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The Risk of Nuclear Conflict: *Calculating the Unthinkable*

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Abstract

The aim of this paper is to assess the risk of nuclear conflict, and risk management, in this current age of strategic tension at the global and regional levels. As any nuclear conflict would have global ramifications, the consequence of failure in such management is a matter that affects all of humanity.

The paper identifies a number of sources of nuclear risk drawn from past experience, and it notes ways in which current risks are either being addressed or left to chance.

The conclusion is that with strategic stability being more tenuous and complex than during the Cold War period (1950s to '80s), the risk of nuclear conflict is greater than ever before.

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1. Calculating Risk: 'Probability x severity'

'Risk' is generally quantified as the probability of some adverse event occurring, multiplied by the severity or consequences of the event if it occurs,¹ – in the case of nuclear-weapon detonations, in effect, “*we're talking about a low probability, high consequence event.*”² It is a measure of the severity of a nuclear-weapon detonation (accidental or deliberate) that by its nature it would be likely to defy the ability of local, regional or global relief agencies to respond effectively for weeks, perhaps months. It is inescapable that the risk is greater than zero.³

It is not irrelevant that despite large reductions in nuclear arsenals since the height of the Cold War, these weapons still exist in their tens of thousands,⁴ many of them on hair-trigger alert in an array of missile silos, submarines and other delivery systems in the armed forces of nuclear weapon-possessing states. As a further measure of probability, we are clearly living in an age of global tension. Take a few nuclear-infused examples—there is Russia's invasion of Ukraine. There is Russia's rhetoric about the use of nuclear weapons against nuclear-armed NATO. There is the modernisation and expansion of nuclear arsenals by the United States and China. And there is the continuing stand-off between those powerful states and their allies that rely on these armaments for their security, and those—the bulk of the international community—that hold the view that nuclear weapons are globally destabilising. In these circumstances, perhaps the most graphic gauge of probability is the Bulletin of Scientists Doomsday Clock which on 24 January 2023 was set at 90 seconds to midnight, its most dire reading to date.⁵

Normally, common risks can be quantified using data derived from past events, such as disasters involving aircraft. But in the case of nuclear conflict the unthinkable has so far occurred only 'once': in Hiroshima and Nagasaki during World War II, when the United States was the only country with nuclear weapons. In those days, there were no international treaties governing nuclear armaments nor any taboo against their use, although we all now know that Oppenheimer, one of their architects, upon witnessing the first detonation of a nuclear weapon on 16 July 1945, apparently recalled the Hindu scripture “*Now I am become Death, the destroyer of worlds*”.⁶

Although there is only one instance, some 78 years ago, of *deliberate* use in war to rely upon, there is no shortage of other data about nuclear arms to shed light on the risks that surround them. With the evidence we have of the immediate and lingering impacts on humans and the environment from nuclear-weapons testing,⁷ and from civil-use nuclear disasters such as Chernobyl and Fukushima,⁸ pathways to calculating risk are numerous.⁹

¹ Seth Baum, Executive Director, Global Catastrophic Risk Institute (a think-tank on existential risk).

<https://www.bbc.com/future/article/20220309-how-to-evaluate-the-risk-of-nuclear-war>, Seth Baum (11th March 2022)

² William Perry, former US Secretary of State for Defence, “It's quite a complicated system and it works nearly all the time,” ... “But we're talking about a low probability, high consequence event” quoted in <https://www.bbc.com/future/article/20200807-the-nuclear-mistakes-that-could-have-ended-civilisation>. See also this quote “why should we accept any probability?” from <https://futureoflife.org/nuclear/secretary-william-perry-talks-at-google-my-journey-at-the-nuclear-brink/>

³ UNIDIR, *An Illusion of Safety, Challenges of Nuclear Weapon detonations for UN Humanitarian Coordination and Response*, 2014, p.3. See also the Endnote to this paper.

⁴ SIPRI: Global estimate of the number of nuclear weapons as at 12 January 2023 is 12,512.

