



## INFORMATION SERIES

Issue No. 568

December 1, 2023

### **The October 2023 Strategic Commission Report and U.S. Nuclear Weapons Requirements**

**Dr. Mark B. Schneider**

*Dr. Mark B. Schneider is a Senior Analyst with the National Institute for Public Policy. Before his retirement from the Department of Defense Senior Executive Service, Dr. Schneider served as Principal Director for Forces Policy, Principal Director for Strategic Defense, Space and Verification Policy, Director for Strategic Arms Control Policy and Representative of the Secretary of Defense to the Nuclear Arms Control Implementation Commission. He also served in the senior Foreign Service as a Member of the State Department Policy Planning Staff.*

The October 2023 bipartisan Congressional Strategic Posture Commission's report was extremely perceptive. It examined the 2027-2035 threat environment and recognized the increased risk of nuclear war resulting from Russia's Putin and China's Xi, stemming from their aggressive behavior in Europe and Asia and their military and nuclear buildup. The Commission's report represents a repudiation of the Biden Administration's flawed 2022 *Nuclear Posture Review*, calling for a substantial strengthening of the U.S. nuclear deterrence posture. The Commission recognized that the United States will soon be threatened not by "one, but two nuclear peer adversaries, each with ambitions to change the international status quo, by force."<sup>1</sup> It noted that Russia is already ahead in numbers and that China will achieve "...rough quantitative parity with the United States in deployed nuclear warheads by the mid-2030s."<sup>2</sup>

The Chairman and Vice Chairman of the Commission noted that "...a number of commissioners believe it is inevitable that the size of the U.S. nuclear stockpile and the number of delivery systems should increase."<sup>3</sup> Indeed, there are a remarkable number of consensus



## INFORMATION SERIES

Issue No. 568 | December 1, 2023

---

recommendations that would increase the number of U.S. nuclear weapons and delivery systems beyond the Biden Administration's program of record. It stated:

- "The current modernization program should be supplemented to ensure U.S. nuclear strategy remains effective in a two-nuclear-peer environment."
- "Deployed strategic nuclear force requirements will increase for the United States in such a threat environment."
- "To avoid additional risk and meet emerging challenges, the United States must act now to pursue additional measures and programs. Additional measures beyond the planned modernization of strategic delivery vehicles and warheads may include either or both qualitative and quantitative adjustments in the U.S. strategic posture."
- "The U.S. strategic nuclear force posture should be modified to: Address the larger number of targets due to the growing Chinese nuclear threat."
- "[T]he current POR [Program of Record] is not a like-for-like transition in capacity, and may demand more SSBNs [nuclear ballistic missile submarines] if the United States chooses to deploy additional missiles and nuclear warheads."
- "First, the Commission recommends that the Air Force and Navy exercise uploading ICBM and SLBM warheads" and, "Prepare to upload some or all of the nation's hedge warheads."
- "Increase the planned production of Columbia SSBNs and their Trident ballistic missile systems, and accelerate development and deployment of D5LE2 [Trident D-5 Life Extension Program II]."
- "Increase the planned number of B-21 bombers and the tankers an expanded force would require."
- "Initiate planning and preparations for a portion of the future bomber fleet to be on continuous alert status, in time for the B-21 Full Operational Capability (FOC) date."
- "Plan to deploy the Sentinel ICBM in a MIRVed configuration."
- "Increase the planned number of deployed Long-Range Standoff Weapons [nuclear long-range cruise missiles]."
- "Address the need for U.S. theater nuclear forces deployed or based in the Asia-Pacific theater."
- "Finally, the U.S. theater nuclear force posture should be modified in order to provide the President a range of militarily effective response options to deter or counter Russian or Chinese limited nuclear use in theater."<sup>4</sup>

Unlike the Biden Administration, the Commission recognized that "...there is no prospect of a meaningful arms control Treaty being negotiated with Russia in the foreseeable future..."<sup>5</sup> It noted that, "Over the past 20 years, Russia has either violated or has failed to comply with nearly every major arms control treaty or agreement to which the United States is or was a



## INFORMATION SERIES

Issue No. 568 | December 1, 2023

---

party.”<sup>6</sup> It continued, “...given Russia’s history of noncompliance and illegal treaty suspensions, and China’s continued intransigence on arms control dialogue, the United States cannot develop its strategic posture based on the assumption that arms control agreements are imminent or will always be in force.”<sup>7</sup>

