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“The Department of Defense, Chemical and Biological Defense, 2017 Annual Report to Congress” Published by the Department of Defense; May 25 2017

<https://fas.org/irp/threat/cbw/cbd-2017.pdf>

The U.S. Department of Defense (DoD) Chemical and Biological Defense Program (CBDP) Enterprise develops and acquires capabilities that allow the Joint Force to deter, prevent, protect against, mitigate, respond to, and recover from chemical, biological, and radiological (CBR) threats and effects within a layered and integrated defense. The CBDP Enterprise conducts the planning, prioritization, and management of the research, development, test, and evaluation (RDT&E); acquisition; and supporting infrastructure activities (physical and intellectual) necessary to support Joint Force operations in a CBR environment and in support of countering weapons of mass destruction (CWMD). Rapid advancements in technology are making it easier for an adversary, whether State or non-State, to develop chemical and biological (CB) weapons. This includes threats from non-State actor groups such as the Islamic State of Iraq and Syria (ISIS) and emerging threats like the misuse of synthetic biology.

The DoD CBDP 2017 Annual Report to Congress provides the required assessment pursuant to section 1523, title 50, United States Code, which assesses DoD’s overall readiness to fight and win in a CB warfare environment. The DoD faces CB threats that are complex, diverse, and pose enduring risks to the Joint Force, the homeland, and U.S. allies and partners. The Fiscal Year (FY) 2016 investment positively impacted the readiness of the Joint Force as it relates to the CB defense posture through equipping the force, preventing surprise, maintaining infrastructure, and leading the Enterprise. The CBDP fielded 20 systems totaling 386,970 products and 721,210 vaccine doses (anthrax and smallpox) in FY 2016, made significant advancements in RDT&E activities, and supported Joint Urgent Operational Needs Statements (JUONS). In FY 2016, the CBDP continued to provide support around the world to reduce chemical weapon threats and made significant advancements in science and technology (S&T) to help reduce the risk of surprise to the Joint Force. The CBDP continues to maintain infrastructure through the maintenance of physical and intellectual infrastructure capabilities and training and education activities. Finally, the CBDP continues to lead the Enterprise through processes like the Enterprise Review and through challenges including the biological select agents and toxins (BSAT) moratorium. Highlighted within this report are some of the many FY 2016 accomplishments of the CBDP, resulting in a greater readiness of the Joint Force.

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The New York Times (New York, NY)

Trump, Who Pledged To Overhaul Nuclear Arsenal, Now Faces Increased Costs

By James Glanz and David Sanger

June 4, 2017

When President Barack Obama's term ended in January, he left a momentous decision to the Trump administration: whether to continue a 30-year, \$1 trillion program to remake America's atomic weapons, as well as its bombers, submarines and land-based missiles.

Mr. Trump has pledged to overhaul the arsenal, which he has called obsolete. But his challenge is growing: The first official government estimate of the project, prepared by the Congressional Budget Office and due to be published in the coming weeks, will put the cost at more than \$1.2 trillion — 20 percent more than the figure envisioned by the Obama administration.

The Trump White House's proposed budget calls for big increases in research and development for new weapons, but it does not yet grapple with the ultimate budget-busting cost of producing a new fleet of delivery vehicles. The Obama administration left the hard budgetary choices for the next administration, and it is unclear whether Mr. Trump's administration can stomach the rising cost.

"This is why there is no real five-year plan for the defense budget," said Representative Adam Smith, Democrat of Washington and a member of the House Armed Services Committee, who has asked whether the United States needs all of the 1,550 nuclear weapons it can deploy under a 2010 treaty with Russia. "No one wants to face these numbers."

The new estimate, which was obtained by The New York Times, offers a hard look at what it would take to remake an aging nuclear weapons complex that is vulnerable to cyberattack. While Mr. Obama once talked about eliminating such weapons over a period of decades, Mr. Trump has a different view. In December, he wrote on Twitter that the United States "must greatly strengthen and expand its nuclear capability."

The Obama administration program envisioned a nuclear arms buildup unseen since the Reagan administration, with all the resonance of a re-emerging cold war. On the table is the development of a new long-range, nuclear-tipped cruise missile that Mr. Obama's Defense Department embraced but that some leading nuclear strategists consider unnecessary and potentially destabilizing.

While few question the need for a major update to the nation's nuclear infrastructure — there are B-52 bombers now being maintained or flown by the grandchildren of their original crew members — the United States is facing a bill so large that the Trump administration has yet to fully figure it into its budget projections.

"It's a staggering estimate," said Andrew C. Weber, an assistant defense secretary in the Obama administration and a former director of the Nuclear Weapons Council, an interagency body that oversees the nation's arsenal.

Mr. Weber said that when he was in the government, he advised against developing the cruise missile because of the cost and because he believed it could fuel a new arms race.

At the heart of the debate is the future of America's relationship with Russia. With Mr. Trump fighting accusations that his associates might have colluded with Russian officials during the election, administration officials acknowledge that it is almost impossible to imagine a new round of arms control negotiations that might ease the need for a major buildup. The Russians are still building, and the United States has accused Moscow of violating an intermediate-range missile treaty, forcing Washington to develop a response.

But also on the table are other revived nuclear weapons, all under the control of the Energy Department, as well as the really big-ticket military items: a stealthy nuclear bomber to replace the B-52 and B-1 bombers, and a fleet of new, silent submarines. Most controversial are plans to overhaul the oldest and most vulnerable part of the American nuclear complex: the Minuteman missiles that are buried in silos across the Midwest and West. The Pentagon conceded last year that the missiles are so antiquated that they are still run on eight-inch floppy computer disks.

Upgrading the missiles would be among the most expensive parts of a Trump military buildup, and critics say it is time to give them up.

"There are ways to save money for the country that do not in any way put us at risk," said Tom Z. Collina, director of policy for Ploughshares Fund, an independent organization that favors nuclear arms control, "because many elements of this program are excessive, redundant and dangerous."

Mr. Collina called the budget office estimate "very credible" and consistent with earlier calculations of the program's cost.

As Mr. Obama's initiative becomes Mr. Trump's, "there is going to be a backlash coming," particularly among Democrats who had supported the program, said Jon B. Wolfsthal, who oversaw nuclear issues in the Obama White House. He spoke at a May 23 debate on the topic organized by the Center for Strategic and International Studies in Washington.

Other nuclear experts argue that the perils of stopping short of a complete upgrade far outweigh the costs. "This is something that we've got to decide it's time for us to invest, and we've got to get moving," C. Robert Kehler, a retired Air Force general and a former commander of the United States Strategic Command, said at the same event.

A refurbishment of a warhead carried by American bombers, called the B-61, is nearing production, but most of the programs that the Obama administration put in place remain largely in the development phase. The much larger costs of producing the weapons and delivery systems would not come until 2020 or 2021.

The steep rise in costs in the coming years will almost certainly force Congress to choose which programs are the most important for the military, Mr. Weber said. "What's clear is you save more money by eliminating programs than by buying fewer of something," he said.

Critics have questioned the need not only for the nuclear-tipped cruise missile, but also for the development of a set of “interoperable warheads” that could be fired from intercontinental ballistic missiles or from submarine-launched missiles. The effective lifetime of those weapons could be extended without producing the interoperable version, the critics say.

Others, like William J. Perry, a defense secretary under President Bill Clinton, have urged a wider redesign of the nuclear deterrent. Mr. Perry has called for eliminating one leg of the “nuclear triad,” which consists of nuclear delivery systems on land, in the air and under the sea. He has argued that the United States would still be safe and save billions of dollars without the intercontinental missiles.

“We simply do not need to rebuild all of the weapons we had during the cold war,” Mr. Perry wrote recently in a Ploughshares publication.

By contrast, Mr. Kehler argued that the triad should be maintained because it posed almost insurmountable problems for any adversary. “In the 21st century, unfortunately, these weapons still exist,” he said, “and, in my humble opinion, are going to exist in the world for as far into the future as we can see.”

<https://www.nytimes.com/2017/06/04/us/politics/trump-nuclear-weapons-cost-estimate.html? r=0>

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US News & World Report (Washington, DC)

Panel Poses Questions on Plutonium Risks at Los Alamos Lab

By Susan Bryan

June 7, 2017

The chairman of an independent federal oversight panel says many of the safety systems in place at Los Alamos National Laboratory's plutonium facility date to the late 1970s.

Many of the safety systems in place at a federal laboratory in New Mexico where key components of nuclear weapons are developed date to the late 1970s and will likely need to be upgraded to meet future demands, an official with an independent oversight panel said Wednesday.

Sean Sullivan, chairman of the Defense Nuclear Facilities Safety Board, made the comments at the start of an hours-long public hearing focused on the risks of plutonium work conducted at Los Alamos National Laboratory.

Los Alamos, the birthplace of the atomic bomb, restarted development last year of plutonium cores used to trigger the explosion in nuclear weapons. The U.S. Energy Department wants to ramp up production.

The plutonium facility has drawn the attention of the board and other oversight agencies for safety issues and problems with the aging building's seismic stability and fire system.

The board in a letter sent in January to Energy Department officials said there were significant questions remaining about the suitability of the facility for long-term operations. More concerns were raised in April after a fire inside the concrete building resulted in minor injuries.

On Wednesday, board staff members mentioned the failure of diesel pumps that are part of the fire suppression system.

"Many of the facility safety systems relied upon to protect the public are of original vintage. They do not employ modern technology and have been prone to failure," Sullivan said.

He acknowledged that personnel at the plutonium facility have identified deficiencies, but resolution of the issues depends on uncertain federal funding and have often been deferred.

Officials with the National Nuclear Security Administration told the panel that Los Alamos has made substantial upgrades in recent years, including structural changes to protect against a natural disaster such as an earthquake.

Major construction projects aimed at boosting the reliability and safety of plutonium operations at Los Alamos amount to an investment of about \$3 billion, said James McConnell, NNSA associate administrator for safety, infrastructure, and operations.

Over the past four years, an additional \$350 million has been spent on maintenance and smaller projects to improve safety and infrastructure. An additional \$95 million will be spent in the coming year on the fire system, ventilation and other upgrades, officials said.

"The safety and security of the workforce, our facilities and the public remain our top priority," McConnell said.

Scrutiny of operations at Los Alamos intensified in 2014, when a container of waste left over from decades of bomb-making was inappropriately packed at the lab and shipped to the federal government's only underground nuclear waste repository, where it later ruptured.

The resulting radiation release at the Waste Isolation Pilot Plant in New Mexico forced its closure for nearly three years and disrupted the federal government's multibillion-dollar cleanup program. The incident led to policy and management overhauls and an expensive settlement with the state.

<https://www.usnews.com/news/best-states/new-mexico/articles/2017-06-07/public-hearing-to-focus-on-los-alamos-labs-plutonium-work>

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Union of Concerned Scientists (Washington, DC)

The Ugly: Post #3 on the NNSA's FY2018 Budget Request

By Stephen Young

June 7, 2017

On Tuesday, May 23, the Trump administration released its Fiscal Year 2018 (FY2018) budget request. I am doing a three-part analysis of the National Nuclear Security Administration's budget. That agency, a part of the Department of Energy, is responsible for developing and maintaining US nuclear weapons. Previously we focused on The Good and The Bad, and today we have The Ugly.

The Ugly

NNSA's "New" Warhead a Sign of Things to Come?

The NNSA's FY2018 budget request includes what might seem to be a relatively innocuous statement:

"In February 2017, DOD and NNSA representatives agreed to use the term "IW1" rather than "W78/88-1 LEP" to reflect that IW1 replaces capability rather than extending the life of current stockpile systems."

In other words, rather than extending the life of the W78 and W88 warheads via a life extension program (or LEP), the NNSA will develop the IW1 to “replace” those warheads.

To my mind, that is an admission that the IW1—short for Interoperable Warhead One—is a new nuclear weapon, as UCS has been saying for quite some time.

The Obama administration was loath to admit as much, arguing that the proposed system—combining a primary based on one from an existing warhead and a secondary from another warhead—was not a “new” warhead. That reluctance stemmed from the administration’s declaration in its 2010 Nuclear Posture Review (NPR) that the United States would not develop new nuclear warheads or new military capabilities or new missions for nuclear weapons. Declaring the IW1 a new warhead would destroy that pledge.

That semantic sleight of hand by the Obama team was somewhat ugly: the IW1 is a new warhead. (For a lot more detail on the IW1 and the misguided “3+2 plan” of which it is part, see our report *Bad Math on New Nuclear Weapons*.)