<https://www.sipri.org/media/press-release/2023/states-invest-nuclear-arsenals-geopolitical-relations-deteriorate-new-sipri-yearbook-out-now>

⁵ <https://thebulletin.org/doomsday-clock/current-time/>

⁶ This quotation varies from other translations in which “time” is used in place of “death”—“The Lord said, 'I am Time grown old to destroy the world, Embarked on the course of world annihilation’” see Nate Jones, *Countdown to declassification: Finding answers to a 1983 nuclear war scare*, 1 November, 2013, <https://thebulletin.org/2013/11/countdown-to-declassification-finding-answers-to-a-1983-nuclear-war-scare/#post-heading>

⁷ <https://www.atomicarchive.com/almanac/test-sites/index.html>

⁸ <https://www.atomicarchive.com/almanac/accidents/accidents.html>

⁹ UNIDIR, Wilfred Wan, *Nuclear Risk Reduction: A Framework for Analysis*, 28 June 2019

2. Types of Risk

Risk of accidents

Accidents involving nuclear weapons are well documented,¹⁰ at least in States that maintain practices of declassifying official papers. Many near misses have involved military aircraft, where planes have accidentally shed their load of nuclear weapons, or crashed with them on board, or in one case unknowingly transported nuclear weapons amongst their cargo. Unexploded nuclear bombs still lie on the seabed, embedded in swamps, and elsewhere unknown.¹¹ There have also been a number of false alarms, examples of which include the 1995 Norwegian weather rocket incident, when a scientific launch was briefly mistaken for a missile attack, and earlier the 1983 Able Archer incident, when the former Soviet Union initially misinterpreted NATO military exercises.¹² (Whether on that occasion the Soviet Union came close to launching a “*pre-emptive*” attack, this incident also underscores a worrying uncertainty about policy-making on the actual use of a nuclear weapon.¹³)

Risk of unauthorised acquisition

Unauthorised acquisition by non-state actors of nuclear weapons or materials necessary for their manufacture have long been a concern in the realm of nuclear terrorism, although the risks of access to the delivery systems needed for their actual use are remote. Concern has been expressed about the security environments in a number of nuclear weapons-possessing states affected by “*political instability, ineffective governance, pervasiveness of corruption, and the presence and capabilities of terrorist groups*” adding to the risk of theft or sabotage.¹⁴ Nowadays, moreover, physical access may no longer be necessary to cause a detonation event. Inadequate knowledge of the vulnerability to cyberattack of existing nuclear-weapon systems adds further cause for concern—in other words, “*digital*” risk. Cyber-attack methods, including data manipulation, digital jamming, and cyber-spoofing, could conceivably jeopardize the integrity of operational communication systems and protocols.¹⁵

Escalatory risk

The possibility that a crisis or an actual conflict involving exchanges of conventional weapons may *escalate* to nuclear weapon use is another risk pathway. An example of the potential for escalatory nuclear use emerged during the 1962 Cuban Missile Crisis. The US Navy’s tactic of signalling Soviet submarines to surface through its detonation of depth charges and hand grenades was interpreted as hostile rather than as a mere—if clumsy—warning. In one instance, the manoeuvre prompted a Soviet submarine captain to direct an officer to place on battle readiness the nuclear torpedo onboard.¹⁶

In the vein of escalation, it is worth recalling an example ostensibly of the reverse. In 2003, Russia’s Ministry of Defence reportedly elaborated a concept of *de*-escalation through limited nuclear strikes,¹⁷ that is, the use of a “*tactical*” nuclear weapon of low yield as a demonstration of strength and readiness to deploy larger nuclear weapons, if necessary, as an inducement to the enemy to withdraw or surrender, or face the ultimate consequences. In reality, the notion of a surgical strike with a nuclear weapon, however small, is a contradiction in terms, the more so, say, in the case of Russia’s invasion of Ukraine—laying waste for decades to an area of the country being invaded—an immediate neighbour—would not only be pointless but self-harming from the likely cross-border spread of radioactive fallout. Rather than *de*-escalate, such use might instead serve to *broaden* the conflict, albeit not necessarily immediately in *nuclear* terms if NATO elected first to defend Ukraine with conventional weapons. Escalation beyond that point is unthinkable.

