

ARMS RACES AMONG THE RUINS OF TREATIES AND IMPUNITY

In this terrifyingly unique present, nuclear weapons are not only embraced but are fast becoming a form of international currency which is replacing serious diplomacy. My comments will address the successes and failures of treaties and other instruments aimed at reducing and abolishing nuclear weapons in these unprecedented times.

While not all ills are the fault of the United States, I will primarily discuss opportunities the United States misses, by design, I'm afraid, to lead the world toward serious pathways to nuclear disarmament.

The title of my talk borrows from a favorite folk song from long ago, "Race Among the Ruins" by Gordon Lightfoot. The ruins competition he describes are the travails of lost love. The ruins races I'll be discussing today are tales of Strangelove, the growing international fondness for using nuclear weapons as currency to leverage international economic and military arrangements. These Strangelove affairs are caught in the ruins of failures to curb nuclear weapons and spiced with a too-quick resort to militaristic sabre-rattling solutions instead of diplomatic ones.

I. The Ruins of Treaties

The international arms control agreements that for decades provided a level of security against nuclear conflict have been steadily eroded this century. Since 2017, the U.S. has withdrawn from the Joint Comprehensive Plan of Action¹ (aka the "Iran Nuclear Deal"), the Intermediate-Range Nuclear Forces (INF) Treaty,² and the Open Skies Treaty.³ And while the U.S. and Russia agreed to extend by another five years the Strategic Arms Reduction Treaty of 2011 (NewSTART) until February 2026, Russia announced in December 2023 that it saw no reason to

¹ <https://www.iiss.org/en/online-analysis/survival-online/2020/05/jcpoa-withdrawal-pompeo-statement/>

² <https://www.armscontrol.org/factsheets/INFtreaty>

³ <https://www.nytimes.com/2020/05/21/us/politics/trump-open-skies-treaty-arms-control.html>

re-enter negotiations because of their Russo-Ukraine war differences.⁴ The U.S. State Department presently conducts shallow efforts to re-engage Russia in extending the NewSTART weapons limitation treaty by holding press conferences but making no actual diplomatic contact with Russia.⁵

II. Impunity: A Cynical NPT Interpretation Boomerangs

And then there is the weakened Nuclear Nonproliferation Treaty (NPT). In a troubling development of the Russo-Ukraine war, the Russian government earlier in 2024 began to install tactical (“battlefield-usable” or “theater”) nuclear weapons in underground bunkers in Belarus.⁶ Whether that’s a legal move or just Vladimir Putin’s latest rogue antics depends on whether you’re persuaded by the plain wording of the Nuclear Non-Proliferation Treaty (NPT) or the United States’ suspect 55-year-old originalist interpretation of the NPT. More on that later.

U.S. nuclear weapons have been deployed in Europe against the USSR and later, Russia, since the mid-1950s, stored at North Atlantic Treaty Organization (NATO) bases throughout the Cold War. NATO officially owns no nuclear weapons, but 180 or so B-61 series bombs are maintained under U.S. Air Force guard at six airbases in five European countries, ready for loading onto member nations’ fighter-bomber planes to be dropped on targets.⁷ The bombs are supplied by the British and U.S. pursuant to Article V of the NATO Treaty.⁸ The five non-weapons countries to which these weapons are shared are Belgium, Germany, Italy, the Netherlands and Turkey. The 180 B61-10, B61-11 and B61-12 freefall bombs can be installed on fighter-bomber aircraft on short notice and used on enemy targets according to cooperatively planned missions by the air forces of the

⁴ <https://www.armscontrol.org/blog/2024-02/nuclear-disarmament-monitor>

⁵ <https://www.usnews.com/news/world/articles/2023-07-26/us-proposal-for-talks-with-russia-on-keeping-nuclear-arms-curbs-in-limbo>

⁶ <https://foreignpolicy.com/2024/03/14/russia-nuclear-weapons-belarus-putin/>

⁷ Fact Sheet: U.S. Nuclear Weapons in Europe,
<https://armscontrolcenter.org/fact-sheet-u-s-nuclear-weapons-in-europe/>

⁸ *Id.*

U.S., UK, France and the five non-weapons countries.⁹ They collectively assign targets, select the warhead yields and prepare for specific bombing runs.

NATO's nuclear war plans are seen as legal under the NATO Charter and the Nuclear Non-Proliferation Treaty only because of a U.S.-inspired ruse. To the U.S., the sharing of nuclear weapons does not occur so long as the bombs are locked up at European bases; they are shared only when they are loaded onto bombers and about to be delivered. Once loaded, the correct Permissive Action Link code is entered by U.S. soldiers, making the weapon ready for delivery and detonation. Thus control over the respective weapon moves from the U.S.,¹⁰ which is a nuclear weapon state, to the five non-nuclear weapon states. At the point where nuclear weapons are armed for use, says the U.S., the NPT is voided as having failed of its purpose and no longer restrains the use of nuclear weapons.