However, what might be coming from the Trump administration is truly ugly.

The fact that the FY2018 NNSA budget admits the IW1 is a new warhead may be signal that the Trump team—which is doing its own NPR—will eliminate the Obama pledge not to develop new weapons or pursue new military capabilities and missions.

That change would send a clear message to the rest of the world that the United States believes it needs new types of nuclear weapons and new nuclear capabilities for its security. This would further damage the Nuclear Non-Proliferation Treaty (NPT), which is already fraying because the weapon states are not living up to their commitment to eliminate their nuclear weapons. Deep frustration on the part of the non-nuclear weapon states has led to the current negotiations on a treaty to ban nuclear weapons. New US weapons could also damage our efforts to halt North Korea’s nuclear program and undermine the agreement with Iran that has massively reduced their program to produce fissile materials for nuclear weapons.

Moreover, a likely corollary of withdrawing that pledge would be to pursue a new type of nuclear weapon, or a new capability. Some options have already been suggested:

The Defense Science Board recommended developing weapons with “lower-yield, primary-only options” (because the B61 bomb and the air-launched cruise missile already have low-yield options, this was presumably for missile warheads, though the report does not specify).

The author of the Obama NPR—Jim Miller—and Admiral Sandy Winnefeld (USN, retired) have proposed reviving the submarine-launched nuclear-armed cruise missile that was retired in the Obama NPR.

Those options are contrary to US security interests. Nuclear weapons are the only threat to the survival of the United States. Given that, and because there will not be a winner in a nuclear war, the US goal must be to reduce the role that these weapons play in security policy until they no longer are a threat to our survival. Continuing to invest in new types of nuclear weapons convinces the rest of the world that the United States will never give up its nuclear weapons, and encourages other nuclear-weapon states to respond in ways that will continue to threaten the United States.

Make no mistake, the United States already has incredibly powerful and reliable nuclear weapons that would deter any nuclear attack on it or its allies, and it will for the foreseeable future.

So the idea that the United States should pursue new types of weapons? That is truly ugly.

<http://allthingsnuclear.org/syoung/the-ugly-post-3-of-the-nnsas-fy2018-budget-request>

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Scout.com (Minnetonka, MN)

Air Force Reviews Vendor Bids to Build New ICBMs Engineered With High-Tech Upgrades

By Kris Osborn

June 7, 2017

Air Force plans to build at least 400 new high-tech ICBMs intended to preserve millions of lives by ensuring annihilation of anyone choosing to launch a nuclear attack. The idea is to prevent major power wars.

Air Force officials say the service will award some contracts as part of its ongoing evaluation of formal proposals from three vendors competing to build hundreds of new, next-generation Intercontinental Ballistic Missiles designed to protect the US homeland well into the 2070s and beyond, service officials said.

Submissions from Northrop, Boeing and Lockheed are now being reviewed by Air Force weapons developers looking to modernize the US land-based nuclear missile arsenal and replace the 1970s-era Boeing-built Minuteman IIIs. Service officials told Scout Warrior a contract award is expected later this year.

The new effort to build ICBMs, what the Air Force calls "Ground Based Strategic Deterrence," aims to construct durable, high-tech nuclear-armed missiles able to serve until 2075.

The new weapons will be engineered with improved guidance technology, boosters, flight systems and command and control systems, compared to the existing Minuteman III missiles. The weapon will also have upgraded circuitry and be built with a mind to long-term maintenance and sustainability.

"Solid rocket fuel ages out after a period of time. You need to have an upgraded guidance package for sustainability and warfighting requirements. Looking at the current technology, it has moved faster than when these were first developed. Civilian industry has leapfrogged so we want the ability to use components that have already been developed," Lt. Gen. Jack Weinstein, Deputy Chief of Staff for Strategic Deterrence and Nuclear Integration, said in an interview with Scout Warrior several months ago.

Do Nuclear Weapons Save Lives? Philosophical Context

If one were to passively reflect upon the seemingly limitless explosive power to instantly destroy, vaporize or incinerate cities, countries and massive swaths of territory or people -- images of quiet, flowing green meadows, peaceful celebratory gatherings or melodious sounds of chirping birds might not immediately come to mind.

After all, lethal destructive weaponry does not, by any means, appear to be synonymous with peace, tranquility and collective happiness. However, it is precisely the prospect of massive violence which engenders the possibility of peace. Nuclear weapons therefore, in some unambiguous sense, can be

interpreted as being the antithesis of themselves; simply put – potential for mass violence creates peace – thus the conceptual thrust of nuclear deterrence.

It is within this conceptual framework, designed to save millions of lives, prevent major great-power war and ensure the safety of entire populations, that the U.S. Air Force is now vigorously pursuing a new arsenal of land-fired, Inter-Continental Ballistic Missiles, or ICBMs

Weinstein cited famous nuclear strategist Bernard Brodie as a way to articulate the seismic shift in thinking and tactics made manifest by the emergence of nuclear weapons.

Considered to be among the key architects of strategic nuclear deterrence, and referred to by many as an “American Clausewitz,” Brodie expressed how the advent of the nuclear era changes the paradigm regarding the broadly configured role or purpose of weaponry in war.

Weinstein referred to Brodie’s famous quote from his 1940s work “The Absolute Weapon: Atomic Power and World Order.” --- “Thus far the chief purpose of our military establishment has been to win wars. From now on, its chief purpose must be to avert them. It can have almost no other useful purpose.”

The success of this strategy hinges upon the near certainty of total annihilation, should nuclear weapons be used. ICBMs are engineered to fly through space on a total flight of about 30 mins before detonating with enormous destructive power upon targets.

“If another nation believes they can have an advantage by using a nuclear weapon, that is really dangerous. What you want to do is have such a strong deterrent force that any desire to attack with nuclear weapons will easily be outweighed by the response they get from the other side. That’s the value of what the deterrent force provides,” Weinstein said in an exclusive interview with Scout Warrior.

Although Weinstein did not take a position on the prior administration's considerations about having the U.S. adopt a No First Use, or NFU, nuclear weapons policy, Air Force Secretary Deborah James has expressed concern about the possibility, in a news report published by Defense News. Limiting the U.S. scope of deterrence, many argue, might wrongly encourage potential adversaries to think they could succeed with a limited first nuclear strike of some kind.

Ground-Based Strategic Deterrence

It is within the context of these ideas, informing military decision-makers for decades now, that the Air Force is in the early stages of building, acquiring and deploying a higher-tech replacement for the existing arsenal of Minuteman III ICBMs.

Weinstein pointed out that, since the dawn of the nuclear age decades ago, there has not been a catastrophic major power war on the scale of WWI or WWII.

“When you look at the amount of people who died in WWI and then the number of people who died in WWII, you're talking about anywhere between 65 and 75 million people. WWI killed about 1.8 percent of the world's population. WWII killed 2.8 percent of the world's population. “What you want is to have a really strong capability so that they're used every day to prevent conflict. If you use one, then you've failed,” Weinstein said.

Weinstein added that, in total, as many as 45 million people died during WWII.

“All you need to do is look at pictures of what Dresden looked like and what Stalingrad looked like. These are major powers fighting major powers,” he said.

Nevertheless, despite clear evidence in favor of deploying nuclear weapons, modernizing the US arsenal has long been a cost concern and strategic liability for US strategic planners. In fact,

Weinstein said there is concern that both Russian and Chinese nuclear arsenals are now more modern and advanced than existing U.S. Minuteman IIIs.

Citing a Congressional Research Service report, a story in National Defense Magazine says the GBSD the program is expected to cost \$62 billion from 2015 through fiscal year 2044. That breaks down to about \$14 billion for upgrades to command-and-control systems and launch centers, and \$48.5 billion for new missiles, the report says.

In keeping with the NEW START Treaty, the US plans to field 400 new missiles designed to replace the aging 1960s-era Minuteman IIIs.

The new ICBMs will be deployed roughly within the same geographical expanse in which the current weapons are stationed. In total, dispersed areas across three different sites span 33,600 miles, including missiles in Cheyenne, Wyoming, Minot, North Dakota and Great Falls, Montana.

"If you look at the ICBM field, it's 33,600 square miles. That's how big it is. We sometimes say it's the size of the state of Georgia. It was developed that way for a specific reason. You didn't want them too close together. You wanted it so if the adversary were to attack at one time, you'd still have ones that would survive," Weinstein explained.

Nuclear Deterrence

Earlier this year, the commander of U.S. Strategic Command, Air Force Gen. John E. Hyten, said the United States has about the right numbers of nuclear weapons, but they need to be modernized.

A Pentagon statement said the General asked reporters to imagine what the world was like in the six years preceding the atomic bombings of Hiroshima and Nagasaki. "In those six years, the world in conflict killed somewhere between 60 million and 80 million people," he said. "That's about 33,000 people a day, a million people a month."

The world has seen bloody conflicts -- Korea, Vietnam, Desert Storm, Enduring Freedom and Iraqi Freedom were awful, but nowhere near the level of carnage the world had experienced, he said.

"The submarines are the most survivable element of it; the ICBMs are the most ready; the bombers are the most flexible," he said. "When you put those pieces together, it gives our nation the ability to withstand any attack and respond if we are attacked, which means we won't be attacked."

<http://www.scout.com/military/warrior/story/1693945-af-new-icbms-will-get-upgraded-guidance-tech>

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Washington Examiner (Washington, DC)

Top Admiral on US Missile Defense: 'We Are Not There Yet'

By Jamie McIntyre

June 7, 2017

The three-star admiral who heads America's missile defense program said despite last month's successful test against a mock North Korean warhead, U.S. missile defense technology is not yet mature.

"We are not there yet," Vice Adm. Jim Syring, director of the Missile Defense Agency, told a House subcommittee Wednesday.

Syring testified that the U.S. is racing to stay ahead of the threat posed by North Korea, which continues to test and improve its nuclear weapon and missile capabilities.

"I would not say we are comfortably ahead of the threat, I would say we are addressing the threat that we know today," Syring said. "It is incumbent upon us to assume that North Korea today can range the United States with an ICBM carrying a nuclear warhead. Everything we are doing plans for that contingency."

Syring said the performance of the Ground-Based Midcourse system's radars and interceptors have improved dramatically over the past six years, and that the May 30 test was the most realistic to date.

"The scenario we conducted was actually an exact replica of the scenario that this country would face if North Korea were to fire a ballistic missile against the United States," he said.

Syring said the trajectory of the target was exactly the same as a missile fired from the Korean peninsula, and that in a real world attack, the U.S. would fire multiple interceptors to increase the chance of destroying the incoming warhead in space.

"What message it sends to North Korea I have no idea, but I know what message it sends to the American people, that we can defend them 24 hours a day, seven days a week," he said.

<http://www.washingtonexaminer.com/top-admiral-on-us-missile-defense-we-are-not-there-yet/article/2625272>

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Quartz.com (New York, NY)

New York's Plan for Nuclear Fallout is Basically "Duck And Cover"

By Annalisa Merelli

June 4, 2017

In April, a rumor spread that 600,000 people were evacuated from Pyongyang, the capital of North Korea, because they wouldn't all be able to fit in the city's network of bomb shelters in case of an attack. That report was later debunked, but rising tensions between North Korea and the US have a lot of people on edge. North Korea's series of recent missile tests are unlikely to help matters.

The latest ballistic missile fired by North Korea is believed to have fallen in the ocean, within Japan's exclusive economic zone. Relatedly, in March, Japan ran its first evacuation drill designed for the possibility of a North Korean missile attack. With these reminders of some kind of nuclear threats, and the doomsday clock the closest to midnight it's been in decades, it seems fair to wonder how safe would American cities be, in such scenario?

We looked at New York—because it's the most densely populated, and it is, after all, the only city in America to ever have suffered an aerial attack (not counting Pearl Harbor in 1941). Sure, climate change will probably kill New Yorkers before a nuclear explosion does. But still, should the city follow Hawaii's (or Japan's) lead in updating fallout shelters?

There isn't much of a plan

It's important, first of all, to talk about where nuclear fallout is most likely to come from. While American children growing up during the Cold War were warned they could be attacked at any

minute by a foreign bomb or ballistic missile, this is not a risk, at least for the time being. Despite North Korea's propaganda, America's mainland—and, likely, even Hawaii—is still far away from the reach of a nuclear missile.