¹⁰ E. Schlosser, *Command and Control*, 2013, p.481

¹¹ Dan Drollette Jr, *Bulletin of the Atomic Scientists*, 9 May 2023 https://thebulletin.org/premium/2023-05/introduction-near-misses-close-calls-and-early-warnings/?utm_source=Announcement&utm_medium=Email&utm_campaign=Announcement05102023&utm_content=SpecialTopics_MayMagazineIntro_05092023

¹² Seth Baum op cit

¹³ Thomas Fraise, Kjøl Egeland, *Able Archer: How close of a call was it?* *Bulletin of the Atomic Scientists*, 9 May 2023

¹⁴ E.D. Dumbacher and P. Southland, “NTI Nuclear Security Index: Building a Framework for Assurance, Accountability, and Action: Fourth Edition”, *Nuclear Threat Initiative*, September 2018, https://ntiindex.org/wpcontent/uploads/2018/08/NTI_2018-Index_FINAL.pdf

¹⁵ B. Unal and P. Lewis, *Cybersecurity of Nuclear Weapons Systems: Threats, Vulnerabilities and Consequences*, Chatham House, January 2018, p. 19

¹⁶ S.V. Savranskaya, “New Sources on the Role of Soviet Submarines in the Cuban Missile Crisis”, *Journal of Strategic Studies*, vol. 28, no. 2, 2005

¹⁷ Discussed further in K. Zysk, “Nonstrategic Nuclear Weapons in Russia’s Evolving Military Doctrine”, *Bulletin of the Atomic Scientists*, vol. 73, no. 5, 2017

Incidentally, if there were to be a growing reliance on using nuclear weapons for actual (‘tactical’) use rather than as deterrents (strategic use only),¹⁸ and as the line between conventional and nuclear weapons—and their delivery systems—blurs,¹⁹ the risks of miscalculation, miscommunication, misperception, misinterpretation, misunderstanding, mistake only increase. For instance, the determination whether an incoming missile is armed with a conventional weapon or a nuclear one (of whatever size) is scarcely a matter that can be left to chance.

Doctrinal risk

This leads to the final risk pathway, namely *doctrinal risk*. Possessors of nuclear weapons are well aware, from their own testing, of their properties and dangers. They choose to think of such weapons in strategic terms, not as instruments for actual use but as the ultimate means to deter their enemies from attacking them. They see such a stance as enabling “*strategic stability*”—the mutually-recognized absence of incentives to initiate nuclear use.²⁰ This recognizes that conventional conflict needs to be managed in a way that does not escalate to nuclear war. But in practice, do we feel any safer? The situations of Russia/Ukraine and potentially China/Taiwan come immediately to mind.

Worse, although trying to balance strategic stability is acknowledged as the primary goal, the doctrine of nuclear deterrence inherently depends on ambiguity.²¹ The objective may be to avoid the use of nuclear weapons, but that goal can only be achieved by making the prospect of their use credible,²² and their utility thus depends on this extraordinary, perhaps existential,²³ gamble. As Scott Sagan has said, quoting Schelling’s notion that deterrence relies on a threat that leaves something to chance, “*the problem with the threat that leaves something to chance is ... that it leaves something to chance*”.²⁴

Russia’s action in threatening the use of nuclear weapons to deter other states or alliances from active involvement in the conflict on non-nuclear-armed Ukraine’s side has abused the deterrence doctrine and heightened the risks inherent in it.²⁵

¹⁸ H.M. Kristensen, “The Quest for More Useable Nuclear Weapons”, in *Understanding Nuclear Weapon Risks*, UNIDIR, 2017, p. 44,

¹⁹ P. Podvig, “Blurring the Line between Nuclear and Nonnuclear Weapons: Increasing the Risk of Accidental Nuclear War?”, *Bulletin of the Atomic Scientists*, vol. 72, no. 3, 2016, pp. 145–149

²⁰ George Perkovich, *Carnegie Endowment for International Peace*, 2022.

<https://carnegieendowment.org/2022/10/12/engaging-china-on-strategic-stability-and-mutual-vulnerability-pub-88142>

²¹ Or “studied ambiguity” – see Kennedy Graham, “Nuclear War: The Shortening Odds”, *NZ International Review* Vol. XII, No. 5 pp.12-18, 1987

²² Kennedy Graham, “Nuclear War: The Shortening Odds”, *NZ International Review* Vol. XII, No. 5 (1987) pp.12-18

²³ Joan Rohlfing, “The Myth of ‘Just ‘ Nuclear Deterrence : Time to Protect Humanity from Existential Nuclear Risk », 25 April 2023

²⁴ Scott Sagan, “Unjust and Unjust Nuclear Deterrence, 25 April 2023, <https://doi.org/10.1017/S0892679423000035>

²⁵ As if placing the safety of nuclear power stations in jeopardy was not in itself worrying enough – a ‘nuclear risk’ not elaborated upon in this paper.