I suggest that this breathtaking interpretation violates both the spirit as well as the plain meaning of Articles I and II of the NPT. Those articles¹¹ appear unambiguous in stating that nuclear weapons and non-weapons states may not share, period.

The U.S. declined to publicize this interpretation of the NPT in the form of a written "reservation" during the treaty ratification going on circa 1968. Most

⁹ "Nuclear Sharing in NATO: Is It Legal?", <https://www.bits.de/public/articles/sda-05-01.htm> (Berlin Information-center for Transatlantic Security (BITS), 2001)

¹⁰ *Id.*

¹¹ Article I of the [NPT](#) says:

Each nuclear-weapon State Party to the Treaty undertakes not to transfer to any recipient whatsoever nuclear weapons or other nuclear explosive devices or control over such weapons or explosive devices directly, or indirectly; and not in any way to assist, encourage, or induce any non-nuclear-weapon State to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices, or control over such weapons or explosive devices.

And [NPT](#) Article II contains this parallel commitment by non-nuclear states parties:

Each non-nuclear weapon State Party to the Treaty undertakes not to receive the transfer from any transferor whatsoever of nuclear weapons or other nuclear explosive devices or of control over such weapons or explosive devices directly, or indirectly; not to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices; and not to seek or receive any assistance in the manufacture of nuclear weapons or other nuclear explosive devices.

countries that ratified the NPT relied on the express wording to mean what it says – no nuclear sharing – and did not learn of the U.S. opinion until after ratification.¹² The U.S. circulated its lubricious interpretation to only a few NATO members and the Soviet Union, that NATO may create new nuclear weapons states by arming its members at the threshold of war. This unique interpretation of the NPT became publicly known only during the 1968 U.S. Senate hearings to ratify the NPT, and came to notice only after the hearings were transcribed.¹³

Nowadays, even after being enshrined as the NATO operating practice for some 55 years, the U.S. reading of “sharing” is not enforceable by the UN Security Council. But as a crystallized norm for the conduct of nuclear war, the practice has rendered nuclear weapons as “tools” of deterrence, to be used when needed.¹⁴ And NATO reserves the right to use nuclear bombs to defend even against non-nuclear threats.¹⁵

III. More Impunity: ‘Thinkable’ Nuclear War

The routinization of nuclear weapons deployment in the NATO and Russian spheres reflects a longstanding belief among some war planners that nuclear war is thinkable. For instance, although the Biden administration has insisted throughout the Russian war with Ukraine that a nuclear conflict with the Russian Federation must be avoided, that view is directly contradicted by a recent U.S. policy decision to let Ukraine fire U.S.-provided rocket systems into Russia.¹⁶ But winnable nuclear war has long been within the Pentagon’s contemplation, down to the present. Its 2019 official nuclear warfighting policy, “Nuclear Operations” explains that “US nuclear forces and command and control structures are designed to

¹² See fn. 9, *supra*.

¹³ See fn. 9, *supra*.

¹⁴ “NATO 2022 Strategic Concept,” https://www.nato.int/cps/en/natohq/topics_210907.htm, p. 6 (“We will employ military and non-military tools in a proportionate, coherent and integrated way to respond to all threats to our security in the manner, timing and in the domain of our choosing.”).

¹⁵ *Id.* (“We will individually and collectively deliver the full range of forces, capabilities, plans, resources, assets and infrastructure needed for deterrence and defence, including for high-intensity, multi-domain warfighting against nuclear-armed peer-competitors.”).

¹⁶ <https://www.forbes.com/sites/davidaxe/2024/06/01/on-friday-ukraine-got-permission-to-launch-american-rockets-at-targets-inside-russia-hours-later-ukraines-himars-opened-fire/>

survive enemy attacks to convince potential aggressors that, in any scenario, sufficient US capability will remain to deliver a retaliatory strike.”¹⁷

In 2020, an advisor to the U.S. Air Force Global Strike Command said that U.S. nuclear forces should prepare to win a nuclear war over all possible opponents.¹⁸