That said, New Yorkers could face nuclear exposure from two other sources: A terror attack utilizing a low-yield radioactive device, or a radiation leak following an accident in one of the plants somewhere near the city. (Just as an example, on May 9, a tunnel collapsed in a plutonium finishing plant in Hanford, Washington. According to news reports, it was full of highly contaminated nuclear waste. Though luckily no one was harmed, workers were instructed to take cover, ensure the ventilation was working in buildings, and “refrain from eating and drinking.”)

The latter scenario is the least dangerous, for a number of reasons. Brooke Buddemeier, a certified health physicist (also known as a radiation safety specialist) at the Lawrence Livermore National Laboratory, tells Quartz that due to the workings of nuclear plants, accidental explosions within the plants are not actually nuclear and are very small in comparison to a nuclear bomb explosion. In the unlikely event of an accident, most of the radioactive material would be contained by the reactor containment itself, limiting the damage to structures and people in the immediate vicinity of the plant. Further, any radioactive plant leak would likely take some time and release radioactive material at much slower rates than an explosion, allowing for an evacuation of the area to prevent or reduce exposures to the public.

A bomb is different. If an improvised nuclear device were to go off in New York City, Buddemeier said, we'd be “looking at a low-yield explosive going off at ground level.” The explosive power of such a device could be of a magnitude comparable to the bombs of Hiroshima and Nagasaki, and the dangers would be twofold: The immediate explosion, and the radioactive fallout.

When it comes to the explosion, the danger (at least in terms of dying from the explosion itself, or developing acute radiation sickness) would decline drastically after the first half mile, remaining serious for anyone standing within the first mile of the blast, then somewhat concerning for those within three miles of the explosion.

The fallout—or the radioactive debris that would fall from the sky following an explosion—would cover an area between 10 to 20 miles, with the so-called “hot zone” covering up to 100 miles.

Gone are the days when New York's “busy millions” were involved in city-wide drills: The city's Emergency Management department said today it's much safer to simply find the closest building and stay indoors rather than looking for a designated fallout shelter.

On the site PlanNowNYC, New York maintains lists of possible disasters—including biological attacks, dirty bombs, and cyber attacks—and gives advice on how to handle them. For a radioactive attack, the official government suggestion is again to stay indoors, remove possibly contaminated clothes, take a warm shower, and don't use conditioner (it can bind radioactive particles to your hair protein).

In case of any kind of radioactive attack, “New Yorkers should immediately take shelter in the center or basement of any nearby building. Expect to stay there until instructed to leave by emergency personnel,” a New York City spokesperson wrote to Quartz in an email.

But is that enough of a plan? And how many people can actually fit in basements and building halls, anyway?

Stay inside, and wait

“An east coast city like New York offers some good protection,” says Buddemeier. “[The key] is getting into the nearest solid structure and staying indoors.” Examples of structures that provide

good protection are basements, multistory buildings, and underground areas including parking garages or subways.

The degree of protection offered by a building depends on its size, the material it's built with, and where one stands in it. Basements (particularly corners) are generally the best bets, or the center of a tall concrete building. Taking shelter in the center of a tall concrete building would cut the potential radiation exposure from a dirty bomb down by a factor of 1,000 to 10,000, according to calculations from the Lawrence Livermore National Laboratory. But even sheltering in a one story wooden house would cut radiation exposure down by a factor of 10.

People who are outside at the time of the explosion should seek the nearest, most effective shelter—but getting indoors sooner is more important than finding the perfect protection. Similarly, those who are indoors should just stay there, and wait: Even a few hours will significantly reduce the radiation intensity.

“Radiation is one of the gifts that keeps on giving,” explains Buddemeier. But while some level of radiation could be detectable in the area of an explosion for years to come, its intensity would be drastically reduced after the first day. Within the first hour, radiation is cut in half, and loses 80% of its power after the first day, so protecting oneself during this initial period of time should hopefully reduce the risk of acute radiation sickness.

Reducing exposure as soon and as drastically as possible, Buddemeier says, will also help stave off the long-term effects of radiation, such as cancer or genetic mutations. Drinking water and eating food is OK, he says, and though “you don't want to go out and start harvesting fresh vegetables.” Food that is stored indoors can be consumed and “if you need to wash off or are thirsty, by all means, get water.” While bottled is preferable, even the water in the city system would do in a pinch.

Importantly, these safety and emergency measures actually apply to a nuclear explosion of any kind—even a much more powerful one: The difference of course would be the size of the prompt impact zone, and how far downwind people would need to find shelter in order to avoid significant fallout exposure

<https://qz.com/979520/heres-new-york-citys-sort-of-plan-for-the-nuclear-apocalypse/>

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The Washington Free Beacon (Washington, DC)

Nuclear Defense Experts Urge Revitalization of U.S. Ballistic Missile Programs

By Nic Rowan

June 7, 2017

Former senator Jon Kyl: Current non-proliferation treaties between Russia, U.S. ineffective for threat reduction

Nuclear defense experts called for a bipartisan effort to revitalize the U.S. ballistic missile programs at this year's nuclear posture review in a report discussed at the Center for Strategic and International Studies on Tuesday.

The report, "A New Nuclear Review for a New Age," reassessed the United States's relation with its primary nuclear adversaries—China, North Korea, and Russia—and urged lawmakers to increase defense spending on ballistic missile development and testing.

Former senator Jon Kyl (R., Ariz.) said the new administration should invest in the modernization of nuclear defense programs to deter other nations from posing a nuclear threat to the country. According to Kyl, current non-proliferation treaties between Russia and the United States are ineffective for threat reduction.

"A [nuclear posture review] must take into account the possibility of other nations cheating. Its assumptions cannot rest on unenforceable promises. Rather than Ronald Reagan's 'trust, but verify,' our 2017 position should be 'don't trust, but modernize,'" he said.

Russia has not historically honored its nuclear treaties with the United States. The country stands in violation of the 1987 Intermediate-Range Nuclear Forces Treaty and the Presidential Nuclear Initiatives of 1991-1992. Additionally, Russia's invasion of Crimea and Ukraine in 2014 makes the nation a greater threat than it was in the first decade of the 21st century.

"As opposed to a Russian federation that is at least a quasi-ally that is a partner of sorts, we now have a Russian federation that seeks to recover its post-Soviet space, engaging in hybrid warfare, changing the borders in Europe for the first time since the second world war, engaging in a pretty robust nuclear buildup and in nuclear first-use threats repeatedly," Keith B. Payne, the study's director and president of the National Institute for Public Policy, said.

Because of Russia's increased aggressiveness, Payne advised that the United States rethink its post-war nuclear policy of nonproliferation and focus instead on rebuilding its arsenal.

"We need a re-prioritization back to the classic goals deterrence, extended deterrence, damage limitation, and assuring allies," he said.

According to the study, the United States's policy of nonproliferation does not correlate with nuclear disarmament in other countries. Since the last nuclear posture review in 2010, only the United Kingdom has reduced its supply of ballistic missiles in keeping with international agreements. China and North Korea, meanwhile, have conducted an increasing number of ICBM tests since then.

The Hudson Group's Rebecca L. Heinrichs said that the increased aggressiveness of China, North Korea, and Russia coupled with the a growing Middle Eastern ballistic missile presence made possible by the Iran nuclear deal has caused countries around the world to stockpile.

"It's a new missile era. Ballistic missiles are not just improving in the quality and the types of platforms that we're seeing but the sheer numbers of global missile proliferation," she said.

<http://freebeacon.com/national-security/nuclear-defense-experts-urge-revitalization-u-s-ballistic-missile-programs/>

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Equities.com (Culver City, CA)

US Nuclear (UCLE) at LD Micro Today: Radiation Detecting Drones

Author Not Attributed

June 6, 2017

The LD Micro Invitational Conference kicked off yesterday, with Equities.com CEO Enzo Villani giving a keynote address and discussing our new flat monthly rate trading platform. 100 microcap companies will be making 30-minutes presentations throughout today, with another 70 companies slotted for tomorrow.

We've been following a company presenting later this afternoon called US Nuclear Corp (UCLE) that manufactures advanced radiation detection instrumentation. The most recent product development is DroneRad - the incorporation of radiation and chemical sensors with drone mounted platforms to serve a variety of industries. The company has a strategic partnership with FlyCam UAV, announced last fall, that incorporates FlyCam UAV's Cypher 6, a commercial-grade hexacopter, and The NEO, an all-weather commercial co-axial octocopter, with US Nuclear Corp's DroneRad aerial radiation detection system.

DroneRad detects particles that contain alpha, beta, gamma and neutron radiation. A gas collection option tests for the presence of chlorine, biological particulates, and aerosols such as anthrax and nerve gas, making DroneRad suitable for radiological, chemical and biological detection missions. Future upgrades to the DroneSensor package will detect methane and diesel fumes. It provides a comprehensive package that flies in all-weather, heavy winds, and with a heavy payload. This provides the opportunity to fly multiple sensors at one time with real-time wireless download.

US Nuclear reported revenues of \$725,000 in Q1 2017, a 187% increase year-over-year, with gross profit of \$355,000 and net income of \$91,000. The company, headquartered in Canoga Park, California, opened a new office in Beijing during Q1. CEO Robert Goldstein stated, "Technicians and product support specialists for our new office in China completed factory training earlier this year. We have already begun to see an increase in business in China as we are now able to communicate directly and more efficiently and offer local service/support to our customers."

Mr. Goldstein is a physicist and an award winning specialist in the nuclear radiation detection industry with more than 40 years of experience in the field. He works closely in ongoing joint development programs with Los Alamos National Lab and Jefferson National Lab. An innovator and inventor, his experience in the field of radiation measurement, detection, and monitoring includes design and development of instrumentation for air, water and surface applications. Miniature radiation detectors for use during surgery are just a sample of his many inventions and innovative designs. He graduated from MIT with a BS in Physics and has an MS in Engineering from Stanford.

The stock trades very thinly (11,300 shares over the past month) on the Pink Open Market segment of the OTC Market - which is going to leave it vulnerable to big swings like today - but it is fully reporting and current with the SEC. We've reviewed the recent 10-K for 2016 and 10-Q for the first quarter of 2017, and we see a company growing revenue and expanding to the key Chinese market that is burdened with the discount often associated with non-exchange-listed stocks. Investors who can tolerate the volatility and illiquidity may wish to follow this company along with us.

<https://www.equities.com/news/us-nuclear-ucle-at-ld-micro-today-radiation-detecting-drones>

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R&D Magazine (Rockaway, NJ)

Overcoming the Trust Barrier in Nuclear Weapons Verification Measurements

By Sandia National Laboratories

June 6, 2017

Trust but verify. The catchphrase for arms control popularized by President Ronald Reagan sounds simple. However, verification involving sensitive data is a very complex endeavor.

Verifying that a nuclear warhead actually is a warhead may include confirming key attributes. But the act of confirming certain technical attributes might reveal critical design information — closely

guarded national secrets for any country. Confirming these attributes will likely require overcoming the hurdle of protecting sensitive design data.

Sandia National Laboratories physicist Peter Marleau has developed a new method for verifying warhead attributes. Called CONFIDANTE, for CONFIRMATION using a Fast-neutron Imaging Detector with Anti-image Null-positive Time Encoding, the method could help address the problem of conducting verification measurements while simultaneously protecting sensitive design information. CONFIDANTE provides middle ground for the warhead owner, or host, who wants to protect sensitive information, and the monitor, who may be seeking to verify that sensitive information to confirm the inspected item is a warhead.

“CONFIDANTE is an implementation of a zero-knowledge proof (ZKP) as a way to demonstrate the validity of a claim while providing no further information beyond the claim itself,” explained Marleau. “Unlike other ZKP confirmation methods, which rely on a measuring instrument that has been pre-loaded with sensitive information, CONFIDANTE allows the monitoring party to conduct the measurement in real time without accessing sensitive design data.”

Overcoming the trust barrier with ZKP

About three years ago, the Department of Energy’s Princeton Plasma Physics Laboratory and Princeton University developed a ZKP object-comparison system to potentially support warhead confirmation while protecting sensitive design data. In mathematical cryptography, ZKP is accomplished by challenging a host to solve a problem that is only possible if the host possesses the information being authenticated. After repeated challenges, the host can prove it possesses that information without revealing any details about the information itself.

In the Princeton group’s ZKP implementation, confirmation that an alleged warhead has the characteristics of a warhead is demonstrated through neutron transmission and emission counts measured by an array of radiation detectors. To protect sensitive design data during the measurement process, the Princeton method prepares the radiation detectors with a template rather than directly comparing in real time the images of a warhead being verified with a trusted warhead.

