initiatives. However, an extension of the NEW START may also not be realized as the President Trump's National Security Advisor, John Bolton has criticized the NEW START terming it a "unilateral disarmament" by the US<sup>56</sup> and also stating that the deal carries President Obama's signatures like the JCPOA. Considering these factors, Trump Administration does not offer any hope for the future of strategic arms controls. President Trump and Putin are expected to meet in early 2019 in Washington.<sup>57</sup> The issues that would require discussions include an extension of the NEW START, INF Treaty implementation, and Russian concerns about the US missile defence. An agreement on these issues can help avoid a nuclear arms race.

China also factors in the INF Treaty's future. China has missile inventory mostly comprising systems ranging from 500 to 5500kms. Both the US and Russia are wary of the Chinese capabilities because these are not factored under in the treaty with respect to the US and Russian inventories.<sup>58</sup> Bringing China into the INF Treaty is an option, but will China agree to join it when its rival's (India) missiles development program is left unhindered? President Trump announced on Oct. 21, 2018 that the US will withdraw from the INF Treaty citing its violation by Russia and bringing in China into the debate.<sup>59</sup> However, China rejected its linking with the treaty and urged the US and Russia to solve the

dispute through dialogue and consultation.<sup>60</sup> The US Secretary of State Mike Pompeo on December 4, 2018, during a meeting at the NATO headquarters in Brussels, issued an ultimatum of sixty days to abide by the INF Treaty otherwise, the US will withdraw from it.<sup>61</sup> However, Russia may not be ready to scrap the development of new ground-launch cruise missiles and the ultimatum by the US shows its seriousness regarding the withdrawal from the treaty. If the US withdraws, it will deploy the intermediate range cruise and ballistic missiles in Europe. This may start a new era of arms race which the treaty had stalled earlier.

Additionally, according to the 2018 review, Russia has a “mistaken belief” about the advantages of limited first use, and that “correcting this mistaken Russian perception is a strategic imperative for the US.”<sup>62</sup> This is a contradictory statement. If the US believes Russia is mistaken about the US nuclear capabilities and policy, then there is no gap in policy. But the 2018 review tries to fill a gap with the Russians that it believes does not exist. The 2018 Review says low-yield options are important to preserve the credibility of deterrence. If the Russian perception of a gap in US forces is mistaken, then expanding the US nuclear options is not required to make deterrence credible.<sup>63</sup>

## **Conclusion**

As the US is the main driver of the global nuclear policy, the changes in the latest review can seriously impact the deterrence stability. The US has been a major advocate of nuclear arms control towards the end of Cold War and post-Cold War. Major initiatives like ABM Treaty, INF Treaty, and START were taken during that period. However, the US is now ending several of these agreements with no new agreement under negotiations. Nuclear weapons are traditionally assigned the deterrent role; however, developing new low-yield weapons, lowering the threshold, and

expanding nuclear use scenarios make nuclear weapons more of war-fighting weapons.

After majors, arms control initiatives like START and INF, nuclear arms competition between the US and Russia had cooled down. Now, with the scrapping of old treaties and absence of major strategic dialogue between them, the US is reverting to the Cold War thinking of superior nuclear war-fighting capabilities to re-assure the credibility of deterrence. This thinking can lead to an arms race and instability.

All the reviews have a lot of similarities and mostly the broader contours of the nuclear postures have remained the same. However, there is one inherent contradiction in the reviews. They talk about the nuclear arms control and non-proliferation as well as the nuclear modernization program at the same time. Although the nuclear stockpile has decreased drastically from the Cold War highs, nuclear modernization, both qualitatively and quantitatively, has nullified the gains. In 2010 NPT Review Conference also, the US and other countries agreed to “diminish the role and significance of nuclear weapons in all military and security concepts, doctrines and policies” and to take forward the talks on further reductions in nuclear arsenals. But when Obama left the office the US was engaged in a \$1 trillion nuclear modernization program over the next 30 years. Obama can be credited with further reductions in the active US nuclear arsenal but his pledge to eliminate nuclear weapons failed with the US nuclear modernization plans. The US nuclear policy is headed towards nuclear war-fighting by modernizing non-strategic weapons and expanding nuclear response scenarios.

All major powers, i.e. US, Russia, China, and India, are currently engaged in nuclear modernization and arms race. The future of arms control and disarmament looks bleak especially with the focus on the low-yield nuclear weapons. Unlike the 2010 review,

the latest review doesn't say much regarding the nuclear arms control and the language suggests that the US is merely fulfilling the formality on the arms control. President Trump in his statement said: "Let it be an arms race. We will outmatch them [Russia and China] at every pass and outlast them all."<sup>64</sup> The strategy to raise the bar and force the other to come to the table may lead the world towards an arms race. Instead, the US should take its leadership role in the arms control negotiations. It should undertake serious efforts to engage China and Russia in arms control negotiations. The US also needs to bring the growing Indian nuclear activities and their safety and security under a serious consideration. It has historically taken the driving seat to further the agenda of arms control, however, the latest review suggests that the agenda is not a priority.