3. Risk and the Non-Proliferation Treaty

It is difficult to judge the precise extent to which the United States and Russia are discussing behind the scenes any of these risks in the context of Ukraine, but there are some things we know of nuclear risk as a topic of debate in the NPT.²⁶ By its very nature, nuclear risk is a matter in which all NPT Parties²⁷ have a stake including the five nuclear weapon states that are legally bound by it (the self-styled “P5”).²⁸

It should be noted that UNIDIR’s nuclear risk analysis, footnoted in this paper and in the endnote, is not new.²⁹ It was initially inspired by the realisation that risk was not only a vital topic in its own right, but also one in which all states—nuclear weapon-armed and non-nuclear weapon ones alike—shared a common interest. It might potentially therefore be a vehicle to help bring the NPT factions together. Its time has surely come.

Although the United States and the Soviet Union had explicitly addressed the risk of nuclear war *bilaterally* as far back as 1971,³⁰ it is only relatively recently that they and the three other nuclear-armed members of the ‘P5’ have been willing to respond in NPT meetings to the concerns of other states parties, concerns that have been heightened by a growing body of research on the humanitarian impacts of nuclear detonations.³¹ The members of the “P5” now openly caucus amongst themselves on nuclear risk,³² establishing a working group on risk reduction in December 2021 and affirming immediately afterwards the Reagan-Gorbachev formula that “*a nuclear war cannot be won and must never be fought*”,³³ a striking exemplar of the severity element in the risk equation. The “P5” subsequently tabled a working paper at the tenth NPT Review Conference in 2022, recognising that “*strategic risk reduction provides an opportunity to increase mutual understanding through dialogue and examine the options for additional practical measures that could reduce the likelihood of nuclear weapons use.*”³⁴

That document was one of a number of working papers tabled at the Review Conference,³⁵ and addressed specifically to risk-reduction, including one by the US on its leadership in strategic risk reduction.³⁶ Numerous working papers deal with risk as one among other major issues³⁷ that warranted urgent attention under the NPT’s nuclear-disarmament pillar.³⁸ Debate in the NPT about the range of risks surrounding nuclear weapons has clearly broadened and intensified since the adoption by the 2010 Review Conference by consensus of Action 5 under which the five nuclear weapon states committed to reduce the risk of *accidental* use of nuclear weapons.

²⁶ Nuclear Non Proliferation Treaty, 1968

²⁷ <https://treaties.unoda.org/t/npt>

²⁸ China, France, Russia, United Kingdom, United States. Incidentally, while just nine states possess nuclear weapons, these states comprise almost half the world’s population and more than one quarter of the earth’s land area. Those five states just mentioned are recognized nuclear weapon states under the NPT, while the, India, Israel, and Pakistan are not party to the NPT and the Democratic People’s Republic of Korea has withdrawn from it.

²⁹ See Christian Catrina, Daniel Frei, Risks of unintentional nuclear war, UNIDIR, 1982,

https://books.google.co.nz/books/about/Risks_of_Unintentional_Nuclear_War.html?id=j9SWCmWa1ugC&redir_esc=y

³⁰ US-USSR bilateral Agreement to Reduce the Risk of Nuclear War, 1971,

<https://treaties.un.org/doc/Publication/UNTS/Volume%20807/volume-807-I-11509-English.pdf>

³¹ E.g. OB Toon, A Robock, RP Turco, Environmental consequences of nuclear war AIP Conference Proceedings, 2014; B Unal, P Lewis, S Aghlani, Chatham House, The Humanitarian Impacts of Nuclear Testing, 2017; Understanding Nuclear Weapon Risks edited by John Borrie, Tim Caughley and Wilfred Wan, UNIDIR, 2017; Seth Baum and Anthony Barrett, A Model for the Impacts of Nuclear War, Global Catastrophic Risk Institute Working Paper 18-2, 3 April 2018; A regional nuclear conflict would compromise global food security; Jonas Jägermeyr, Alan Robock, Joshua Elliott, Cynthia Rosenzweig et al, Proceedings of the National Academy of Sciences, Edited by Christopher B. Field, Stanford University, Stanford, CA, 16 March 2020

³² NPT/CONF.2020/WP.33

³³ See Lewis Dunn, Arms Control Association, March 2020 : <https://www.armscontrol.org/act/2020-03/features/time-renew-reagan-gorbachev-principle>

³⁴ “P5” op cit

³⁵ E.g., NPT/CONF.2020/WPs. 9 Rev.1, and 60 Rev.1.