While the Commission’s assessment of the nuclear threat to the United States and its allies appears more realistic than any public Pentagon assessment in over two decades, it is still based upon executive branch estimates that probably underestimate Russian and Chinese nuclear capabilities. The Pentagon admits Russia has more nuclear warheads than the United States and is increasing the number but provides few details.<sup>8</sup> Russian sources suggest that Moscow’s nuclear arsenal may be as much as twice the Washington assessed level.<sup>9</sup> Regarding China, there is a large disconnect between the alarming growth of its nuclear missiles including MIRVs and the relatively low assessed number of Chinese nuclear warheads. For example, a current force of 500 ICBM launchers, 350 ICBMs, 72 armed SLBM launchers, 250 IRBM launchers, and 500 nuclear-capable IRBMs suggests that official DoD estimates of 500+ “operational” nuclear warheads in May 2023, growing to 1,000+ “operational” warheads in 2030, and which are “on track to exceed previous projections,” i.e., 1,500 warheads in 2035, may be significant understatements.<sup>10</sup> The Pentagon’s unrealistic assumption is that the new Chinese silos house older single warhead DF-31 ICBMs.

### U.S. Nuclear Targeting

Nuclear targeting is *not* the same as deterrence. As Dr. Keith Payne has pointed out deterrence is much more *complicated* and *uncertain*.<sup>11</sup> Indeed, if our adversaries know that U.S. force levels preclude effective nuclear targeting, this is unlikely to help deterrence.

For decades, U.S. targeting policy has focused on holding at risk “tactical and strategic nuclear forces, military command centers, conventional military forces including armies in motion, and industrial facilities supporting military operations.”<sup>12</sup> As a matter of policy, the United States avoids deliberately targeting cities with the objective of killing civilians.<sup>13</sup> The drastic post-Cold War reduction of American tactical nuclear weapons eliminated most capability against moving armies and warships. In 2012, former United States Strategic Command (USSTRATCOM) Commander Admiral (ret.) Richard Mies, wrote that the “...longstanding [U.S.] targeting doctrine of flexible response – [was] a doctrine designed to hold at risk our potential adversaries’ military forces, war-supporting industry, command and control capabilities, and military and while minimizing to the maximum extent collateral damage to population and civilian infrastructure.”<sup>14</sup> In 2013, the Obama Administration’s nuclear weapons employment policy stated, “The new guidance requires the United States to maintain significant counterforce capabilities against potential adversaries. The new guidance does not rely on a ‘counter-value’ or ‘minimum deterrence’ strategy.”<sup>15</sup> Elaborating on this, the Department of State noted, “The United States will not intentionally target civilian populations or civilian objects,” adding that U.S. strategy, “Seek[s] to minimize collateral damage to civilian populations and civilian objects.”<sup>16</sup> The 2020 Trump Administration nuclear employment



## INFORMATION SERIES

Issue No. 568 | December 1, 2023

strategy declared that the, “United States will not intentionally target civilian populations,” and that it “...will strive to end any conflict at the lowest level of damage possible...”<sup>17</sup> By deliberately targeting soft “countervalue” targets such as undefended and vulnerable cities, a policy of minimum deterrence has the opposite effect. Given the value the United States places on preserving innocent civilian lives, it lacks credibility against anything other than in-kind retaliation.

Both nuclear warhead numbers and technical characteristics such as survivability (about which the Commission voiced concern),<sup>18</sup> yield, accuracy and defense penetration potential are critical elements in nuclear targeting, which explains many of the Commission’s recommendations. The number of targets in Russia and China may be much greater than generally believed. For example, in 1985, Chairman of the Joint Chief’s of Staff General John W. Vessey Jr. told President Reagan that the United States needed more “prompt hard target kill capability” and that even against soft targets, “With a fully generated force [all available weapons made ready] we can cover all soft targets today; whereas the day-to-day coverage was only 50% today...”<sup>19</sup> He said the United States needed 100 MX (Peacekeeper) ICBMs (only 50 were deployed). In 1985, the United States had about 10,000 strategic nuclear weapons compared to under 2,000 today, despite the large growth in adversary underground facilities.<sup>20</sup> The following chart indicates the scope of U.S. nuclear weapons reductions since the end of the Cold War.<sup>21</sup>

**Figure 1: 2020 U.S. Nuclear Warhead Stockpile**





## INFORMATION SERIES

Issue No. 568 | December 1, 2023

---

The number of hard targets the United States faces is increasing. Russia reportedly is deploying its new Sarmat “super-heavy ICBM,” its SS-27 Mod 2/Yars ICBM and its Avangard hypersonic missile in superhard silos. Russian silos are reportedly hardened to 15,000-25,000 pounds per square inch (psi) and Sarmat silos are reportedly being upgraded.<sup>22</sup> In 2019, Putin was briefed that Russia would deploy 20 Sarmat regiments, which is at least 120 launchers, compared to 46 SS-18 silos before Sarmat silo conversion began.<sup>23</sup> Russia is also reportedly building new deep underground command and control bunkers, which Putin acknowledged.<sup>24</sup> It is only reasonable to assume that they are harder and better protected than the older bunkers. China has built its Underground Great Wall, a 5,000-km long tunnel system to protect its mobile ICBMs.<sup>25</sup> The 2023 DoD China report noted that, “The PRC has thousands of UGFs [Underground Facilities] and constructs more each year” with the purpose of protecting, “C2 [Command and Control], weapons of mass destruction, logistics, and modernized missile, ground, air, and naval forces.”<sup>26</sup> China is engaged in a massive expansion of its ICBM force (now at least 300 new silos plus mobile ICBMs<sup>27</sup>). If the new silos are built with new concrete reportedly hardened to 30,000 psi,<sup>28</sup> they would be extremely difficult to destroy, eroding the U.S. counterforce capability.