The utilitarian perspective of nuclear weapons held by NATO and the U.S. drives another dangerous misconception of the intent behind the NPT: whether so-called “nonstrategic” or “tactical” nuclear weapons such as the 1000 B61 gravity bombs and air-launched low-yield missiles of the U.S., and the 2000 Russian “tactical” weapons are *covered by any treaty at all*.¹⁹ The NewSTART treaty, for example, would not appear to cover such weapons because it addresses intercontinental missiles with multiple high-yield warheads.²⁰ The NPT prohibits nuclear sharing, but there are differing opinions over whether the treaty bans or applies to the B61-11 and B61-12 “dial-a-yield”²¹ gravity bombs that NATO would share. The “dial-a-yield” weapons have an adjustable tamper allowing setting different blast yields. A B61-11 bomb can be set to a blast intensity of from .3 to 340 kilotons, the latter being roughly 16 times the size of the Hiroshima detonation.²²

So far the Pentagon takes the position that any nuclear weapon, regardless of its explosive yield, is “strategic” in the sense that the use of such bombs would alter the global strategic weapons equipoise.²³ But the numbers, storage and deployment locations, alert status, and security provisions for nonstrategic nuclear weapons are shrouded in uncertainty, which fuels mutual suspicions and surely

¹⁷ https://irp.fas.org/doddir/dod/jp3_72.pdf

¹⁸ <https://atloa.org/wp-content/uploads/2020/12/Guide-to-Nuclear-Deterrence-in-the-Age-of-Great-Power-Competition-Lowther.pdf>

¹⁹ “United States Nuclear Weapons, 2021,” Bulletin of the Atomic Scientists, <https://www.tandfonline.com/doi/pdf/10.1080/00963402.2020.1859865?needAccess=true>

²⁰ “U.S. Nuclear Policies for a Safer World,” Nuclear Threat Initiative, <https://www.nti.org/analysis/articles/us-nuclear-policies-safer-world/>

²¹ <https://nsarchive.gwu.edu/briefing-book/nuclear-vault/2022-03-28/natos-european-nuclear-deterrent-b61-bomb>

²² <https://nuclearweaponarchive.org/Usa/Weapons/B61.html>

²³ See fn. 20, *supra*.

could generate concerns in a crisis. Moreover, the shorter range and vulnerability of these delivery systems raises the specter of early use in a regional crisis and the potential for escalation to a large-scale nuclear exchange.²⁴

From the outset, NATO and the U.S. seriously undermined the usefulness of the NPT as a cudgel to force the world to disarm. And now, in the middle of a hot European war, Russia avails itself of that historic cynicism. The failures of treaty adherents to formally revise the thrust of the NPT to meet the times means that the NPT provides no comfort at the very moment when it is most needed to bar nuclear war.

So, are Russia and Belarus violating the NPT's bar to sharing nuclear bombs? The trouble with the question is that the answer doesn't matter. The *de facto* circumstance controls. That's impunity.

IV. Nonenforcement of Key U.S. Nuclear Proliferation Curb

Israel is presently violating, and has for at least 47 years actively violated, a U.S. federal law which flatly prohibits the provision of U.S. military assistance to a nation that possesses nuclear weapons but refuses to sign the NPT.

Israel is believed to possess from 90²⁵ to 200²⁶ nuclear warheads and is capable of delivering a nuclear blast from 4000 miles away.²⁷ Israel acquired its weapons wholly outside of international legal controls. Its rogue nuclear weapons state status is of grave concern as it prosecutes a genocidal war in the Gaza Strip, with the Benjamin Netanyahu administration openly considering invasion of Lebanon. Official secrecy about Israel's nuclear program and ambitions has suppressed much about Israel Defense Force policies and controls on the use of nuclear weapons, as well as the types and yields of the weapons themselves.

²⁴ *Id.*

²⁵ <https://thebulletin.org/premium/2022-01/nuclear-notebook-israeli-nuclear-weapons-2022/#post-heading>

²⁶ <https://www.armscontrol.org/factsheets/nuclear-weapons-who-has-what-glance>

²⁷ <https://thebulletin.org/premium/2022-01/nuclear-notebook-israeli-nuclear-weapons-2022/#post-heading>

In 1976 Congress passed the Arms Export Control Act, which prohibited U.S. military aid to any country which had not signed the NPT and was acquiring equipment and materials for a nuclear weapons program. This “Symington Amendment” nevertheless left a loophole for the President to provide foreign military aid to violators upon certifying in writing to Congress that the termination of assistance would seriously affect vital U.S. interests.

In 1977, Senator John Glenn expressed concern that Israel was stealing and diverting U.S. government-owned weapons-grade uranium from a U.S. government contractor for its own nuclear weapons program at Dimona in Israel.²⁸ Senator Glenn successfully pushed Congress to enact the “Nuclear Enrichment And Reprocessing Transfers; Nuclear Detonations Act.” This toughened the Symington prohibition by making the aid cutoff mandatory if a country refusing to sign the NPT either “receives a nuclear explosive device, or . . . detonates a nuclear explosive device . . .” 22 U.S.C. § 2799aa-1(b)(1)(B).