³⁶ NPT/CONF.2020/WP.55

³⁷ E.g., NPT/CONF.2020/WPs.5, 6, 7, 10, 20, and 70.

³⁸ See also Draft Final Document of 25 August 2022 NPT/CONF.2020/CRP.1/Rev.2.paras 104,120 and 129.

4. Risk Management

Ways for engaging in risk management, or risk reduction³⁹ or minimisation,⁴⁰ are many and varied. The seven principal methods are identified below.

- (a) Strict observance of the laws of armed conflict and international humanitarian law. It is sufficient to recall the view expressed in the 1996 ICJ's Advisory Opinion that the threat or use of nuclear weapons would generally be contrary to the principles and rules of international humanitarian law,⁴¹ and the ICRC's view that it is extremely doubtful that nuclear weapons could ever be used in accordance with the principles and rules of international humanitarian law.⁴² It would be a useful practical step to recognise explicitly that nuclear weapons should not be used against any target that could effectively be destroyed with conventional weapons.⁴³
- (b) Strategic risk reduction is, in effect, the expectation of the UN Charter's Article 1 setting out the purposes and principles of the United Nations.⁴⁴ In this regard, the five permanent members of the Security Council (that happen also to be nuclear armed) bear heavy responsibility for reducing strategic risks. It is incumbent on the 'P5' to demonstrate tangible results from their working group initiative.
- (c) Clear "*organisational guardrails*" (i.e. political and military checks and balances) are essential to constrain/restrain leaders and generals in the chain of command under which authorisation to use a nuclear weapon would or should be processed.⁴⁵
- (d) No first use: A number of problems arising from the lack of clarity on the circumstances in which a nuclear weapon might be deployed can be alleviated if, like China, the nuclear weapon states make unconditional commitments not to initiate a nuclear attack.⁴⁶ Confining the use of such arms to retaliation reduces the risks surrounding nuclear weapons as well as their salience—both being positive steps towards their ultimate elimination.
- (e) Transparency: Greater transparency among nuclear weapons-possessors about their individual nuclear postures, nuclear arsenals and associated military doctrines about use and threats of use would also mitigate risk.
- (f) Hot-lines between nuclear protagonists (as noted by the US in its recent NPT paper) "*create direct, secure channels for rapid communication to reduce the risk of misunderstanding in crisis situations and to reduce the risk of conflict and use of nuclear weapons*".⁴⁷ So too would crisis control centres.⁴⁸
- (g) De-alerting: Nuclear-weapon states should remove all operational nuclear weapons from high alert status to reduce the risk of a nuclear detonation by accident, miscalculation, or design.⁴⁹ While the 'P5' position stated at the NPT Review Conference in 2022 is that they "*do not target their nuclear weapons at each other or any other state's territory and will continue to support this important step towards risk reduction*",⁵⁰ the maintenance of some of those weapons on high alert continues.

³⁹ Statement submitted by the President of the International Committee of the Red Cross (ICRC), Mirjana Spoljaric, to the Preparatory Committee for the 2026 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons, 31 July 2023

<https://www.icrc.org/en/document/npt-states-parties-must-make-urgent-progress-implementing-their-obligations-and-commitments>

⁴⁰ See The Elders: <https://theelders.org/sites/default/files/newsarticledocument/The-Elders-Nuclear-Weapons-Policy-Position-Paper-July-23.pdf>

⁴¹ International Court of Justice, Legality of the Threat or Use of Nuclear Weapons, Advisory Opinion (1996)

⁴² ICRC Statement of 14 March 2022 : <https://www.icrc.org/en/document/icrc-appeals-nuclear-weapons-never-used>

⁴³ Scott Sagan, op cit

⁴⁴ United Nations Charter Article 1.1

⁴⁵ Scott Sagan, op cit

⁴⁶ NPT/CONF.2020/WP.28

⁴⁷ NPT/CONF.2020/WP.55

⁴⁸ Kennedy Graham, op cit

⁴⁹ See NPT/CONF.2020/WP.5, para 6 (f)

⁵⁰ "P5" op cit

5. Conclusions

Calculating the unthinkable may be elusive, but it is clear from the attention that nuclear risk-reduction is now receiving in many quarters that the risk of nuclear conflict is by no means inconsequential.⁵¹ If it did not exist, there would be less effort invested in its management. That effort, in itself, is encouraging.

While the risks of nuclear war cannot be calculated with the degree of precision that surrounds other global crises such as climate change, they patently cannot be ignored.