U.S. presidents since Ronald Reagan approved sensible nuclear employment policies but allowed the U.S. deterrent to age and ordered nuclear weapons reductions that made it impossible to implement U.S. nuclear guidance fully and effectively. The Clinton Administration terminated many nuclear modernization plans and programs. The George W. Bush Administration reduced by two-thirds the number of deployed strategic nuclear weapons and eliminated without replacement two of the three best counterforce weapons -- all Peacekeeper ICBMs, all Advanced Cruise Missiles and 70 percent of the older AGM-86B nuclear cruise missiles.<sup>29</sup> The only remaining missile warhead in the U.S. arsenal with a good counterforce capability is the W88 on the Trident D-5 SLBM; however, only 400 were reportedly produced compared to the Reagan plan for thousands.<sup>30</sup> Producing more W88s is virtually impossible without restoring the U.S. fissile material pit production capability. The Minuteman III ICBMs (with about 400 deployed warheads<sup>31</sup>) with 1970 accuracy have some counterforce capability but they are not comparable to the Peacekeeper.<sup>32</sup> All available W88s cannot be deployed and reportedly no more than six of the 12 available Trident submarines are normally at sea,<sup>33</sup> reducing American prompt counterforce capability except under generated alert (i.e., maximum crisis availability and survivability of the force.)

Most of the current strategic modernization program will not start until after 2030 and the new Sentinel ICBMs, the Columbia-class missile submarines and the B-21 bombers are already behind schedule.<sup>34</sup> The Sentinel will have more counterforce capability but it will only carry 400 warheads. According to the Strategic Posture Commission, the new W93 warhead (available in 2040<sup>35</sup>) will provide “new military capabilities” but the report provided no details.<sup>36</sup> While the new Mark 7 reentry vehicle might have increased accuracy, its yield is unlikely to be sufficient to provide substantial counterforce capability without an apparently unprogrammed upgrade in the Trident D-5’s 1990 missile accuracy.



## INFORMATION SERIES

Issue No. 568 | December 1, 2023

---

This nation's nuclear posture is mainly the product of the 2010 *Nuclear Posture Review* which assumed a benign security environment. It reportedly determined the requirement was for "1500 'arms control accountable' warheads – about 1850 'real' deployed warheads..."<sup>37</sup> A 2012 Heritage Foundation study by Rebecca Heinrichs (a member of the Commission) and Baker Spring concluded that the United States needed approximately 2,700-3,000 deployed strategic nuclear warheads because of the requirement to hold at risk adversary "hardened and mobile targets with high confidence..."<sup>38</sup> Some approaches to targeting mobile ICBMs likely require large numbers of nuclear warheads. Other approaches may necessitate the deployment of nuclear hypersonic missiles. Neither of these are in the Biden Administration's nuclear deterrence plan. The Russian and Chinese nuclear missile buildup and UGF construction of the last decade probably require about 1,000 additional counterforce capable warheads.<sup>39</sup> In addition, threatening China's so-called Underground Great Wall would likely require hundreds to thousands of high counterforce performance warheads (i.e., capable of threatening very deeply buried targets), depending on the targeting approach. This is highly unlikely with the current and planned U.S. nuclear capability, even under generated alert.

The Biden Administration's 2022 *Nuclear Posture Review* involved: 1) programming an inadequate number of nuclear weapons to implement U.S. strategy, 2) reversing the decades old policy of maintaining a nuclear "hedge," 3) killing the nuclear sea-launched cruise missile (SLCM-N) program and 4) eliminating the B-83 high-yield bomb, the weapon most capable of threatening hard and *very* deeply buried facilities (HDBTs) built in hard rock.<sup>40</sup> This reportedly includes some of the deep underground bunkers that President Putin depends upon to keep himself alive during a nuclear war.<sup>41</sup>

The 2005 National Academy of Science (NAS) report on HDBTs cited 10,000 HDBTs worldwide, noting that some could survive a "few" nuclear strikes and 100 were candidates for a robust nuclear earth/rock penetrator which could lower the necessary yield by a factor of 15-25.<sup>42</sup> The number of HDBTs is likely much higher today. The NAS concluded that conventional weapons have inadequate capability against HDBTs even with high-quality intelligence.<sup>43</sup> The NAS calculations are still valid because U.S. nuclear forces have not been improved since 1997.