Despite Israel’s having maintained a continuous nuclear weapons program since the 1950’s, there has never been a legal finding to that effect made by any U.S. President. Nonetheless, Israel has staged at least one nuclear test explosion and has “received” nuclear weapons, and either event is enough to trigger a cutoff so complete that an act of Congress is required to override it. The evidence of Israel’s nuclear ambitions is enormous.

The Central Intelligence Agency pronounced in a “Special National Intelligence Estimate” in 1960 that Israel “will produce some weapon-grade plutonium in 1963-1964, and possibly as early as 1962.”²⁹

In 1964, Israel purchased 80-100 tons of yellowcake from Argentina as the Lyndon Johnson administration tried unsuccessfully to head off the sale.³⁰ The yellowcake – processed uranium ore – fueled Israel’s new nuclear reactor at Dimona, in the Negev Desert, to produce plutonium for weapons.³¹ Israel began to

²⁸ <https://nsarchive.gwu.edu/document/22164-29-briefing-senator-john-glenn-democrat-ohio>

²⁹ <https://nsarchive2.gwu.edu/nukevault/ebb510/docs/doc%208.pdf>

³⁰ <https://foreignpolicy.com/2013/07/02/israels-secret-uranium-buy/>

³¹ <https://www.wilsoncenter.org/publication/israels-quest-for-yellowcake-the-secret-argent>

create plutonium for bomb-making at Dimona in 1966 and was building bombs by the time of the 1967 Six-Day War.³²

In 1968 the CIA concluded that some 100 kg of highly-enriched uranium (HEU) had been diverted from the Nuclear Materials and Equipment Corporation (NUMEC) in Apollo, Pennsylvania to the Dimona reactor complex in Israel to be used in nuclear weapons.³³ A chemical signature retrieved by the U.S. matched the signature of HEU created at a Department of Energy enrichment plant in Piketon, Ohio. This theft propelled Senator Glenn's push for the aforementioned legislation to terminate U.S. military aid to any country not complying with the NPT.

Also in 1968, Israel secretly purchased and diverted 200 tons of natural uranium from West Germany in what came to be known as the Plumbat Affair.³⁴ The European Atomic Energy Commission (EURATOM) approved the sale based on misleading statements that the uranium was bound for an Italian chemical company. The cargo was secretly transferred by Israel's Mossad spies at sea to an Israeli freighter.

U.S. Secretary of State Henry Kissinger kept Israel's nuclear weapons a secret in the late 1960s by concealing Israel's intention to purchase U.S. warplanes that could be fitted to drop nuclear bombs. On July 16, 1969, Kissinger sent a memo to President Richard Nixon outlining Israel's policy of "nuclear ambiguity," neither confirming nor denying that Israel has nuclear bombs, a policy that continues to the present.³⁵ Kissinger warned Nixon that by declining the sale, "we will be the ones to make Israel's possession of nuclear weapons public with all the international consequences this entails."

A 1974 CIA "Special National Intelligence Estimate"³⁶ concluded "that Israel already has produced and stockpiled a small number of fission weapons."

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³² <https://nsarchive.gwu.edu/briefing-book/nuclear-vault/2020-11-10/duplicity-deception-self-deception-israel-united-states-dimona-inspections-1964-65>

³³ <https://www.nrc.gov/docs/ML1112/ML11124A063.pdf>

³⁴ https://en.wikipedia.org/wiki/Operation_Plumbat

³⁵ https://www.nixonlibrary.gov/sites/default/files/virtuallibrary/documents/mr/071969_israel.pdf

³⁶ <https://nsarchive2.gwu.edu/NSAEBB/NSAEBB240/snief.pdf>

In 1976, the CIA estimated Israel had 10-20 nuclear bombs.³⁷

On September 22, 1979 an American satellite detected the “double flash” of a joint Israeli-South Africa nuclear test³⁸ in the Atlantic Ocean. The CIA found a “90% plus” probability that Israel had caused a “nuclear explosion in the atmosphere”³⁹ jointly with South Africa.⁴⁰

In the 1980’s, before he was Israel’s Prime Minister, Benjamin Netanyahu himself allegedly was directly involved in an Israeli international smuggling ring that resulted in the theft of 800 nuclear weapons trigger components from a U.S. firm.⁴¹ The Israeli Ministry of Defense used a network of front companies to smuggle 15 shipments totaling 800 krytron switching devices out of the U.S. to Israel from 1979-1983. Benjamin Netanyahu was specifically identified by federal investigators as one of the smugglers.⁴²