Nuclear conflict was avoided in the Cuban missile crisis, during a Cold War moment, in which conditions of stability depended largely on the relationship between the strategic force postures of just two superpowers.⁵² The actors in and around the war in Ukraine are more numerous. And a third superpower is in the wings.

Strategic risks are now more complex, strategic stability is more tenuous, outcomes are more unpredictable. Domestic political tension and electoral uncertainties within some key players adversely affect this calculus.

A nuclear-armed aggressor has overtly brandished its nuclear armaments as a means of asserting its military strength and of dissuading potential allies of Ukraine from joining militarily in that country's defence. The repercussions of any broadening of the conflict, even if nuclear weapons remained sheathed, already extend in one way or another beyond Europe—they would multiply exponentially if nuclear weapons were actually used.

The Summit of the Future proposed by UN Secretary-General António Guterres in the *'Our Common Agenda'* report calls for more effective multilateral action for peace.⁵³

Its opening recommendation under the heading "*strategic risks and geopolitical divisions*" is the elimination of nuclear weapons—"*Action 1*".⁵⁴

The Summit is not due to take place until September next year. In today's precarious security climate, that seems like a long way away.

⁵¹ See also IAEA—see [https://www.iaea.org/topics/basics-of-iaea-safeguards#:~:text=The%20objective%20of%20IAEA%20Safeguards,used%20only%20for%20peaceful%20purposes,European Union – see NPT/CONF.2020/WP.36, NATO—see \[https://www.nato.int/cps/en/natohq/official_texts_217320.htm?selectedLocale=en\]\(https://www.nato.int/cps/en/natohq/official_texts_217320.htm?selectedLocale=en\)](https://www.iaea.org/topics/basics-of-iaea-safeguards#:~:text=The%20objective%20of%20IAEA%20Safeguards,used%20only%20for%20peaceful%20purposes,European%20Union%20%E2%80%A2%20see%20NPT/CONF.2020/WP.36,NATO%E2%80%A2%20see%20https://www.nato.int/cps/en/natohq/official_texts_217320.htm?selectedLocale=en)

⁵² Kennedy Graham, op cit

⁵³ A/RES/76/307

⁵⁴ UN Common Agenda for Peace, p. 15 see: <https://www.un.org/sites/un2.un.org/files/our-common-agenda-policy-brief-new-agenda-for-peace-en.pdf>

Endnote:

To expand on a point made at the beginning of this paper, it is sobering to recall that ten years ago, a diplomatic conference held in Oslo, Norway, found that it is “*unlikely that any state or international body could address the immediate humanitarian emergency caused by a nuclear weapon detonation in an adequate manner and provide sufficient assistance to those affected*”⁵⁵.

Moreover, it might not be possible to establish such capacities, even if it were attempted⁵⁶.” A UNIDIR study, undertaken in cooperation with OCHA and UNDP, examined that Oslo finding from the point of view of the capacity of the international humanitarian cluster to provide relief in the aftermath of a nuclear weapon detonation. It concluded that such an event would be likely to be beyond the disaster preparedness of any national or international relief effort, reinforcing findings such as those of the WHO in the 1980s that the only really effective response to the public health effects of the use of nuclear weapons (let alone environmental ones) is preventing such use.

This reality helped galvanise the negotiation of the Treaty on The Prohibition of Nuclear Weapons (TPNW, 2017), the 2nd preambular paragraph of which states, as a basis of that agreement, that the negotiators were:

*“Mindful of the risks posed by the continued existence of nuclear weapons, including from any nuclear-weapon detonation by accident, miscalculation or design, and emphasizing that these risks concern the security of all humanity, and that all States share the responsibility to prevent any use of nuclear weapons”*⁵⁷.

⁵⁵ International Conference on the Humanitarian Impact of Nuclear Weapons. Oslo 24-5 March 2013. https://www.regjeringen.no/en/historical-archive/Stoltenbergs-2nd-Government/Ministry-of-Foreign-Affairs/humimpact_2013/id708603/

⁵⁶ Oslo Conference, op cit

⁵⁷ United Nations Treaty Series, vol. 3380CN.475.2017.TREATIES-XXVI-9 of 9 August 2017 (Opening for signature), CN.476.2017.TREATIES-XXVI-9 of 9 August 2017 (Issuance of Certified True Copies) and CN.478.2020.TREATIES-XXVI-9 of 26 October 2020 (Entry into Force).