In October 2023, the Pentagon announced the Biden Administration would move forward with the B61-13 nuclear bomb, which "...will provide the President with additional options against certain harder and large-area military targets..."<sup>44</sup> Reportedly, only 50 will be built,<sup>45</sup> and they "...will not increase the overall number of weapons in our nuclear stockpile," as other existing weapons in the stockpile will be eliminated.<sup>46</sup> Two senior Republican defense committee leaders, Congressman Mike Rogers and Senator Roger Wicker, supported the decision but noted that while it "...will better allow the Air Force to reach hardened and deeply-buried targets, it is only a modest step in the right direction."<sup>47</sup> However, the B61-13 is apparently not a deep earth/rock penetrator.<sup>48</sup> Based on the NAS analysis and the reported yield of the B61-13,<sup>49</sup> it is insufficient to threaten the *deepest* HDBTs without earth/rock penetration capability.<sup>50</sup> While there are many important targets, including HDBTs, that the B61-13 can destroy, the deepest HDBTs are not among them. It is possible to plan for multiple



## INFORMATION SERIES

Issue No. 568 | December 1, 2023

---

strikes on each HDBT, but the United States will not have enough B61-13 (or other types of nuclear weapons) to do this on a large scale.

In 2012, General James Cartwright, a former USSTRATCOM Commander, chaired the drafting of a report by a self-styled “Commission” supporting an “international movement for the elimination of all nuclear weapons.”<sup>51</sup> It was apparently an effort to suggest that a small force could effectively and credibly implement the requirements of U.S. nuclear strategy.<sup>52</sup> (It did not assign nuclear forces against Russian and Chinese nuclear forces threatening U.S. allies, Russian or Chinese tactical nuclear forces or conventional forces.) Notably, the so-called *Global Zero* targeting plan allocated two nuclear warheads against each Russian and Chinese ICBM silo (China then had only twenty).<sup>53</sup> Today, it would probably require 1,000 or more counterforce capable warheads to target *known* Russian and Chinese missile silos and other important nuclear and missile related facilities with two-on-one attacks. It would also likely require hundreds to thousands more to target effectively the Chinese Underground Great Wall, depending upon the targeting approach, not to mention thousands more warheads to hold at risk the thousands of Chinese UGFs the Pentagon has revealed or to threaten deployed mobile ICBMs.

### Conclusion

Due to the large growth in the nuclear threat over the last decade, the Biden Administration’s nuclear deterrent probably could not implement even the flawed *Global Zero* targeting plan with high confidence. The United States does not have sufficient nuclear weapons and few of them have high-confidence capabilities (very high-yield or high-yield and earth/rock penetrating capability) to threaten *very deep* HDBTs. China’s Underground Great Wall is reportedly hundreds of meters underground.<sup>54</sup> It would probably require two counterforce capable warheads against many aim points to achieve high damage expectancy against these tunnels.

The Strategic Posture Commission’s recommendations on *future* U.S. nuclear force upload can be implemented *immediately* at virtually no cost. Putin’s violation and illegal suspension of the New START Treaty is a material breach; hence, the option of U.S. Treaty suspension is legally available. The 2001 *Nuclear Posture Review* report stated that the three legs of the Triad can be uploaded in “weeks, months and years.”<sup>55</sup> Without on-site inspections since March 2020, Russia may have uploaded all or most of its strategic forces, and there are other troubling noncompliance issues.<sup>56</sup>

Upload is the only short-term option available to the United States to prevent further erosion of America’s nuclear deterrent. According to then-USSTRATCOM Commander Admiral Charles Richard, “...two-thirds of those [U.S. nuclear] weapons are ‘operationally unavailable’ because of treaty constraints, such as provisions of the New START treaty with Russia.”<sup>57</sup>

It is reasonable to assume that warhead upload would get Putin’s and Xi’s attention and enhance deterrence. It could double the survivable U.S. nuclear force. In 2022, Admiral Richard



## INFORMATION SERIES

Issue No. 568 | December 1, 2023

lamented that, “As I assess our level of deterrence against China, the ship is slowly sinking.”<sup>58</sup> In the nuclear arena, upload might reverse this trend. In the mid- to long-term, the effectiveness of the U.S. nuclear deterrent depends upon the modernization program. Still, numbers count and the Commission’s recommendation on upload and re-MIRVing ICBMs would about double the number of survivable warheads in the modernized force and substantially increase American counterforce potential and damage expectancy at *virtually no cost*. The Commission’s recommendation for placing bombers on nuclear alert could also increase the survivable U.S. nuclear force.