In 1986, Israel prosecuted Mordechai Vanunu, a former technician at the Dimona nuclear complex, for treason because he had provided information about Israel’s weapons program to a British newspaper. This fueled speculation that Israel had sufficient material for 150 two-stage thermonuclear bombs.⁴³

A 1987 Pentagon update on Israel's nuclear weapons program revealed that “The SOREQ and the Dimona/Beer Shiva facilities are the equivalent of our Los

³⁷ <https://archive.org/details/islamicbombnu00weis>

³⁸ <https://nsarchive.gwu.edu/document/19606-national-security-archive-doc-5-jerry-oplinger>

³⁹ https://books.google.com/books?id=z0RwEAAAQBAJ&pg=PA456&lpg=PA456&dq=%E2%80%9Csignals+were+consistent+with+detection+of+a+nuclear+explosion+in+the+atmosphere%E2%80%9D&source=bl&ots=sHNwgVWj5N&sig=ACfU3U2Fhl1rNN_p3yOgx7z1F0yVXqyfQ&hl=en&sa=X&ved=2ahUKEwjBxeTmrWGAXVH6ckDHcnOBRYQ6AF6BAGIEAM#v=onepage&q=%E2%80%9Csignals%20were%20consistent%20with%20detection%20of%20a%20nuclear%20explosion%20in%20the%20atmosphere%E2%80%9D&f=false

⁴⁰ <https://thebulletin.org/2015/09/flash-from-the-past-why-an-apparent-israeli-nuclear-test-in-1979-matters-today/>

⁴¹ <https://original.antiwar.com/smith-grant/2012/07/03/netanyahu-worked-inside-nuclear-smuggling-ring/>

⁴² https://www.israellobby.org/krytons/06272012_milco_mdr.pdf

⁴³ <https://nuke.fas.org/guide/israel/barnaby.pdf>

Alamos, Lawrence Livermore and Oak Ridge National Laboratories” and that they provided “the technology base required for nuclear weapons design and fabrication.”⁴⁴

In December 2006, Israel’s then-prime minister Ehud Olmert compromised the nuclear ambiguity deception when he criticized Iran for aspiring “to have nuclear weapons, as America, France, Israel, Russia.”⁴⁵

In 2010, the U.S. Bureau of Industry and Security (BIS) charged the U.S.-based Tology LLC with violating U.S. Export Administration Regulations (EAR) for delivering 22 oscilloscopes to Israel.⁴⁶ Oscilloscopes graph electrical signals and can be used in nuclear weapons systems. Then on April 30, 2012, the BIS outed the California company Mattson for selling pressure transducers to Israel.⁴⁷ Transducers measure the gas pressure inside centrifuge cascades which enrich uranium for nuclear weapons.

Former speaker of the Israeli Knesset Avraham Burg broke Israel’s nuclear ambiguity taboo in 2014 when he exposed Israeli possession of both nuclear and chemical weapons and described the official nuclear secrecy policy as “outdated and childish.”⁴⁸

Last November 4, 2023, Amichay Eliyahu, Israel’s minister of heritage, said that dropping a nuclear bomb on Gaza was “one way” of dealing with the threat from Hamas.⁴⁹ No one from the Israeli government has contradicted Eliyahu’s statement that Israel possesses nuclear weapons.

⁴⁴ https://www.irmep.org/cfp/dod/071987_ctaiann.pdf

⁴⁵ <https://www.nbcnews.com/id/wbna12342829>

⁴⁶ <https://isis-online.org/isis-reports/detail/u.s.-company-faces-penalties-for-alleged-nuclear-export-attempts-to-india-i/35>

⁴⁷ <https://isis-online.org/isis-reports/detail/case-study-u.s.-company-charged-with-pressure-transducer-sa%20les-who-were-the/>

⁴⁸ <https://www.timesofisrael.com/avraham-burg-panned-for-breaking-nuclear-ambiguity/>

⁴⁹ <https://www.timesofisrael.com/far-right-minister-says-nuking-gaza-an-option-pm-suspends-him-from-cabinet-meetings/>

Israel's militaristic foreign relations during the Gaza genocide suggests that there is a heightened potential it might use nuclear weapons. Israel undoubtedly has targeted Tehran for nuclear attack.⁵⁰ In May 2023, Prime Minister Netanyahu assessed that "95 percent of Israel's security problems come from Iran."⁵¹

The evidence is enormous that Israel has been a rogue nuclear weapons state for at least 60 years and in the Palestinian crisis, there is growing worry that those arms might be used. There hasn't been adequate recognition of the scale and nature of the threat. Just this week, Israeli Prime Minister Benjamin Netanyahu "pledged full victory" and that "At any cost and in any way, we will thwart Iran's intentions to destroy us."⁵²