The template is the complement of the measurement expected from a real warhead. If the two match, they cancel each other out leaving only statistical noise, yielding no further information. The “templates” are effectively destroyed by the measurement, so the monitor does not have the opportunity to maintain the data to which a measurement is compared.

“But to protect the sensitive design data, the template, the process of pre-loading it, and the detector itself, will be off limits to the monitoring party,” said Marleau. “All of this, including the actual measurement must be conducted by the host. When the monitoring party loses control of so much of the measurement process, it becomes difficult to trust its authenticity.”

Monitor-controlled, real-time authentication

Marleau, his colleague Patricia Schuster, a University of Michigan postdoctoral fellow, and Rebecca Krentz-Wee, a University of California, Berkeley, nuclear engineering graduate student, set out to solve this problem. “We asked ourselves, is there a method that maintains the nice property of a positive match indicated only by statistical noise while allowing a monitoring party to be in control of the detector during the entire measurement process?” said Marleau.

They explored different concepts that might provide more practical and verifiable ZKP implementations. One promising solution is time-encoded imaging (TEI), a method Sandia developed over the past five years with funding from the National Nuclear Security

Administration's Defense Nuclear Nonproliferation Research and Development program, based on earlier research funded by the Laboratory Directed Research and Development program.

TEI is a new approach for indirect detection and localization of special nuclear materials, which relies on encoding directional information in the time-dependent modulation of fast neutron detection rates. Sandia developed TEI to overcome the precise calibration and high cost of typical detection, which uses arrays of detectors.

TEI uses a single detector within a cylindrical coded mask. As the mask rotates, radiation from the object is modulated by a pattern of apertures and mask elements on the cylinder. Using TEI, a single detector can do the work of multiple detectors in creating an entire two-dimensional image of the object.

"We realized that if we designed the mask such that the pattern on one half of the cylinder is the inverse of the other half, an object on one side of the system will project the inverse image of an object on the opposite side of the system at all times if and only if the two objects are identical. The image and anti-image will effectively cancel each other out and the detector will show a constant unmodulated rate," said Marleau. "And we can do it without ever recording potentially sensitive information."

Because no information other than statistical noise is stored or recorded in the detector — unlike a template approach — the host party in theory can certify that no sensitive information is at risk. The monitor then can have full access to the data in real time, potentially even conducting the measurement themselves. Using this method, two objects can be confirmed as identical. To prove in addition that they are warheads, both negotiating parties would need to agree on an authentic warhead — a "golden" warhead to be compared to any other object measured. This authenticity then transfers to all objects that have been or ever will be measured.

Extra layer of protection

One possible glitch is that if the two objects aren't aligned perfectly, the measurement could reveal spatial information. "A slight misalignment could reveal outlines," said Marleau.

For the verification measurement, the monitoring party only needs to confirm that the detector is measuring a constant rate consistent with statistical noise.

"You can define specific metrics that can be updated in real time and can tell the monitoring party if the data is consistent with counting statistics," said Marleau.

Distilling the data into a single number is also irreversible—meaning there is no way to reverse engineer the data to learn design characteristics of the warhead being verified even if something happened, such as accidental misalignment, that produced a false negative result.

First proof-of-concept

The Department of State, Bureau of Arms Control Verification and Compliance (AVC) through the Key Verification Assets Fund funded Sandia to perform a proof-of-concept measurement.

CONFIDANTE was tested at Lawrence Livermore National Laboratory using identical plutonium dioxide hemispheres. "We knew these two objects were identical going into the test," said Marleau. "CONFIDANTE confirmed this with unmodulated counting statistics. We also did a successful negative test showing that two different objects did not cancel each other out."

This test demonstrated feasibility so now the Sandia team plans to improve CONFIDANTE with a more compact gamma ray version of the imager. Marleau also hopes to perform another feasibility test at the Pantex Plant, a Department of Energy facility for assembly and disassembly of nuclear weapons.

"It's critical that we continue to develop and operationally evaluate CONFIDANTE and other warhead authentication methods," said Marleau. "These tools need to be ready to go before there is an exercise or a treaty being negotiated. At that point, there is little time for research and development. I believe CONFIDANTE has the potential to open new possibilities in treaty verification. With technical solutions in place, parties may be more willing to engage in negotiations."

<https://www.rdmag.com/news/2017/06/overcoming-trust-barrier-nuclear-weapons-verification-measurements>

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Washington Examiner (Washington, DC)

The Hypersonic Threat That Keeps US Commanders Up at Night

By Jamie McIntyre

June 5, 2017

It travels at more than five times the speed of sound, more than a mile per second, below U.S. missile defenses. It can carry conventional or nuclear weapons, able to reach anywhere in the world in three hours or less, and both China and Russia are developing them, as is the U.S.

The scary weapon of the near future is what's known as a hypersonic glide vehicle, sometimes called a "wave rider," because its aerodynamics allow the winged projectile to skip along the atmosphere, or glide on a smooth, flat trajectory after being launched via missile.

And the description most applied to them by U.S. military commanders is "game changer."

"Hypersonic glide vehicles are threats both Russia and China are building now," said Gen. John Hyten, head of U.S. Strategic Command, in recent testimony before the Senate. "They are very, very significant in terms of our ability to see them and provide warning."

Hyten, who oversees the U.S. nuclear arsenal and is responsible for providing the president with options in the event of nuclear war, is concerned about the ability of the unpowered gliders to deliver nuclear weapons, with little time for a considered response.

But since Russia already has an arsenal of nuclear-tipped ICBMs sufficient to obliterate the U.S., hypersonic gliders don't actually tip the "balance of terror," experts say.

"I would argue in the case of Russia, very long-range nuclear-armed gliders would actually just reinforce the status quo, would not create a new threat," said James Acton, senior fellow with the Carnegie Endowment for International Peace.

"As scary as that sounds, Russia already has the ability to annihilate the United States with nuclear weapons, and there is nothing we can do about that."

But non-nuclear hypersonic gliders could give adversaries such as China or Russia, who now don't match up well against America's high-tech military, a way to level the playing field.

Adm. Harry Harris, head of U.S. Pacific Command, also worries about the threat hypersonic weapons would pose to ships that might have only minutes to respond to a lightning-quick strike from an adversary.

"I'm concerned about Chinese and Russian hypersonic weapons development, and I expressed those concerns in the right places," Harris told Congress last month.

"What we can do is to develop our own hypersonic weapons and improve our defenses against theirs," Harris told a House subcommittee before cautioning that a more detailed discussion of the threat would require a closed session.

The U.S. is in fact developing not just hypersonic weapons but also systems to counter them.

The Trump administration, in its fiscal 2018 budget submission to Congress last month, requested \$75 million for "hypersonic defense" as part of \$7.9 billion overall funding plan for missile defenses.

But critics in Congress complain that's a mere \$379 million over last year's request from former President Barack Obama and well below the annual \$9 billion funding level planned by the Bush administration.

"These weapons present an entirely new capability we must counter as they are specifically designed to exploit the gaps and the seams in our existing missile defense architecture, thus defeating the systems we currently have in place," said Rep. Trent Franks, R-Ariz, on the floor of the House in March.

Franks, a member of the House Armed Services Committee, is concerned the threat from high-speed maneuvering weapons is figuratively flying below the radar.

"The threat has outpaced us," Franks said. "These new weapons are capable of traveling more than a mile per second and fly at flat or nonballistic trajectories to prevent our missile defense systems from tracking them."

So far most of the U.S. effort to develop a remarkably fast weapons platform has been in the research phase.

The Pentagon's Defense Advanced Research Projects Agency just green-lighted advanced design work for Boeing's XS-1 experimental space plane, which DARPA calls "an entirely new class of hypersonic aircraft that would bolster national security by providing short-notice, low-cost access to space."

Lockheed Martin's fabled Skunk Works is working on an unmanned version of the legendary SR-71 Blackbird, which would fly at speeds up to Mach 6, or six times the speed of sound, and could be operational by 2030 at a cost of about \$1 billion, according to the company.

The idea is that the SR-72, dubbed "Son of Blackbird," would fly so fast that an adversary would have no time to react or hide.

"Hypersonic aircraft, coupled with hypersonic missiles, could penetrate denied airspace and strike at nearly any location across a continent in less than an hour," said Brad Leland, Lockheed Martin hypersonics program manager, in a promotional blurb on the company's website.

"Speed is the next aviation advancement to counter emerging threats in the next several decades. The technology would be a game changer in theater, similar to how stealth is changing the battle space today."

The Pentagon is also focused on countering that game-changing dynamic, and one possibility would be to meet incoming hypersonic missiles with a fusillade of outgoing hypersonic artillery, such as the U.S. Navy's electromagnetic rail gun, a Mach 6 cannon that the Navy claims can hit targets more than 100 miles away with pinpoint accuracy.

And when it comes to protecting ships at sea, naval forces already equipped with missile defenses may have an advantage because eventually any hypersonic weapon targeting the ship comes in range of defensive systems, said Bryan Clark, senior fellow with the Center for Strategic and Budgetary Assessments.

"The fact that the hypersonic weapon is going Mach 5 or beyond is somewhat mitigated by the fact that it has to eventually arrive at your location," Clark told a congressional committee in March.

"So, some of these missile defense capabilities that might be very difficult to use in defense of somebody else are somewhat effective when you're dealing with you getting shot at yourself," he said.

Still, Clark said, sometimes the best defense is a good offense.

"If we're worried about the threat coming from Russia or China, there's no reason why we wouldn't be able to develop our own hypersonic threat, whether it's air-launched or potentially even surface-launched, ship-launched," Clark said.

But Acton, who wrote *Silver Bullet?*, a 2013 book on hypersonic weapons, argues the threat is still at least a decade away.

"I would say where we are with gliders is about where we were with cyber weapons, 20 or 25 years ago, Acton said. "People were starting to understand there was a threat there, and it took the threat a while to emerge, but that threat did emerge and it became very significant."

Acton said cyber warfare will likely be a much bigger game changer for years to come.

"I very much doubt gliders will have as big implications for international security as cyber weapons, but it's at that stage where multiple countries are engaged in their development."

<http://www.washingtonexaminer.com/the-hypersonic-threat-that-keeps-us-commanders-up-at-night/article/2624599>

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Sputnik (Moscow, Russia)

US Hopes to Hold Nonproliferation Talks With Russia 'Soon' - Pres. Assistant

Author Not Attributed

June 2, 2017

The US is working to determine talks with Russia on nonproliferation, US Special Assistant to President on Nonproliferation Christopher Ford told Sputnik on Friday.

The United States is working to determine time and format for a talk with Russia on nonproliferation, but hopes the meeting will take place soon, US Special Assistant to President on Nonproliferation Christopher Ford told Sputnik on Friday.

"We are trying to figure out when, what the mode is for that engagement. But we hope it will be happening soon, we will have to see," Ford said when asked whether there are any scheduled meetings on the Intermediate-Range Nuclear Forces Treaty (INF) and other issues.

The INF treaty was negotiated and signed by the United States and the Soviet Union in 1987. Under the treaty — which Russia is a party to as Soviet successor state. Both countries agreed to give up and no longer develop land-based missiles with ranges between 500 and 5,500 kilometers.

<https://sputniknews.com/world/201706021054262008-us-russia-nonproliferation-inf/>

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Arms Control Wonk (Washington, DC)

TELS and MELS and TES! Oh My!

By Scott LaFoy

June 1, 2017

A couple weeks back North Korea unveiled its Hwasong-12 missile. The big hulking vehicle used for the test launch was not a transporter-erector-launcher (TEL), but rather just a Transporter-Erector (TE)!

A TE (or T/E) is neither a TEL nor a MEL. And since we're big on the rectification of names here at Arms Control Wonk, it seems like a good time to run down the differences among the three. Prepare for the excitement that can only come from the pedantic definitions of missile support equipment, illustrated by the very useful declassified diagrams from old CIA reports.

1. Transporter-Erector-Launcher (TEL)

The most common term for a truck or vehicle lugging around a missile is "TEL": Transporter-Erector-Launcher. This is the most common of the three and is an integrated single vehicle that transports the missile, erects it, and launches it. Used for everything from Scuds to the Topol-M to the Chinese DF-15 and DF-21D to almost all North Korean missiles, TELs are the easiest thing to find.

TELs are typically wheeled, but the DPRK has reintroduced tracked TELs into the mix after many decades of absence. Tracked TELs are effectively missiles mounted onto modified tank chassis, giving them different mobility options in regards to accessible terrain, though at the cost of maintenance and fuel consumption.