Dictators like Putin and Xi can be expected to care a great deal about the number and damage expectancy of U.S. nuclear weapons against their military and underground leadership facilities, on which they depend to expand their empires and keep themselves alive if war escalates to nuclear use. The Strategic Posture Commission cogently outlined the threat that we face, the need to enhance our nuclear deterrent and some of its recommendations are very low cost. In light of the possible consequences of the failure of nuclear deterrence, the Commission’s recommendations should be taken seriously.

<sup>1</sup> Congressional Commission on the Strategic Posture of the United States, *America’s Strategic Posture, The Final Report of the Congressional Commission on the Strategic Posture of the United States*, Institute for Defense Analysis, 2023, p. V, available at <https://www.ida.org/-/media/feature/publications/a/am/americas-strategic-posture/strategic-posture-commission-report.ashx>.

<sup>2</sup> *Ibid.*, p. 8.

<sup>3</sup> *Ibid.*, p. vi.

<sup>4</sup> *Ibid.*, pp. viii, 34, 35, 43, 45, 46, 48.

<sup>5</sup> *Ibid.*, p. 81.

<sup>6</sup> *Ibid.*, p. 84.

<sup>7</sup> *Ibid.*, p. 81.

<sup>8</sup> Mark B. Schneider, *How Many Nuclear Weapons Does Russia Have? The Size and Characteristics of the Russian Nuclear Stockpile, Occasional Paper*, Vol. 3 No. 8, October 2023, pp. vii, 5, 10, 11, available at <https://nipp.org/papers/how-many-nuclear-weapons-does-russia-have-the-size-and-characteristics-of-the-russian-nuclear-stockpile/>.

<sup>9</sup> *Ibid.*, p. 231.

<sup>10</sup> U.S. Department of Defense, *Military and Security Developments Involving the People’s Republic of China 2023*, pp. VIII, 55, 59, 67, 110, 111, 188, available at <https://media.defense.gov/2023/Oct/19/2003323409/-1/-1/1/2023-MILITARY-AND-SECURITY-DEVELOPMENTS-INVOLVING-THE-PEOPLES-REPUBLIC-OF-CHINA.PDF>. Also see Mark B. Schneider, “Will the Pentagon Ever Get Serious About the Size of China’s Nuclear Force?,” *Real Clear Defense*, December 15, 2022, available at [https://www.realcleardefense.com/articles/2022/12/15/\\_will\\_the\\_pentagon\\_ever\\_get\\_serious\\_about\\_the\\_size\\_of\\_chinas\\_nuclear\\_force\\_870335.html](https://www.realcleardefense.com/articles/2022/12/15/_will_the_pentagon_ever_get_serious_about_the_size_of_chinas_nuclear_force_870335.html).

<sup>11</sup> Keith B. Payne, “Deterrence is Not Rocket Science: It is More Difficult,” *Information Series*, No. 527, July 6, 2022, available at [https://nipp.org/information\\_series/keith-b-payne-deterrence-is-not-rocket-science-it-is-more-difficult-no-527-july-6-2022/](https://nipp.org/information_series/keith-b-payne-deterrence-is-not-rocket-science-it-is-more-difficult-no-527-july-6-2022/).

<sup>12</sup> Willaim Burr, “Jimmy Carter[']s Controversial Nuclear Target Directive PD-59 Declassified,” National Security Archive, September 14, 2012, available at <https://nsarchive2.gwu.edu/nukevault/ebb390/>.



## INFORMATION SERIES

Issue No. 568 | December 1, 2023

---

<sup>13</sup> Keith B. Payne, *The Great American Gamble*, National Institute Press, 2008, pp. 128. 180-182, 190-192. Also see Keith B. Payne, John R. Harvey, Franklin C. Miller and Robert Soofer, “The Rejection of Intentional Population Targeting for ‘Tripolar’ Deterrence,” *Information Series*, No. 563, September 26, 2023, available at [https://nipp.org/information\\_series/keith-b-payne-john-r-harvey-franklin-c-miller-and-robert-soofer-the-rejection-of-intentional-population-targeting-for-tripolar-deterrence-no-563-september-26-2023/](https://nipp.org/information_series/keith-b-payne-john-r-harvey-franklin-c-miller-and-robert-soofer-the-rejection-of-intentional-population-targeting-for-tripolar-deterrence-no-563-september-26-2023/), and David J. Trachtenberg, “Mischaracterizing U.S. Nuclear Deterrence Policy: The Myth of Deliberate Civilian Targeting,” *Information Series*, No. 542, December 14, 2022, available at [https://nipp.org/information\\_series/david-j-trachtenberg-mischaracterizing-u-s-nuclear-deterrence-policy-the-myth-of-deliberate-civilian-targeting-no-542-december-14-2022/](https://nipp.org/information_series/david-j-trachtenberg-mischaracterizing-u-s-nuclear-deterrence-policy-the-myth-of-deliberate-civilian-targeting-no-542-december-14-2022/).