Israel society is unstable, with frequent mass demonstrations over the possibilities of negotiation and return of the 120 hostages still held by Hamas. There is continued bitterness over Prime Minister Benjamin Netanyahu's successful campaign to degrade the country's court system, which directly undermines the rule of law. The continuing genocidal invasion of Gaza has not produced a comprehensive defeat of Hamas and now there is serious talk of a "limited" invasion of Lebanon by Israel, which could begin within days.⁵³ The Israel Defense Force is exhausted by months of fighting. The economy is under strain because of the terminations from employment of thousands of Palestinians in Israel and because of so many citizen-soldiers called away from civilian jobs.⁵⁴ There is growing international treatment of Israel as a pariah. If Israel invades Lebanon and things don't go well militarily, the possible use of nuclear weapons against Lebanon and Hezbollah may become an option. The Bulletin of the Atomic Scientists, in setting the "Doomsday Clock" at 90 seconds to midnight, maintains that the war in Gaza "has the potential to escalate into a wider Middle Eastern

⁵⁰ <https://apnews.com/article/3109382e1a894c13b5a014a23a743fd>

⁵¹ <https://iranprimer.usip.org/blog/2023/jan/25/israel-iran-threat-options>

⁵² <https://www.jpost.com/breaking-news/article-807542>

⁵³ <https://www.axios.com/2024/06/25/us-warned-hezbollah-israel-escalation>;
<https://www.aljazeera.com/news/2024/6/19/attacks-rhetoric-israel-hezbollah-could-plunge-lebanon-war>

⁵⁴ https://www.nytimes.com/2024/06/10/opinion/israel-economy-gaza.html?unlocked_article_code=1.2U0.ATEe.S5C9puQAH4ON&smid=url-share

conflict that could pose unpredictable threats, regionally and globally.”⁵⁵ Add to these worrying facts, the U.S. officially denies the May 2024 International Court of Justice finding of likely genocide and the orders to halt combat in part of Gaza. And the U.S. actively supports the creation of obstructions to the prosecution of Israeli leaders in the International Criminal Court.⁵⁶

Domestic American politics are preventing President Biden from invoking the option of using Israel’s noncompliance with the Nuclear Nonproliferation Treaty to curb its military ambitions. U.S. support of Israel’s nuclear arms impunity disqualifies the United States from resuscitating reviving legal norms in order to avert grave disaster. The outcome of such disrespect for the rule of law may be breathtakingly tragic.

V. The Return of Nuclear Arms Races With China and Russia

Throughout much of the 21st century and particularly since about 2020, China has been engaged in a dramatic expansion of its nuclear weapons production capacity at least in part as a response to U.S. nuclear dominance. China plans to have 700 strategic nuclear warheads by 2027 and 1,000 by 2030.⁵⁷

Recurring Russian allusions to its nuclear prowess during the Russo-Ukraine war have been troubling.⁵⁸ A few months ago, Russia demonstrated its ability to successfully destroy in-space satellites,⁵⁹ an ominous message of warfighting capability on a new plane.

⁵⁵ <https://thebulletin.org/doomsday-clock/current-time/>

⁵⁶ <https://www.aljazeera.com/news/2024/5/21/no-equivalence-biden-defends-israel-after-icc-requests-arrest-warrants>

⁵⁷ <https://www.armscontrol.org/act/2021-12/news/pentagon-sees-faster-chinese-nuclear-expansion>

⁵⁸ <https://apnews.com/article/russia-ukraine-war-putin-nuclear-weapons-82ced2419d93ae733161b56fd9b477d>

⁵⁹ <https://armscontrolcenter.org/reports-of-russia-building-nuclear-space-weapons-have-alarm>

[ed-officials-but-security-experts-arent-panicked-yet/](https://armscontrolcenter.org/reports-of-russia-building-nuclear-space-weapons-have-alarm-ed-officials-but-security-experts-arent-panicked-yet/)

China, Russia and the U.S. are all preparing to resume more intrusive nuclear weapons tests. All three have been modernizing and expanding their nuclear weapons testing infrastructure, adding new buildings, cutting new roads and boring new tunnels in recent years.