2. Mobile Erector Launcher (MEL)

The second is slightly less common: MEL, Mobile Erector Launcher. This terminology is not consistently applied, but refers to a non-integrated carrier for a missile. While the TEL is a single vehicle, a MEL is a tractor-trailer set-up. A prime mover is attached to a trailer which has a lifting mechanism for elevating and launching the missile. MEL was used to describe the Pershing II missile system and Patriot anti-missile system. It has since been applied to various similar trailer-based launch systems, but is sometimes used interchangeably with "non-integrated TEL," "trailer-type TEL," or, confusingly, sometimes just TEL.

Note that the diagram is labeled "TEL AS A TRAILER" not MEL. Because nothing can be easy. I still call the non-integrated/tractor-trailers for the DF-21 TELs — and nobody will stop me.

3. Transporter-Erector (TE)

Then comes the TE or T/E, the transporter erector. The U.S. uses Transporter Erector to refer to the large vehicles used to insert Minutemen III ICBMs into silos, but the more salient usage here is in reference to a vehicle that backs away from the missile launch position after erecting the missile. TEs are usually much lighter and thus risk significant damage if exposed to the violence of a missile launch.

Examples include the Chinese DF-3, one basing mode for the DF-4, and now the Hwasong-12's test launch configuration. The DF-3 and DF-4 used very light trailers to move the unfueled missiles onto a pre-set firing table. You can see this in a video of a DF-4 launching.

The Hwasong-12 is weird, as it appears to use something based on the same chassis as the Musudan's TEL. And like the Musudan, it carries a firing table along with it. So far, so good.

However, in the test footage released after the first successful Hwasong-12 test, the “TEL” is seen erecting the missile, ground crews attach the firing table to the ground, and then the vehicle pulls away! The Hwasong-12’s “TEL” actually is a TE with a detachable firing table, allowing for the vehicle to clear the area — avoiding any damage if the missile goes, as Jeffrey likes to say, kablooiie.

I’m not aware of this configuration existing in any other missile system, but as the Pukguksong-2 and the ASBM have shown, the DPRK has some pretty interesting ideas for how to build TEL configurations. It may be the case that this is just a testing configuration and eventually the missile is moved to a more traditional TEL set-up, or it could be the case that this

TO SUM UP

TEL: One big vehicle that transports, erects, and launches the missile.

MEL: A tractor-trailer (two vehicles) in which the trailer erects and launches missile.

TE: Either a tractor-trailer combination or single vehicle that transports and erects missile, but leaves the missile on a firing table and departs prior to launch.

Possible DPRK TE: Modified TEL that drops firing table and missile at launch position. Possibly could be hardened (or the basis for a future hardened) TEL, but unclear.

Analysts are inconsistent in their use of these terms, making them frustrating to explicitly and definitively differentiate.

The Hwasong-12 deviates from typical TE designs, as typical TEs are very light trailers attached to (more or less) generic prime movers. The Hwasong-12 instead appears to use the same special heavy vehicle chassis as the Musudan. Unlike the Musudan, which fires with the actual vehicle still attached, the Hwasong-12’s prime mover detaches its firing table and clears the launch site.

There are other combinations for non-ballistic missile systems (like the fancy TELARs that some SAMs have), but these are the three vehicle types most relevant for ballistic missiles. I’m sure that within the engineering and space launch community, where things are better formalized and standardized, there is a more rigorous set of definitions, but these are the ones used for decades by the analyst community on both the classified and open-source side. Almost any land-based mobile or transportable offensive ballistic missile system will be carried in one of these three configurations, with TEL being the most common and TE being the least.

<http://www.armscontrolwonk.com/archive/1203304/tels-and-mels-and-tes-oh-my/>

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The Japan Times (Tokyo, Japan)

South Korea to Freeze Deployment of THAAD Missile Defense Pending Environmental Probe

Author Not Attributed

June 7, 2017

South Korea will suspend any further deployment of a controversial U.S. missile defense system until an environmental impact assessment ordered by new President Moon Jae-in is finished, his office said Wednesday.

Seoul agreed last year under Moon's ousted predecessor Park Geun-hye to deploy the powerful missile intercept system to guard against threats from nuclear-armed North Korea despite angry opposition from Beijing, which views it as a threat to its own military capabilities.

Two missile launchers have been deployed in the southern county of Seongju, where hundreds of residents have staged fierce protests over what they see as potential environmental hazards posed by the batteries used in the Terminal High Altitude Area Defense (THAAD) system.

There is "no need to withdraw" the two launchers that have already been deployed, a senior official at the South's presidential office told reporters.

However, "additional deployment (of THAAD) should be carried out only after the environmental impact assessment is over," the official added.

"We do not view the deployment process as urgent enough to bypass the whole environmental impact assessment," he said.

The deployment freeze comes two days after Moon ordered a "proper" probe into the potential environmental impact of the missile batteries in a bid to win greater public support for the project.

Four more launchers arrived recently in the South and are currently being stored at a U.S. army base in the country, which plays host to some 28,500 U.S. troops as a legacy of the 1950-53 Korean War.

The South's army came under fire this week after Moon — who voiced ambivalence about THAAD on the campaign trail — accused it of withholding key information about progress on the system.

According to Moon's office, top military brass who briefed Moon's national security adviser last month deliberately withheld information about the arrival of the four new launchers.

A senior defense ministry official was removed from his position over the incident.

Defense Minister Han Min-koo — appointed by Park and widely expected to be replaced soon — admitted the presence of the new launchers only when pressed by Moon in a phone conversation last week.

The South's military cited a confidentiality agreement with the U.S. military as a reason to hide the critical information from the South's new commander-in-chief, according to a probe into senior army officials.

China — the South's biggest trading partner — has in recent months taken a series of measures against South Korean businesses seen as economic retaliation for THAAD.

<http://www.japantimes.co.jp/news/2017/06/07/asia-pacific/south-korea-freeze-deployment-thaad-missile-defense-pending-environmental-probe/#.WTjjgWRKVTZ>

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The Diplomat (Tokyo, Japan)

Exclusive: North Korea Tested Its New Intermediate-Range Ballistic Missile 3 Times in April 2017

By Ankit Panda

June 3, 2017

North Korea tested its new intermediate-range ballistic missile, the Hwasong-12, three times in April 2017.

North Korea's three major failed ballistic missile tests in April 2017 involved the Hwasong-12 intermediate-range ballistic missile, a U.S. government source with knowledge of the matter told The Diplomat, speaking on the condition of anonymity.

Pyongyang conducted tests of the system on April 4 and 15, from near its naval base at Sinpo, and another test on April 28 from the Pukchang Airfield in South Pyongan province.

The first two tests out of Sinpo both failed, but the first produced limited flight to a range of 60 kilometers with an apogee of 189 kilometers. Both tests out of Sinpo had been previously reported to involve a new Scud-variant known as the KN-17 by the U.S. government. North Korea has introduced a new short-range Scud-variant, which was first tested on May 28.

According to the source, a missile known within the U.S. government as the KN-17 was indeed tested out of Sinpo, but is not, contrary to previous reports, a single-stage, liquid-fueled Scud-variant with terminal maneuverability. Instead, it's the same missile that North Korea successfully tested on May 14 from near Kusong: the Hwasong-12 IRBM.

The source added that North Korea's April 28 launch from the Pukchang airfield in South Pyongan province, previously reported as an unknown missile, also involved the Hwasong-12 IRBM. The IRBM in that test exploded shortly after launch.

The United States government uses the "KN" missile naming system to designate systems under development and in use by North Korea. For instance, the Pukkuksong-2, the solid-fuel medium-range ballistic missile shown first in February, was designated the KN-15 — the first new publicly reported KN designation in 2016.

North Korean systems receive new designations if they are substantively different from previously known systems.

The repeated testing of the Hwasong-12 IRBM in April is significant and serves to deprecate previous analysis that assumed the KN-17 was North Korea's new Scud and possibly an anti-ship ballistic missile prototype. There are a few implications given this newly reported data.

First, if, as it appears, the Hwasong-12 is based on North Korea's indigenously developed high-thrust liquid-fuel engine, first demonstrated in March, it may be the case that Pyongyang had trouble perfecting the system with its first attempted flight tests.

This counters previous impressions that Pyongyang's test on May 14 was the first-known flight attempt for the Hwasong-12. Three failed tests prior to a success in May suggests that North Korea likely had to make changes to the system to achieve a successful test.

For instance, given that the April 4 test was reported to have “pinwheeled” in flight, North Korea may have encountered problems with flight stabilization for the new missile. The Hwasong-12 uses a skirt paired with vernier engines instead of grid fins, which Pyongyang has used on its Pukkuksong-1 submarine-launched ballistic missile (KN-11). The missile could also have encountered an engine failure in flight or improper flight stage separation.

Second, observers, including at The Diplomat, had speculated that the April 4 and April 14 tests could have served a signaling purpose given reports at the time of the USS Carl Vinson strike group’s deployment to the Korean peninsula. Had the Hwasong-12 test attempts out of Sinpo succeeded, North Korea would have demonstrated a capability to strike U.S. forces at Guam.

Third, given that the Hwasong-12 was tested throughout April and in mid-May, North Korea’s May 28 test of the new “ultra-precision” Scud with terminal maneuverability was the first — not potentially the third — attempted flight test of the system, suggesting that Pyongyang’s considerable experience with single-stage, liquid-fuel missiles has held up. North Korea’s exploration of terminal maneuverability, thus, suggests an iterative improvement to its existing Scud programs.

<http://thediplomat.com/2017/06/exclusive-north-korea-tested-its-new-intermediate-range-ballistic-missile-3-times-in-april-2017/>

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The Japan Times (Tokyo, Japan)

China Missiles Capable of Sending Nuclear Warhead to Western Pacific: U.S.

Author Not Attributed

June 7, 2017

China deployed new ballistic missiles last year capable of delivering nuclear warheads to ground targets in the Western Pacific, the Pentagon said.

The intermediate-range Dongfeng-26 rockets could also be used for conventional strikes against ships in the region, the U.S. Department of Defense said in its annual report on China’s military. The deployment has been anticipated since at least September, when the missiles were displayed during a military parade hosted by President Xi Jinping.

The weapons represent China’s latest strategic advancement after two decades of budget increases that turned it into the world’s second-largest military spender. The modernization drive, which has focused on expanding China’s air and naval reach, is challenging more than 70 years of U.S. military dominance in the Western Pacific.

In 2016, Xi also began a sweeping structural overhaul of the military that saw the elevation of China’s rocket force to a branch equal with the army, navy and air force. The DF-26 joins an arsenal that includes DF-21 “carrier killer” missiles.

The report confirmed that China’s Jin-class submarines are now equipped with JL-2 submarine launched ballistic missiles, boosting its sea-based nuclear deterrence. The Pentagon has been predicting since at least 2014 that China would carry out patrols of the submarines with the missiles aboard.

The Pentagon report noted several security developments regarding China, including cooling relations with Taiwan, drone sales to Pakistan, the construction of a military base in Djibouti in Africa and the continued use of “low-intensity coercion” tactics in the disputed South China Sea.

The report comes days after U.S. Defense Secretary James Mattis attended a security forum in Singapore and warned China against actions that “impinge on the interests of the international community, undermining the rules-based order that has benefited all countries.”

Senior Col. Zhao Xiaozhuo, a member of China’s delegation, said during the event that “China wants to use diplomatic and peaceful means, but not military force” to settle differences. Beijing has opposed the deployment of a U.S. missile shield in South Korea to defend against attacks from North Korea, in part because it says it could be used to counter China’s capabilities.

<http://www.japantimes.co.jp/news/2017/06/07/asia-pacific/china-missiles-capable-sending-nukes-western-pacific-u-s/#.WTjJnmRKVTY>

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Nikkei Asian Review (Tokyo, Japan)

Japan's Nuclear Export Strategy Struggles Despite India Deal

Author Not Attributed

June 8, 2017

Reactor manufacturers falter, from Toshiba to Areva

Japan's push to increase exports of nuclear technology has been cooled by Toshiba's Westinghouse problems, undercutting a pillar of Prime Minister Shinzo Abe's economic growth strategy just as a pact with India comes into effect.

The Diet's upper house approved a nuclear cooperation deal with India on Wednesday. India plans to boost its nuclear power production capabilities tenfold as economic growth fuels energy demand.