<sup>14</sup> Admiral Richard Mies, USN (ret.), “Strategic Deterrence in the 21st Century,” *Undersea Warfare*, Spring 2012, p. 15, available at [https://issuu.com/julianne.m.johnson/docs/usw\\_spring\\_2012](https://issuu.com/julianne.m.johnson/docs/usw_spring_2012).

<sup>15</sup> U.S. Department of Defense, “Report on Nuclear Employment Strategy of the United States Specified in Section 491 of 10 U.S.C.,” 2013, available at <https://man.fas.org/eprint/employ.pdf>.

<sup>16</sup> U.S. Department of State, “U.S. Nuclear Employment Strategy,” Fact Sheet, October 6, 2016, available at <https://2009-2017.state.gov/t/avc/rls/2016/263488.htm>.

<sup>17</sup> Department of Defense, *Report on the Nuclear Employment Strategy of the United States – 2020 Specified in Section 491(a) of Title 10 U.S.C.*, pp. 2, 6, 7, available at [https://www.esd.whs.mil/Portals/54/Documents/FOID/Reading%20Room/NCB/21-F-0591\\_2020\\_Report\\_of\\_the\\_Nuclear\\_Employment\\_Strategy\\_of\\_the\\_United\\_States.pdf](https://www.esd.whs.mil/Portals/54/Documents/FOID/Reading%20Room/NCB/21-F-0591_2020_Report_of_the_Nuclear_Employment_Strategy_of_the_United_States.pdf).

<sup>18</sup> *America’s Strategic Posture, The Final Report of the Congressional Commission on the Strategic Posture of the United States*, op. cit., pp. 48, 63, 104.

<sup>19</sup> “National Security Council Meeting, June 3, 1985 on Interim Restraint Policy,” The Reagan Library, available at <http://thereaganfiles.com/19850603-nsc-on-interim.pdf>.

<sup>20</sup> Harold A. Feiveson, Richard H. Ullman, and Frank von Hippel, “Reducing U.S. and Soviet nuclear arsenals,” August 1985, p. 145, available at <https://sgs.princeton.edu/sites/default/files/2019-10/feiveson-ullman-vonhippel-1985.pdf>. Also see Hans M. Kristensen and Matt Korda, “Nuclear Notebook: United States nuclear weapons, 2023,” *Bulletin of the Atomic Scientists*, January 16, 2023, available at <https://thebulletin.org/remium/2023-01/nuclear-notebook-united-states-nuclear-weapons-2023/>.

<sup>21</sup> U.S. Department of State, “Fact Sheet Transparency in the U.S. Nuclear Weapons Stockpile,” October 5, 2021, available at [https://www.state.gov/wp-content/uploads/2021/10/Fact-Sheet\\_Unclass\\_2021\\_final-v2-002.pdf](https://www.state.gov/wp-content/uploads/2021/10/Fact-Sheet_Unclass_2021_final-v2-002.pdf).

<sup>22</sup> James R. Howe, “Russia’s Strategic Nuclear Weapons: Observations,” *Vision Centric*, September 27, 2023, mimeo, p. 4. Also see Matthew G. McKinzie, Thomas B. Cochran, Robert S. Norris, and William M. Arkin, “U.S. Nuclear War Plan: A Time For Change,” National Resources Defense Council, June 2001, p. 43, available at [http://www.nrdc.org/nuclear/warplan/warplan\\_ch4.pdf](http://www.nrdc.org/nuclear/warplan/warplan_ch4.pdf), and “Yesin: Russia Will Have RS-20 Missile Replacement in 2018,” *ITAR-TASS*, April 12, 2011, available at <https://wnc-eastviewcom.mutex.gmu.edu/wnc/article?id=31220894>.

<sup>23</sup> “Testing of Sarmat Intercontinental Missile to be over in 2021 - Russian Defense Management Center,” *ITAR-TASS Daily*, December 24, 2019, available at <https://on-demand-eastviewcom.mutex.gmu.edu/browse/doc/56709629>.

<sup>24</sup> Bill Gertz, “Russia Sharply Expanding Nuclear Arsenal, Upgrading Underground Facilities,” *Washington Free Beacon*, December 13, 2017, available at <https://freebeacon.com/national-security/russia-sharply-expanding-nuclear-arsenal-upgrading-underground-facilities/>. Also see “Meeting with heads of Defence Ministry, federal agencies and defence companies,” *Kremlin.ru*, November 11, 2020, available at <http://en.kremlin.ru/events/president/news/64396>.