At Lop Nur in northwest China, more than 30 buildings have been added or renovated at the main support base since 2017. The Chinese have also drilled new vertical shafts capable of hosting larger nuclear tests than the older horizontal tunnel network.⁶⁰

Russia's Novaya Zemlya test site is on an archipelago in the Arctic Ocean. New construction includes new tunnel entrances drilled into the side of a mountain range there, near where many tests took place from 1955 to 1990. Construction was recently completed on the largest facility on the base, alongside support facilities and new roads.⁶¹

The U.S. is building an underground laboratory at the Nevada National Security Site to conduct subcritical tests, which are experiments that use explosives on components of a weapon but fall short of triggering a nuclear chain reaction.⁶²

VI. Next-Generation Reactors Are Proliferation Machines

And then there is the burgeoning globalized new reactor industry that has taken hold over the past decade. Dozens of so-called “small modular reactors,” also called “advanced reactors,” are being designed and marketed in multiple countries. SMRs range from less than 10 megawatts electric (MWe) up to 300 MWe and can use a range of possible coolants including light water, liquid metal or molten salt, depending on the technology. They all use nuclear fission reactions to generate

⁶⁰ https://www.nytimes.com/interactive/2023/12/20/science/china-nuclear-tests-lop-nur.html?unlocked_article_code=1.2U0.Hlr6.USYh5REHtQJ3&smid=url-share

⁶¹ “Where the World Plans to Test Nuclear Weapons Next,” https://www.nytimes.com/2024/06/20/opinion/nyt-nuclear-testing.html?unlocked_article_code=1.2E0.PbJr.3CMEZS5c-jzW&smid=url-share

⁶² *Id.*

heat that can be used directly or for generating electricity. Globally, there are more than 80 SMR designs at different stages of development across 18 countries.⁶³

SMRs are hawked as climate chaos saviors which supposedly comprise a “carbon-free” option to fossil fuels (which they aren’t). Because of their somewhat small size, they’re pushed as appropriate backup power generators for modern “smart” electric grids when mixed with commercial wind and solar. The problem, however, is that many of the designs are nuclear weapons proliferation factories. The National Academies of Science have expressed doubts concerning oversight and containment of the proliferation potential of some of the most popular technologies under consideration.⁶⁴

In response to growing pressure to amend the Atomic Energy Act to allow U.S. companies to compete globally in an industry projected to grow domestically to \$295 billion 2043,⁶⁵ on June 18, 2024 Congress passed the “Accelerating Deployment of Versatile, Advanced Nuclear for Clean Energy” (ADVANCE) Act. This sweeping new statute is a sharp departure from 50 years of U.S. nuclear power regulation where public safety and health were the mission priority. Congress just mandated that within one year the U.S. Nuclear Regulatory Commission in licensing decisions must not “unnecessarily limit (1) the civilian use of radioactive materials and deployment of nuclear energy; or (2) the benefits of civilian use of radioactive materials and nuclear energy technology to society.”⁶⁶ The ADVANCE Act also eases restrictions on export transfers and sales of nuclear technology to expand global sales of SMRs⁶⁷ in what appears to be a *de facto* reversal of Section 123 (42 U.S.C. §2153 *et seq.*) of the Atomic Energy Act.

Globalization of SMRs will bring what these nuclear weapons proliferation machines within the reach of authoritarians and autocratic governmental leaders.

⁶³ https://energy.ec.europa.eu/topics/nuclear-energy/small-modular-reactors/small-modular-reactors-explained_en

⁶⁴ Merits and Viability of Different Nuclear Fuel Cycles and Technology Options and the Waste Aspects of Advanced Nuclear Reactors, Chapter 9 (National Academies of Sciences, Engineering, and Medicine. 2023), <https://nap.nationalacademies.org/read/26500/chapter/9>

⁶⁵ <https://www.idtechex.com/en/research-report/nuclear-small-modular-reactors-smrs-2023-2043/934>

⁶⁶ <https://www.congress.gov/bill/118th-congress/senate-bill/870/text> (Section 501).

⁶⁷ *Id.* Section 101 *et seq.*

Saudi Arabia's prince bin Salman has expressed his intention that Saudi Arabia will develop an "Arab bomb" if he believes Iran is also building weapons.⁶⁸ Saudi Arabia is close to completion of an experimental reactor and is considering having a Korean firm build its first SMR.⁶⁹ The United Arab Emirates, another authoritarian state, has a four-unit reactor complex nearing completion, totaling 5.6 GWe. Unit 1 of the complex, at Barakah, was connected to the grid in August 2020, followed by unit 2 in September 2021 and unit 3 in October 2022.⁷⁰ SMRs are not just technological experiments, but experiments in whether the Nonproliferation Treaty or impunity will determine future nuclear warfighting.

VII. Conclusions

This discussion is an attempt to survey some of the prominent weaknesses and concerns, from an international law perspective, that follow from humanity's embrace of nuclear weapons and their raw material producers, nuclear power plants. We must move quickly from problem identification to the speediest possible resolution of figurative if not literal explosions of atomic controversies.

In making that transition, it is well to remember several things.