India and Japan began negotiations in 2010, reaching an agreement in November when Indian Prime Minister Narendra Modi visited Abe. Japan will revise related directives for its Nuclear Regulation Authority. India already greenlighted the pact, which takes effect once both countries notify each other of such approval. This could happen as early as July.

India has 22 nuclear plants in operation and five under construction, the International Atomic Energy Agency says. The country plans to source one-quarter of its energy from nuclear power by 2050.

"Population and economic growth will further strain energy supply and demand," said Satoshi Shimizu of the Japan Research Institute. "There is a lot of room for Japan to export nuclear power."

But Japan's export efforts have not gone according to plan. In June 2016, the U.S. and India reached a basic agreement on a deal commissioning Toshiba's American subsidiary Westinghouse Electric to build six nuclear reactors. Japan had rushed to finalize the pact with India since Toshiba would be involved in supplying parts, but Westinghouse's bankruptcy protection filing in March has thrown the conglomerate into crisis.

More global headwinds buffet the industry. Severe delays in the construction of nuclear power facilities by France's Areva have ballooned losses, with the French government now leading the company's reorganization. Vietnam canceled nuclear energy plans in November due to financial reasons and local opposition.

"Conditions have changed due to Toshiba and other issues," said Takeo Kitsukawa, a professor at Tokyo University of Science. "The first issue is how to get [nuclear reactor] manufacturers back on their feet."

A separate document indicates that Japan will cease cooperation should India break a 2008 pledge, made by its foreign minister at the time, to suspend nuclear tests. India has maintained its moratorium on nuclear testing since 1998.

Japan's opposition Democratic Party disapproves of the India deal because the provision halting cooperation is not included in the agreement itself, and thus may offer insufficient legal guarantees limiting nuclear technology exports to peaceful uses. Opposition parties also worry that India is not a member of the Treaty on the Non-Proliferation of Nuclear Weapons.

"The agreement is premised on India continuing its moratorium on nuclear tests," Chief Cabinet Secretary Yoshihide Suga, who is part of Abe's ruling Liberal Democratic Party, told reporters Wednesday. "We have clearly communicated that to India."

<http://www.japantimes.co.jp/news/2017/06/07/asia-pacific/china-missiles-capable-sending-nukes-western-pacific-u-s/#.WTjJnmRKVTY>

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Press TV (Tehran, Iran)

No One Would Survive US-Russia Nuclear War to Claim Victory: Putin

Author Not Attributed

June 7, 2017

Russian President Vladimir Putin says if the United States and Russia decided to use their nuclear weapons in a potential conflict with one another, no one would survive that war to claim victory.

"I don't think anyone would survive such a [nuclear] conflict," said Putin in an interview by American film director Oliver Stone, which is to be broadcast next week as a documentary titled "The Putin Interviews" by a US-based cable network.

Stone had asked Putin whether the US would emerge "dominant" in a "hot war."

In the interview, a short portion of which was made available to RT as a teaser for the documentary, Putin further described the US-led NATO military alliance as an instrument of American foreign policy and said those states that join the organization as members inevitably become US "vassals."

"Once a country becomes a NATO member, it is hard to resist the pressures of the US. And all of a sudden, any weapons system can be placed in this country. An anti-ballistic missile system, new military bases, and if need be, new offensive systems," said the Russian president.

Russia has long been concerned by the military alliance's expansion toward its borders.

In the interview, Putin said NATO was persistently looking for an enemy to justify its existence.

"There is no longer an Eastern Bloc, no more Soviet Union. Therefore, why does NATO keep existing?" he asked, adding, "My impression is that in order to justify its existence, NATO has a need of an external foe, there is a constant search for the foe, or some acts of provocation to name someone as an adversary."

He then argued that Russia "is forced to" take countermeasures over the ever-growing NATO threat and armed military build-up on Russian borders.

“We have to aim our missile systems at facilities that are threatening us. The situation becomes more tense,” Putin said.

In the short clip of the documentary, Stone claimed he held credible information that Putin had survived “at least five assassination attempts,” which the Russian leader implied had been successfully foiled by his security team.

“I do my job and the security officers do theirs, and they are still performing quite successfully,” Putin said, noting that “I trust them.”

In the interview, Putin indicated his belief in God. In response to the question, “What is your fate sir, do you know?” Putin said, “Only God knows our destiny – yours and mine.”

Apparently referring to the prospect of death, he then said, “One day, this is going to happen to each and every one of us. The question is what we will have accomplished by then in this transient world, and whether we’ll have enjoyed our life?”

<http://www.presstv.ir/Detail/2017/06/07/524445/Russia-Putin-nuclear-war-US-hot-war-Oliver-Stone>

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Voltaire Network (Paris, France)

Nuclear “Disarmament” According to Gentiloni

By Manilo Dinucci

June 6, 2017

On 15 June 2017, the United Nations will launch genuine negotiations striving to result in a prohibition on nuclear weapons. Until now, the Non Proliferation Treaty was a masquerade, the true and sole intention of which was to keep nuclear powers in a superior position to non-nuclear states. It is therefore not surprising that all nuclear powers, without exception, tried to oppose this initiative, which the UN General Assembly resolved in favour of.

The snapshot: a crowd in San Carlo Square in Turin, seized by a panic which had far-reaching consequences. This photo symbolizes the situation we are in today, suffering from a psychosis induced by the fear of a terrorist attack, which been skilfully propagated by the political-media machinery. True, the psychosis is grounded in reality, but the true causes and objectives of terrorism are hidden from our eyes. The fear of a terrorist attack has allowed our basic survival instinct to burst forth in spasms. Yet it is interesting that a media-political black-out has anaesthetized this same instinct at a time when there was a rational basis for its expression: coming face to face with a phenomenon that endangers the survival of humanity in its entirety: the race to nuclear weapons. Their instincts dulled in this way, the overwhelming majority of Italians is unaware that the second phase of the negotiations for a treaty prohibiting nuclear weapons is about to take place (15 June – 7 July) at the United Nations.

The draft Convention on Nuclear Weapons, drafted after the first negotiating phase in March, prohibits every State party from producing, possessing, transferring or receiving nuclear weapons, be it directly or indirectly. The decision to begin negotiations was taken by a General Assembly Resolution voted in December 2016 by 113 countries with 35 voting against and 13 abstentions. The United States and the other two Nato nuclear powers (France and Great Britain), the other Nato countries and its principal partners – Israel (the only nuclear power in the Middle East), Japan,

Australia and Ukraine – have voted against it. Even the other nuclear powers have expressed an opinion contrary to it: Russia and China (both abstained), India, Pakistan and North Korea.

Among the countries that have voted against is Italy, at heel to the United States. The Gentiloni government declared, on 2 February, that “summoning a UN Conference to negotiate a legally binding instrument on the prohibition of nuclear arms, is a strongly divisive step, that risks compromising our efforts in favour of nuclear disarmament”. The government’s position was that Italy is following “a gradual, realistic and concrete path that is able to lead to a process of irreversible nuclear disarmament, that is transparent and verifiable”, based on the “full application of the Non-Proliferation Treaty, the cornerstone of disarmament”.

And so Italy is applying the NPT which it ratified in 1975. The facts demonstrate this. Despite the fact that this treaty binds states that are militarily non-nuclear “not to receive from anyone whosoever nuclear weapons, nor to control such arms, directly or indirectly”, Italy has allowed the United States to install nuclear arms on Italian soil. Thus the US has stocked at least 50 B-61 bombs at Aviano and 20 at Ghedi-Torre. In addition, Italian pilots have been trained to use them. Starting from 2020, the B61-12 will also be stored in Italy. This is a new weapon for a nuclear first strike. It is able to penetrate ground level to destroy the bunkers of the command centres. Come 2020, or perhaps even earlier, the B61-12 will be stored in Europe. Thus Italy, formally a non-nuclear country, will be transformed into the firing line for an even more dangerous nuclear confrontation between US/Nato and Russia.

What to do? We must require Italy to contribute to launching the UN Treaty Banning Nuclear Weapons and to sign up to it. At the same time we must demand that the United States remove any nuclear arms it has from our territory and desist from installing the new bombs (the B61-12), using as a basis for our claim the Non-Proliferation Treaty that is in force. Yet for almost the entire “political world”, our appeal is a nonsense – on stilts as Bentham would have it. If political conscience is wanting, then we have no other option than to eject forth the juices of our basic survival instinct.

<http://www.voltairenet.org/article196641.html>

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UPI (Washington, DC)

Russia's Putin Shines Sympathetic Light on Nuclear North Korea

By Elizabeth Shim

June 5, 2017

Russian President Vladimir Putin blamed U.S. military actions in the Middle East for North Korea's nuclear weapons buildup, although Washington has offered security assurances to Pyongyang across multiple administrations.

Speaking Friday at the St. Petersburg International Economic Forum, Putin said small countries like North Korea have no option but to build weapons of mass destruction to defend against superpowers like the United States, Japan's Asahi Shimbun reported Sunday.

"Let us agree on a unified understanding of norms, fundamental principles of the international law and adhere to these rules. Because as long as there are none, as long as the rule of the strongest, the fist law, is being implemented, we will encounter problems that we are now witnessing in North Korea," Putin said, according to Sputnik.

Moscow has frequently called for an end to annual joint exercises around the Korean peninsula. The government also has claimed the North Atlantic Treaty Organization contains Russia.

Putin suggested the United States' influence across the globe was driving North Korea fears of an imminent U.S. attack.

"[They] destroyed Iraq, Libya, were close to destroying Syria. Stirred up the situation in Egypt, Tunisia, leaving them in a terrible state, let alone the processes that occurred in other countries such as Somalia. After that [they] got to the so-called post-Soviet space... And supported a coup d'état [in Ukraine]... This is a support for the armed seizure of power," Putin said.

Russia voted in favor of heavier sanctions against the Kim Jong Un regime at the United Nations Security Council last week, but Putin may believe the underlying cause for North Korean belligerence is the strengthening of U.S. military capabilities in the Asia Pacific.

Nuclear-powered carriers USS Ronald Reagan and Carl Vinson recently held joint exercises with a convoy from Japan's maritime self-defense forces, a move that may have irritated Moscow.

Russia has increased economic cooperation with North Korea, increasing the flow of North Korean laborers, and permitting a North Korean ferry service to connect the ports of the two countries.

http://www.upi.com/Top_News/World-News/2017/06/05/Russias-Putin-shines-sympathetic-light-on-nuclear-North-Korea/7821496668558/

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Sputnik (Moscow, Russia)

Moscow Concerned Over US' Tendency to Blame Moscow for INF Treaty Talks Failures

Author Not Attributed

June 3, 2017

Russia is concerned about the US tendency to blame Moscow for failures in setting up bilateral dialogue, including over the issue of the Intermediate-Range Nuclear Forces Treaty (INF), Russian Deputy Foreign Minister Sergey Ryabkov told Sputnik Saturday.

In February, US media reported that Russia had deployed nuclear cruise missiles in violation of the INF Treaty. In March, US Joint Chiefs of Staff Vice Chairman Gen. Paul Selva said in a congressional testimony that the United States aims to "look for leverage points" seeking Russia's compliance with the treaty.

"We cannot but be concerned about the ongoing tendency from the US side to blame us for various failures in the process of normalizing our dialogue or eliminating the existing problems. It is especially about the INF Treaty, regarding which we have just heard a new portion of accusations," Ryabkov said.

Russian Foreign Minister Sergei Lavrov has repeatedly said that Moscow was in full compliance with the INF treaty. According to Lavrov, Moscow had its own concerns over Washington's compliance with the INF Treaty and that the Russian side had repeatedly called on US partners to substantially discuss the most controversial points related to the agreement's implementation.

Soviet President Mikhail Gorbachev and US President Ronald Reagan signed the INF Treaty in 1987. Russia is a party to the treaty as the Soviet Union's successor state. Within the framework of the deal, the two sides agreed to destroy and not to further develop ground-launched ballistic and cruise missiles that have a range of 500-5,500 kilometers (310-3,410 miles). Since then, both

Moscow and Washington have repeatedly accused each other of violations of the bilateral agreement.

<https://sputniknews.com/politics/201706031054279914-russia-us-inf/>

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Politico Europe (Brussels, Belgium)

Israel's Secret Plan to Nuke the Egyptian Desert

By Avner Cohen

June 5, 2017

Fifty years ago, Israel built a nuclear device — and then had to decide what to do with it.

Fifty years ago, war transformed the Middle East. From June 5 to June 10, 1967 — known to Israelis as the Six-Day War and to Arabs as the 1967 War — Israel defeated three Arab armies, gained territory four times its original size and transformed from a nation fighting for survival into an occupier and regional powerhouse.