## **End Notes**

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<sup>1</sup> "US Nuclear Posture Review 2018," Department of Defense, p.6

<https://media.defense.gov/2018/Feb/02/2001872886/-1/-1/1/2018-NUCLEAR-POSTURE-REVIEW-FINAL-REPORT.PDF>

<sup>2</sup> Ibid. p. 7

<sup>3</sup> Ibid. p. 6

<sup>4</sup> Ibid. p. 6

<sup>5</sup> Ibid. p. 6

<sup>6</sup> Ibid. p. V

<sup>7</sup> Ibid. p. 2

<sup>8</sup> Although President Trump has discussed the North Korean denuclearization with Chairman Kim and North has taken initial steps, but the substantive progress can only be made after the US is successful in assuring the North Korea its security.

<sup>9</sup> Ibid. p.66

<sup>10</sup> The US is engaged in the modernization, refurbishment and rebuilding of its nuclear arsenal. Obama Administration planned to spend about a trillion USD on nuclear modernization.

<sup>11</sup> Ibid. p.26

<sup>12</sup> “Nuclear Posture Review 2010,” p.3

<sup>13</sup> Ibid. p.3

<sup>14</sup> Ibid.

<sup>15</sup> 2001 NPR p.7

<sup>16</sup> 2010 NPR p.16

<sup>17</sup> Nuclear Posture Review [Excerpts], p.4

<sup>18</sup> 2018 NPR p.20

<sup>19</sup> 2018 NPR p.21

<sup>20</sup> Ibid. p.21

<sup>21</sup> “Nuclear Posture Review,” Nuclear Threat Initiative, August 1, 2002, <http://www.nti.org/analysis/articles/nuclear-posture-review/>

<sup>22</sup> “Nuclear Posture Review 2001,” p.8

<sup>23</sup> 2010 NPR.

<sup>24</sup> 2018 NPR p. X

<sup>25</sup> “Arms Control and Proliferation Profile: The United States,” *Arms Control Today*, March 2018, <https://armscontrol.org/factsheets/unitedstatesprofile>

<sup>26</sup> “Summaries of the 1994, 2001, and 2010 Nuclear Posture Reviews,” Information Series, National Institute for Public Policy, May 12, 2016

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<sup>28</sup> 2002 NPR p.26

<sup>29</sup> 2010 NPR p.42

<sup>30</sup> “U.S. Nuclear Modernization Programs,” *Arms Control Association*, March 2018, <https://www.armscontrol.org/factsheets/USNuclearModernization>

<sup>31</sup> Hans M. Kristensen & Robert S. Norris, “Global nuclear weapons inventories, 1945–2013,” *Bulletin of the Atomic Scientists* 69, no. 5 (2013): 75-81.

<sup>32</sup> 2018 NPR p.98

<sup>33</sup> Ibid. p.73

<sup>34</sup> U.S. Nuclear Modernization Programs, *Arms Control Association*, updated August 2018, <https://www.armscontrol.org/factsheets/USNuclearModernization>

<sup>35</sup> Ibid.

<sup>36</sup> US Air Force Tests Upgraded ‘Earth-Penetrating’ Nuclear Bomb, *Sputnik*, August 24, 2018, <https://sputniknews.com/military/201808241067454740-earth-penetrating-nuclear-bomb-tested/>

<sup>37</sup> “Tactical Nuclear Weapons (TNW),” *Nuclear Threat Initiative*, May 01, 2002, <https://www.nti.org/analysis/articles/tactical-nuclear-weapons/>

<sup>38</sup> Nuclear Posture Review [Excerpts],” 8 January 2002 p.10

<sup>39</sup> 2018 NPR p.22

<sup>40</sup> Adam Mount, Abigail Stowe-Thurston, “What is US nuclear policy, exactly?” *Bulletin of Atomic Scientists*, April 18, 2018, <https://thebulletin.org/2018/04/what-is-us-nuclear-policy-exactly/>

<sup>41</sup> 2018 NPR p.22

<sup>42</sup> Ibid. p.54

<sup>43</sup> Ibid. p.55

<sup>44</sup> “The Intermediate-Range Nuclear Forces (INF) Treaty at a Glance,” *Arms Control Association*, April 4, 2017, <https://www.armscontrol.org/factsheets/INFtreaty>

<sup>45</sup> 2018 NPR p.87

<sup>46</sup> Ibid. p.72

<sup>47</sup> “Treaty on the Prohibition of Nuclear Weapons,” *Nuclear Threat Initiative*, September 12, 2018, <https://www.nti.org/learn/treaties-and-regimes/treaty-on-the-prohibition-of-nuclear-weapons/>

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<sup>59</sup> “Remarks by President Trump Before Air Force One Departure,” *White House*, Oct. 20, 2018, <https://www.whitehouse.gov/briefings-statements/remarks-president-trump-air-force-one-departure-4/>

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