- 1) In order to secure signatures and ratifications of the NPT and the 2021 Treaty on the Prohibition of Nuclear Weapons (TPNW),⁷¹ it has been necessary to preserve each individual nation's "right" to develop nuclear power.
- 2) Nuclear weapons nonproliferation is not the same as disarmament. In 1996, the International Court of Justice issued a much-heralded advisory opinion mandating all nations to work immediately toward

⁶⁸ <https://www.reuters.com/article/us-saudi-iran-nuclear/saudi-crown-prince-says-will-develop-nuclear-bomb-if-iran-does-cbs-tv-idUSKCN1GR1MN>

⁶⁹ <https://www.neimagazine.com/news/newssaudi-arabia-to-use-domestic-uranium-for-nuclear-development-10529986>

⁷⁰ <https://world-nuclear.org/information-library/country-profiles/countries-t-z/united-arab-emirates.aspx>

⁷¹ <https://disarmament.unoda.org/wmd/nuclear/tpnw/>

complete abolition of nuclear weapons,⁷² yet abolition remains almost completely absent from mainstream policymaking and there has been no progress in disarmament for the past decade amid many formal U.S. retreats. To some extent, the North American philanthropic community has censored, by not financially supporting, advocates for genuine disarmament who advance abolition proposals to improve the Nonproliferation Treaty. This is called “peace washing.”⁷³

- 3) The view of the U.S. military and the State Department has become entrenched in the perception that nuclear arms treaties are pointless since, supposedly, Russia will cheat and China won’t come to the bargaining table. Russia’s and China’s growing nuclear weapons arsenals are used to justify the rapid and expensive “modernization” of the US nuclear weapons complex. Historic nuclear arms agreements – the Anti-Ballistic Missile Treaty, the Intermediate-range Nuclear Forces Treaty, and the Iran nuclear deal – have been allowed to wither away. Presently, there is astonishing U.S. naivete and arrogance about the genuine prospects of nuclear war posed by Russia and Israel. The war industry’s suggestion in this growing void that more and better less-regulated nuclear power plant systems, nuclear weapons and nuclear weapons delivery systems are lawful and acceptable is not just false, but suicidal.
- 4) There are ways⁷⁴ to move the world away from these dangerous myths of nuclear conflict and toward serious discussions about disarmament.

⁷² 1996 Advisory Opinion of the International Court of Justice, which enjoined all signatories that NPT’s Article VI requirement to negotiate nuclear disarmament in good faith “goes beyond that of a mere obligation of conduct; the obligation involved here is an obligation to achieve a precise result, nuclear disarmament in all its aspects by adopting a particular course of conduct, namely, the pursuit of negotiations on the matter in good faith.”

<https://www.law.umich.edu/facultyhome/drwcasebook/Documents/Documents/Advisory%20Opinion,%201996%20I.C.J.%20226.pdf> at p. 32.

⁷³ “Peace-Washing: Is a Network of Major Donors Neutralizing Activism in the Peace Movement?”

<https://www.salon.com/2021/06/02/peace-washing-is-a-network-of-major-donors-neutralizing-activism-in-the-peace-movement/>

⁷⁴ <https://www.ucsusa.org/nuclear-weapons/solutions>

There are stopgaps to disarmament, such as recommitment to the abrogated treaties and commitment to a “no-first-use” policy by all nuclear countries. Certainly invoking the Glenn Amendment to cut off Israel’s weapons welfare account at the Pentagon would send a message that there are consequences to pursuit of rogue nuclear weapons efforts. Just diplomatically conversing - “jaw, jaw is better than war, war,” as Harold Macmillan put it – seems an innovation in the current political environment.

But we have to start somewhere, immediately. As Gordon Lightfoot put it in the final couplet of “Race Among the Ruins,” “If you plan to face tomorrow/Do it soon.”

A LITTLE MORE LIGHT READING AND LISTENING

1. Current analysis (April 2024) of status of Iran’s uranium enrichment program since U.S. revocation of its participation in the six-nation Joint Comprehensive Plan of Action

<https://theconversation.com/an-israeli-attack-on-irans-nuclear-weapons-programme-is-unlikely-heres-why-228049>

2. Veterans for Peace Nuclear Posture Review (January 2022), a thoughtful set of alternatives to the persistent global slump toward World War III

<https://vfpgoldenruleproject.org/wp-content/uploads/2022/01/FINAL-VFPNuclearReview-Jan2022.pdf>

3. The Nation, “The Nuclear Explosion that Makes U.S. Aid to Israel Illegal,”

<https://www.thenation.com/article/world/israel-nuclear-weapons/>

4. Greg Mello, Los Alamos Study Group, presentation, 6/20/2024, many insights into nuclear disarmament versus nonproliferation

https://www.lasg.org/presentations/VFP-No-Nukes-Webinar_20Jun2024.pdf