The consequences for the Arab coalition were no less transformative. For those “on the line of confrontation,” as Arab states bordering Israel were called, the war brought the loss of vast territories and a crushing humiliation. Gamal Abdel Nasser, president of Egypt and the most prominent Arab leader at the time, survived the war, but his leadership never recovered. The stunning defeat initiated the demise of his brand of secular pan-Arabism that was once an assertive ideological force in the Arab world.

For these reasons and more, the Six-Day War is probably the most researched event in the history of the modern Middle East. Volumes of studies have been produced over the five decades since. Yet one important aspect of the conflict and the months preceding it has remained largely untold: The nuclear dimension. On this issue, both sides still seem bound by layers of taboo, silence and secrecy.

On Monday, the 50th anniversary of the start of the 1967 war, the Nuclear Proliferation International History Project (NPIHP) at the Woodrow Wilson Center's History and Public Policy Program is releasing historical testimonies and documents — some never before published — that highlight the nuclear dimension of the crisis, and reveal of the existence of a crash effort to assemble Israel's first nuclear device. In May 1967, facing an unprecedented existential threat from Egypt and its other neighbors, Israel assembled for the first time two or three rudimentary nuclear explosives. And some in the Israeli government and military drew up a plan to detonate the nukes in the Egyptian desert—in a massive demonstration of Israeli power.

Of course, Israel never went through with it. The plan — called Operation Shimshon — was intended as a last resort. As it happened, Israel destroyed the Egyptian Air Force on the ground in 3 hours, and Shimshon was never spoken of again, just another victim of Israel's nuclear taboo — until now.

By mid-1966, Israel was moving fast towards the nuclear weapons threshold. The country's nuclear project — based out of Negev Nuclear Research Center at Dimona, in the South, and the Weapons Development Authority (RAFAEL) in the North, and headed by Israel Dostrovsky, a physical chemist and professor at the Weizmann Institute—was finalizing the technology that would allow a full-yield nuclear test, had Israeli leadership so chosen. The public knew nothing about it.

This would have made Israel the world's sixth nuclear state. As a matter of international law, there was nothing improper about following that path; China and France had just tested nuclear devices a few years earlier.

Politically, however, Israeli Prime Minister Levi Eshkol was uncertain, even apprehensive, about the project. For one, he knew that U.S. Presidents John Kennedy and Lyndon Johnson were opposed to Israel's acquiring a nuclear weapon. He also worried about how Egypt would react if it learned Israel was acquiring the bomb. But the project's secrecy was a liability, too. More than once, Army Chief of Staff Yitzhak Rabin referred to Dimona's "lack of international legitimacy" as something that could trigger Egypt into military action: "If Egypt bombs Dimona, and we want to wage a war," Rabin said in March 1965, "we could be issued an ultimatum from the entire world."

By the mid-1960s, concerns over Egypt's reaction to Dimona were engraved in the IDF strategic outlook. In late 1966, Rabin cited concerns over Dimona as a reason why Israel should limit its military response against Syria for harboring Palestinian terrorist groups. "There is one vital object in the south," Rabin reminded his colleagues, "which is an ideal object for a limited attack, and of which Egypt may have the support of the entire world."

Despite his doubts, Eshkol allowed the nuclear project to move forward, but with limited political guidance from the top. His instinct was to postpone facing the tough questions about what role nuclear weapons would play in Israel's future for as long as possible. In the meantime, though, he did rule out a nuclear test on political grounds. "Do you think that the world would congratulate us for our achievement?" Eshkol used to ask sarcastically of those people around him who entertained the idea of a test.

On December 14, 1966, a deadly accident at Dimona intensified Eshkol's doubts. An employee was killed, and a large critical working area contaminated. Three months later, in a secret cable to Washington, U.S. Ambassador to Israel Walworth Barbour reported that he had never seen Eshkol so uncertain about the future of the nuclear project, proposing that it was time for innovative diplomacy on the nuclear issue. In that cable, Barbour dismissed U.S. intelligence reports claiming that Israel was only weeks away from building the bomb and told Washington that Dimona was "not running at full blast."

The nuclear landscape in the Middle East changed almost overnight.

On May 14, 1967, and without warning, the Egyptian army started moving into the Sinai, on Israel's southern border. On May 17, as Rabin told the Knesset Foreign Affairs and Defense Committee that an attack on Dimona might well be the objective behind the mobilization, two Egyptian Migs 21 flew past Dimona, penetrating Israeli air space from the east and eluding Israeli jets. By that night, Eshkol and Rabin decided to raise the IAF readiness, to mobilize the air defense system and call up an additional armor brigade.

A second Egyptian reconnaissance flight over Dimona took place midday on May 26, while Eshkol was in a meeting with his top defense ministers. Rabin told the group that Israeli jets had engaged the Migs — at high altitude of over 50,000 feet—on their way back to the Sinai, but ultimately were unable to shoot them down. In a private consultation with the prime minister and IDF Chief of Operation General Ezer Weizmann, Rabin informed Eshkol of a "strange and worrisome transmission referring to coordination between fighter jets and bombers." Rabin added that this might be an indication of a coordinated aerial attack on Dimona. Weizman was even more alarmist, saying that intelligence indicated an Egypt attack on Dimona with at least 40 aircraft, possibly as early as that night.

Three hours later, Eshkol had another meeting with the Knesset's Foreign Affairs and Defense Committee. Towards the end of the meeting, Eshkol gave his own briefing, in which he said that

Israel cannot act before it exhausted all the diplomatic means available. Then, as if spontaneously, the prime minister told the committee about the earlier Egyptian flight over Dimona and added a few opaque words about a certain mysterious weapon. The minutes — published for the first time ever as part of the NPIHP — go as follows: “Today [Egyptian] Aircrafts crossed Israeli sky. We immediately cabled [Foreign Minister] Eban about it. The purpose of a certain weapon could be significant on this matter. And I do not talk here about a weapon as if out of this world; we talk about weapons that exist by others in hundreds, even thousands.”

Eshkol’s statement was veiled and self-censored, and we are not even sure to what extent the minutes reflect his exact wording. But it is not that difficult to decipher what the prime minister meant by “certain weapon [whose existence] can be significant, ... weapons that exists by others [states] in hundreds, even thousands.”

This was most likely the prime minister veiled and awkward way to tell them: We just went nuclear.

What happened after Israel crossed the nuclear threshold has come out in bits of pieces of history over the years. In his 1981 semi-biographical book *Rafael*, Munya Mardor, the founder and first director general of Israel’s Weapons Development Authority (RAFAEL) cites a diary entry from May 28—two days after Eshkol’s cryptic statement to the Knesset’s defense committee — describing a nocturnal visit to RAFAEL’s “assembly hall” watching teams of scientists and technicians “assembling and testing” what he called a “fateful” weapon system — “a weapons system they have brought to operational alert.”

Mardor did not explain what this unique “weapon system” was, or why it deserved to be called “fateful.” Nor would he be allowed to write more explicitly.

In my 1998 book *Israel and the Bomb*, I explained Mardor’s diary entry based on additional first hand testimony from a prominent and authoritative Israeli source. According to this source, on the eve of war, Israel—fearing massive casualties and perhaps even an Egyptian chemical weapons attack — rushed to assemble two, possibly three, improvised but operational explosive devices. These weren’t yet full-fledged nuclear weapons that could be dropped from a plane or launched from a missile — just explosives that could be transported to a location and detonated.

But while I knew from that interview that during the 1967 crisis Israel crossed the nuclear threshold, I did not know any strategic or operational details. What was the purpose of this rushed assembly? Was there any plan to use the device? To what extent was the IDF involved?

It was in 1999 that I managed to obtain an extraordinary first-hand testimony that addressed these questions. That summer in New York City, I met former Brigadier General Yitzhak Ya’akov (nicknamed Ya’tza). In 1967, as the IDF senior staff officer in charge of weapons development, Ya’tza was the chief liaison between the IDF and all the civilian defense industries, including the nuclear project. Now, at age 75, Ya’tza was eager to share with me—an Israeli nuclear historian a decade younger than he—this dramatic tale, what he would often call “my legacy.”

For nearly two decades I kept Ya’tza’s testimony confidential, at his request. In fact, a year and a half after he spoke to me, he was arrested and jailed in Israel for revealing details about the country’s nuclear project to Dr. Ronen Bergman, a Yediot Achronot journalist I connected him with. The story was censored in total by the government’s censor and never published. In the end Ya’tza was released on the condition that he would say nothing more and sentenced to two years of probation. Ya’tza died in March 2013, a day after his 87th birthday, and his testimony is published now for the first as part of the NPIHP.

Ya’tza arrived in Israel from a business trip to the U.S. on May 20, 1967, and found the IDF general staff in a state of crisis. War with Egypt looked more and more likely by the minute. Upon arrival,

Ya'tza met General Weizman's deputy, General Rechavam Ze'evy, who ordered him, Ya'tza told me later, "Prepare everything you got." That meant, practically speaking, elevating the readiness of all the R&D programs under Ya'tza's responsibility. Every piece of hardware being worked on should be rendered usable.

In following this order, Ya'tza learned from one of his lieutenants that the people of the nuclear project were working around the clock to complete and make "usable" an explosive nuclear device — not a weapon, but something akin to the nuclear "gadget" the United States had tested in Alamogordo, New Mexico, on July 19, 1945. This crash effort made use of both of Israel's nuclear headquarters. In the north, RAFAEL engineers and scientists were building the explosive system, commonly called "the spider"; at Dimona and a few other sites, nuclear teams were working on assembling the first complete nuclear core.

Ya'tza immediately recognized that the nuclear project lacked an operational dimension. While the scientists could assemble the explosive, only the IDF could provide the resources — human and material — to make this technical capability useful. And so, in late May 1967, Ya'tza took upon himself to add an operational-military dimension to Israel's fledgling nuclear program. He drew up a preliminary contingency plan — codenamed "Shimshon," or Samson, after the biblical figure who demolished a temple, killing himself and the Phillistines holding him captive there — proposing how the improvised device could be exploded in enemy territory to demonstrate nuclear capability. (As Israel did not yet have a nuclear "weapon," battlefield use was out of the question.)

The idea behind Ya'tza's plan was to provide the prime minister with a last resort option in the unlikely event of a devastating Egyptian attack — a powerful show of nuclear force if Israel began to fear for its own existence. Detonated in the Sinai, 20 kilometers from Egyptian troops but not close enough to kill them, the hail mary nuclear explosion would hopefully change the balance of power in the war.

Ya'tza emphasized during our conversations that nobody at the IDF or at the nuclear project asked him to draft an operational order, but he did get approval from his bosses, Ze'evy and Weizman, to do so. As Ya'tza recalled, the original Shimshon plan was a two or three-page document with some appendices stating in a standard military style: the operation's objective, means and methods of execution, as well as the size of the military force that would be required to execute the operation.

The order established a small, ad-hoc IDF team that would help execute the plan. It was somewhat out of the ordinary because it required the IDF to support non-military personnel; the nuclear device was not considered an IDF asset — let alone a weapon. The primary role of the military team in Shimshon, then, was to support the civilian nuclear team: to secure the area, to support in preparation and to establish secured communication with the prime minister's office. Ya'tza remembered that the order named him as the military commander of the operation.

The mission of the civilian team — headed by Dostrovsky — was to transport the "spider" (i.e., the semi-assembled explosive device) and the nuclear core to the target site, to "marry" the "spider" with its nuclear core, to connect ignition electrical wires to the command post and to wait for an order from the prime minister and the IDF chief of staff.

According to the plan, the military and civilian teams would be transported to the target site in two Air Force Super Frelon helicopters — the largest helicopter Israel had in its fleet at the time, capable of carrying a maximum of 38 people. The military team was take off from the old police station in Gedera, in central Israel. The nuclear group would prepare to take off from elsewhere in central Israel, where the core and the "spider" would have arrived separately from Dimona and RAFAEL, respectively.

The selected helicopter landing site was a mountain in the eastern Sinai, roughly 20 kilometers from the large Egyptian military complex in Abu Ageila and 15-20 kilometers from the Israeli border. A small paratroop force would have diverted the attention of the Egyptian army in the area to allow the team to land, travel to designated ground zero, which was nearby, and prepare the nuclear demonstration. A command hideout post was to be dug in a canyon or a creek about a kilometer and a half from the landing point. A nuclear flash arising from that location would be visible for many tens kilometers throughout the Sinai and the Negev. It was also possible — at least Ya'tza thought — that the explosion could have killed the team waiting a little more than a kilometer away.