## INFORMATION SERIES

Issue No. 568 | December 1, 2023

---

<sup>25</sup> William Wan, “Georgetown students shed light on China’s tunnel system for nuclear weapons,” *The Washington Post*, November 29, 2011, available at [https://www.washingtonpost.com/world/national-security/georgetown-students-shed-light-on-chinas-tunnel-system-for-nuclear-weapons/2011/11/16/gIQA6AmKAO\\_story.html](https://www.washingtonpost.com/world/national-security/georgetown-students-shed-light-on-chinas-tunnel-system-for-nuclear-weapons/2011/11/16/gIQA6AmKAO_story.html).

<sup>26</sup> *Military and Security Developments Involving the People’s Republic of China 2023*, op. cit., p. 88.

<sup>27</sup> *Ibid.*, pp. 64, 104.

<sup>28</sup> Joe Nasvik, “Ultra-High Performance Concrete.” *Construction Pros.com*, August 21, 2018, available at <https://www.forconstructionpros.com/concrete/article/21015846/ultrahigh-performance-concrete>.

<sup>29</sup> Wade Boese, “United States Retires MX Missile,” *Arms Control Today*, September 19, 2005, available at <https://www.armscontrol.org/act/2005-10/united-states-retires-mx-missile>. Also see Hans Kristensen, “US Air Force Decides To Retire Advanced Cruise Missile,” *Federation of American Scientists*, March 7, 2023, available at [https://fas.org/publication/us\\_air\\_force\\_decides\\_to\\_retire/](https://fas.org/publication/us_air_force_decides_to_retire/).

<sup>30</sup> “The W88 Warhead,” Nuclear Weapons Archive.org, October 1, 1997, available at <https://nuclearweaponarchive.org/Usa/Weapons/W88.html>.

<sup>31</sup> U.S. Department of State, “New START Treaty Aggregate Numbers of United States Strategic Offensive Arms,” Fact Sheet, December 1, 2020, available at <https://www.state.gov/new-start-treaty-aggregate-numbers-of-strategic-offensive-arms-15/>.

<sup>32</sup> John T. Correll, “The Ups and Downs of Counterforce,” *Air and Space Forces Magazine*, October 1, 2005, available at <https://www.airandspaceforces.com/article/1005counterforce/>.

<sup>33</sup> Peter Huessy, “Nuclear Deterrence: Painting a Bull’s Eye On the US,” Gatestone Institute, June 16, 2010, available at <https://www.gatestoneinstitute.org/1372/us-nuclear-deterrence>.

<sup>34</sup> *America’s Strategic Posture, The Final Report of the Congressional Commission on the Strategic Posture of the United States*, op. cit., p. 43.

<sup>35</sup> Whitney Spivey, “W93,” *Global Security Organization*, July 26, 2021, available at <https://www.globalsecurity.org/wmd/systems/w93.htm>.

<sup>36</sup> *America’s Strategic Posture, The Final Report of the Congressional Commission on the Strategic Posture of the United States*, op. cit., p. 44.

<sup>37</sup> “Speaking Notes: U.S. Nuclear Weapons Policies and Programs Strategic Weapons in the 21st Century Ronald Reagan Building, Washington, DC John R. Harvey 23 January 2014,” mimeo., p. 1.

<sup>38</sup> Rebecca Heinrichs and Baker Spring, “Deterrence and Nuclear Targeting in the 21st Century,” The Heritage Foundation, November 30, 2012, available at <https://www.heritage.org/node/12067/print-display>.

<sup>39</sup> Mark B. Schneider, “The Chinese Nuclear Breakout and the Biden Administration’s Nuclear Posture Review,” *Real Clear Defense*, August 28, 2021, available at [https://www.realcleardefense.com/articles/2021/08/28/the\\_chinese\\_nuclear\\_breakout\\_and\\_the\\_biden\\_administrations\\_nuclear\\_posture\\_review\\_792021.html](https://www.realcleardefense.com/articles/2021/08/28/the_chinese_nuclear_breakout_and_the_biden_administrations_nuclear_posture_review_792021.html).

<sup>40</sup> Mark B. Schneider, “Biden’s NPR: Assured Survival for Vladimir Putin,” *Real Clear Defense*, April 21, 2022, available [https://www.realcleardefense.com/2022/04/21/bidens\\_npr\\_assured\\_survival\\_for\\_vladimir\\_putin\\_828255.html](https://www.realcleardefense.com/2022/04/21/bidens_npr_assured_survival_for_vladimir_putin_828255.html).

<sup>41</sup> *Ibid.*

<sup>42</sup> National Research Council, *Effects of Nuclear Earth-Penetrator and Other Weapons*, The National Academies Press, 2005, pp. S-2, 124, available at <https://doi.org/10.17226/11282>.

<sup>43</sup> *Ibid.*, p. S-3.

<sup>44</sup> U.S. Department of Defense, “Fact Sheet on B61 Variant Development,” October 27, 2023, available at <https://media.defense.gov/2023/Oct/27/2003329624/-1/-1/1/B61-13-FACT-SHEET.PDF>.



## INFORMATION SERIES

Issue No. 568 | December 1, 2023

---

<sup>45</sup> Hans Kristensen and Matt Korda, "Biden Administration Decides To Build A New Nuclear Bomb to Get Rid Of An Old Bomb," Federation of American Scientists, October 27, 2023, available at <https://fas.org/publication/biden-administration-to-build-a-new-nuclear-bomb/>.

<sup>46</sup> U.S. Department of Defense, "Department of Defense Announces Pursuit of B61 Gravity Bomb Variant," October 27, 2023, available at <https://www.defense.gov/News/Releases/Release/Article/3571660/departement-of-defense-announces-pursuit-of-b61-gravity-bomb-variant/>.

<sup>47</sup> "ROGERS, WICKER STATEMENT ON B61-13 GRAVITY BOMB," House Armed Services Committee. October 27, 2023, available at <https://armedservices.house.gov/news/press-releases/rogers-wicker-statement-b61-13-gravity-bomb>.

<sup>48</sup> Joseph Trevithick, "Plans For More Destructive B61 Nuclear Bomb Unveiled," *THE WAR ZONE*, October 27, 2023, available at <https://www.thedrive.com/the-war-zone/plans-for-more-destructive-b61-nuclear-bomb-unveiled>.

<sup>49</sup> Ibid.

<sup>50</sup> *Effects of Nuclear Earth-Penetrator and Other Weapons*, op. cit., pp. 13, 124.

<sup>51</sup> James Cartwright, Chairman, *Global Zero U.S. Nuclear Policy Commission Report*, Global Zero, 2012, p. ii, available at [http://timemilitary.files.wordpress.com/2012/05/051612\\_globalzero.pdf](http://timemilitary.files.wordpress.com/2012/05/051612_globalzero.pdf).

<sup>52</sup> Mark Schneider, "Zero Deterrent?" *Air and Space Forces Magazine*, August 1, 2012, available at <https://www.Airandspaceforces.com/article/0812zero/>.

<sup>53</sup> Cartwright, *Global Zero U.S. Nuclear Policy Commission Report*, op. cit., p. 10.

<sup>54</sup> "China Builds Underground 'Great Wall' Against Nuke Attack," *Chosun.com*, December 14, 2009, available at [http://english.chosun.com/site/data/html\\_dir/2009/12/14/2009121400292.html](http://english.chosun.com/site/data/html_dir/2009/12/14/2009121400292.html).

<sup>55</sup> Donald H. Rumsfeld, *Annual Report to the President and the Congress*, (Washington, D.C.: Department of Defense, 2002), p. 83, available at [https://history.defense.gov/Portals/70/Documents/annual\\_reports/2002\\_DoD\\_AR.pdf?ver=2014-06-24-153732-117](https://history.defense.gov/Portals/70/Documents/annual_reports/2002_DoD_AR.pdf?ver=2014-06-24-153732-117).

<sup>56</sup> Schneider, *How Many Nuclear Weapons Does Russia Have?*, op. cit., pp. 116-120, 130-131, 135-146, 150, 168.

<sup>57</sup> Bill Gertz, "EXCLUSIVE: China building third missile field for hundreds of new ICBMs," *The Washington Times*, August 12, 2021, available at <https://www.washingtontimes.com/news/2021/aug/12/china-engaged-breathhtaking-nuclear-breakout-us-str/>.

<sup>58</sup> C. Todd Lopez, "Stratcom Commander Says U.S. Should Look to 1950s to Regain Competitive Edge," *DoD News*, November 3, 2022, available at <https://www.defense.gov/News/News-Stories/Article/Article/3209416/stratcom-commander-says-us-should-look-to-1950s-to-regain-competitive-edge/>.

The National Institute for Public Policy's *Information Series* is a periodic publication focusing on contemporary strategic issues affecting U.S. foreign and defense policy. It is a forum for promoting critical thinking on the evolving international security environment and how the dynamic geostrategic landscape affects U.S. national security. Contributors are recognized experts in the field of national security. National Institute for Public Policy would like to thank the Sarah Scaife Foundation for the generous support that made this *Information Series* possible.

The views in this *Information Series* are those of the author(s) and should not be construed as official U.S. Government policy, the official policy of the National Institute for Public Policy or any of its sponsors. For additional information about this publication or other publications by the National Institute Press, contact: Editor, National Institute Press, 9302 Lee Highway, Suite 750 | Fairfax, VA 22031 | (703) 293-9181 | [www.nipp.org](http://www.nipp.org). For access to previous issues of the National Institute Press *Information Series*, please visit <http://www.nipp.org/national-institutepress/informationseries/>.

© National Institute Press, 2023