After drafting Shimshon, Ya'tza brought it to his superior, General Ze'evy. (According to Ya'tza, Weizman was aware of the activity, too, but left it entirely to Ze'evy as he was focused on other things). Ze'evy made a few editorial changes in the text and approved it. Then Ya'tza and Ze'evy presented the order to Chief of Staff Yitzhak Rabin for his signature.

Ya'tza recalled that they met Rabin soon after his two-day medical absence on May 23-25 — what is now known as Rabin's mental breakdown, a period of 36-48 hours in which Weizman served as the acting chief of staff. This suggests the meeting most likely took place sometime between May 26 and May 28. According to Ya'tza, Rabin did not look good. The chief of staff's office was unusually quiet and dark, all the curtains were drawn and Rabin was sitting alone. Ya'tza and Ze'evy showed him the document, but Rabin seemed unable to focus. He read the plan but hardly asked any questions before signing it. Ya'tza remembered thinking to himself it was very odd behavior, given that Rabin had just authorized initiating steps towards a nuclear demonstration. Ya'tza also noted that the entire process of producing and approving the order was rather fast; it may have taken no more than half a day.

Equipped with formal authority, Ya'tza then started to form his team. He met with Lt. Colonel Dovik Tamari, Ze'evy's deputy. Together they visited the R&D installation in Northern Israel where the device was built and met key people involved in the effort. Ya'tza recalls Tamari taking extensive notes.

The highlight of the preparations was a reconnaissance flight by helicopter over the selected landing site in the eastern Sinai. Among the people on board Ya'tza vividly recalled Dostrovsky ("always with his short pants"), and Tamari. The flight took off from Tel Nof AFB and crossed the Egyptian border into the Sinai at low altitude. But just as the helicopter approached the landing site, the pilots received a message from ground control that Egyptian jets were taking off and they turned around. "We got very close to Abu-Ageila, we saw the mountain, and we saw that there is a place to hide there, in some canyon," Ya'tza recounted.

The consensus was to bring the nuclear project back to its secretive routine as if nothing had happened.

While preparing for Shimshon, Ya'tza told me more than 30 years later, all sort of qualms crossed his mind: Would it explode? Would he survive the blast, heat and the radiation of the explosion? What would it be like to be burned up in such an explosion? "Even if we could have done it," Yatza told me at one point, "I probably would have been killed." Ya'tza also had qualms about Israel being the second state in history to conduct a nuclear explosion in a war. How would the world react if Israel went through with it?

On June 1, 1967, Prime Minister Eshkol relinquished his Defense portfolio, and former Chief of Staff Moshe Dayan was appointed Israel's minister of defense. Dayan soon appointed former Chief of Staff Zvi Tzur ("Chera") as his new deputy and chief civilian aide. That made Tzur the new overseer

of the nuclear project. By June 2, Dostrovsky had essentially two bosses: Tzur (on behalf of Minister of Defense Dayan) as his immediate supervisor, and Prime Minister Eshkol as his ultimate boss.

These changes had an immediate impact on Shimshon. Upon assuming his new post, Tzur reviewed every aspect of the operation. With a reputation as an exceptional administrator, Tzur infused order and clarity into what had until then looked like pure improvisation. During our interview, Ya'tza praised Tzur's role as the new boss of the nuclear project. In the few remaining days before the war Tzur held daily coordination meetings with the key civilian and military figures involved, including Dostrovsky, Ya'tza and a few others. According to Ya'tza, Tzur didn't change much in the plan, but he did call attention to many loose ends and gaps between the various players and agencies involved.

On June 5, 1967, the first day of the Six Day War, Ya'tza and Tamari were on full alert in Ya'tza's office at IDF headquarters in Tel Aviv, awaiting the command to activate Shimshon. Ya'tza told me that even up through that morning he still believed Shimshon could be mobilized.

But by late morning, when it became known that the Israeli Air Force had destroyed most of the Egyptian Air Force on the ground, Ya'tza knew that Shimshon would probably remain no more than an idea. By the next day, the commanding team was dismantled.

A few days later, after the war was over and everyone in Israel was celebrating, Tzur put together a final meeting to review Shimshon. The group of key Shimshon figures discussed lessons learned and what to do now — how to bring the nuclear project back to its routine, given what was learned from this emergency exercise. But Ya'tza had another creative idea: The night before the meeting he wrote a memo to Tzur proposing that Israel conduct a nuclear test anyway. His reasoning in the memo, Ya'tza recalled, was that Israel should take advantage of this rare victory both to test their technology and come out as a nuclear weapons state. The country might never have a better time to do so.

Ya'tza's proposal was totally dismissed; Tzur never even raised it for discussion. None of the other people in the meeting made any reference to it. The consensus was to bring the nuclear project back to its secretive routine as if nothing had happened. As Tzur noted in the interview he gave to the Rabin Center more than 30 years later — which is also part of this special collection — he viewed the whole effort as a mere technical status check. Politically, he thought a nuclear demonstration made no sense. "It would have destroyed what we already had," he said. Technologically, he viewed it as an amateurish improvisation.

For more than three decades, few people had any idea of the nuclear drama that took place in Israel on the eve of the Six Day War. Even the handful who did hardly ever talked about it. "Shimshon" fell into oblivion. It was as if it never happened.

For Ya'tza, however, those events were never forgotten. For some decades the memory lay dormant, but gradually it came back to life. When I met Ya'tza in the summer of 1999 he considered Shimshon one of the most remarkable events of his life. He started referring to Shimshon as "my legacy."

But even Ya'tza himself sounds unclear on the question of how real it all was. At some points in the interview, he talked about Shimshon as a genuine military plan that could have been executed—albeit under unlikely circumstances; on other occasions he referred to it, like Tzur did, as an amateurish and improvised idea, conceding implicitly that nobody at the top would or could have taken it too seriously.

From an historical perspective 50 years later, with so little evidence available, it's hard to know the truth. In my view, Shimshon was more a technical exercise for an unlikely scenario than a genuine, military contingency plan. One should keep in mind that Dostrovsky, Tzur and (to some degree)

Rabin — not Ya'tza — would have been the people advising the political decision-makers about what could be done with Israel's newly formed capability.

I ultimately agree with Tzur's view that on the eve of the 1967 war, Israel's leadership was not seriously considering conducting — or even capable of conducting — a nuclear test. Yet Ya'tza's testimony does reveal — and for the first time from an identifiable source — that Israel had the capability to improvise a nuclear explosive device in June 1967.

Maybe the Six-Day War wasn't one of nuclear history's "close calls," but it certainly brought about a milestone in global nuclear history.

<http://www.politico.eu/article/israels-secret-plan-to-nuke-the-egyptian-desert/>

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The Sacramento Bee (Sacramento, CA)

US Think Tank: Israel Had Plan to Use Atomic Bomb in 1967

By Aaron Heller

June 5, 2017

Israel had a secret plan to detonate an atomic bomb in Egypt in the event that it faced defeat during the 1967 Middle East war, a leading American think tank said Monday, citing newly released documents.

The operation was never carried out, as Israel swiftly vanquished its enemies in six days. But details about the doomsday scenario, in which Israel planned to set off a nuclear weapon atop a mountain in the Sinai Peninsula, shed new light on the fearful climate at the time. It also could undermine Israel's decades-long policy of nuclear ambiguity.

The Nuclear Proliferation International History Project of the Woodrow Wilson International Center for Scholars in Washington unveiled a website Monday devoted to "Operation Shimshon," the codename for the hastily arranged contingency plan of placing an improvised nuclear device in Sinai to be detonated upon the prime minister's orders.

The operation's name, Hebrew for Samson, invoked the biblical figure of great power and aimed to scare Arab armies into quitting their offensive should Israel face what was feared to be an existential threat.

The new information was based on interviews with Yitzhak Yaakov, a retired brigadier general who in 1967 was the chief liaison between the Israeli military and the civilian defense industries, including those overseeing the nuclear project.

In a series of interviews in 1999 with Avner Cohen, a leading scholar of Israeli nuclear history, Yaakov detailed how he came up with the plans at his superiors' urging and how a pair of helicopters was chosen for the mission along with forces from the elite Sayeret Matkal unit.

The selected landing site was a mountain in eastern Sinai, about 20 kilometers (12 miles) from the large Egyptian military complex in Abu Ageila. There, the semi-assembled "spider" device was to be connected with its nuclear core and linked to ignition wires.

"You've got an enemy, and he says he's going to throw you to the sea. You believe him," Yaakov said, according to a transcription of his taped interview with Cohen.

"How can you stop him?" he asked. "You scare him. If you've got something you can scare him with, you scare him."

The distance of the site from Egyptian population centers, and the relatively small size of the device, indicated that the plan was meant to send a message of deterrence, not inflict heavy damage.

In an accompanying essay, Cohen concludes that Israel's leadership did not seriously consider conducting a nuclear demonstration. But he said Yaakov's testimony was significant since it revealed that Israel had the capability to improvise a nuclear explosive device in June 1967.

Israel maintains a policy of nuclear ambiguity, neither confirming nor denying the existence of an arsenal. But it is widely believed to possess hundreds of nuclear bombs. Israeli officials have often hinted that the country possesses nuclear capabilities, and a former employee at Israel's nuclear reactor served 18 years in Israeli prison for leaking details and pictures of Israel's alleged nuclear weapons program to a British newspaper in 1986.

The Wilson center's project was first reported by the New York Times. Israel's Foreign Ministry had no comment.

But deputy minister Michael Oren, a former ambassador to the United States and a historian who has written extensively about the 1967 war, said he was convinced it never happened.

Oren said Cohen's paper relied on a single source, which was highly unusual among serious researchers. "It's not sound history," he said.

"I also interviewed Yitzhak Yaakov and I wasn't convinced that his story held water. Tens of thousands, if not hundreds of thousands, of classified documents from the Six-Day War have been released," he said, "and there is not even one shred that supports Avner Cohen's version. If there was something, we would have found additional evidence."

Yaakov died in 2013 at the age of 87. Cohen said he promised Yaakov he would publish his story at some point and said the 50th anniversary of the 1967 war this week seemed the appropriate time.

<http://www.sacbee.com/latest-news/article154376689.html>

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Middle East Eye (London, UK)

Iran Honouring Nuclear Deal but Nearing Heavy-Water Limit Again, Says IAEA

Author Not Attributed

June 2, 2017

Iran has stayed within limits on its nuclear activities imposed by a 2015 deal with world powers but is close to once again breaching a ceiling on its stock of one chemical, a quarterly report by the UN atomic watchdog showed on Friday.

The report was the second since the January inauguration of US President Donald Trump, who has called the pact between six powers and Iran "the worst deal ever negotiated" and branded Tehran an enemy in contrast with his predecessor Barack Obama.

Iran's stock of low-enriched uranium as of 27 May was 79.8 kg (175.5 pounds), well below a 202.8-kg (446-pound) limit, and the level of enrichment did not exceed a 3.67 percent cap, the International Atomic Energy said in a confidential report sent to IAEA member states and seen by Reuters.

"Everything is running smoothly at this point in time," one senior diplomat said, referring to Iranian compliance with the restrictions under the deal.

Obtaining enough highly enriched uranium or plutonium is the biggest hurdle to producing a nuclear weapon. The 2015 deal aimed to extend the time Iran would need to build an atomic bomb, if it chose to, to a year from a few months. Weapons-grade uranium has an enrichment level of around 90 percent.

But Iran's stock of heavy water, a chemical used as a moderator in a type of nuclear reactor that can produce plutonium, reached 128.2 tonnes, just below a 130-tonne limit, the IAEA report said. Iran was building one such reactor but it has had its core removed under the deal and is being redesigned.

Tehran has already breached that limit twice since the deal took effect, prompting the IAEA to express "concerns" and drawing rebukes from Washington and other Western powers.

The deal calls for any excess amount to be sold to a foreign buyer, and Iran has shipped the surplus to Oman while it looks for one.

Heavy water plan shutdown

Iran is not now making heavy water because its production plant has been shut down for maintenance. Diplomats said this could have been due to Tehran not wanting to raise tensions around its May 19 presidential election, which was won by pragmatist Hassan Rouhani, who championed the deal.

The IAEA verified the shutdown on 16 May.

It is not clear when the heavy-water production plant will reopen but if it happened today a realistic time by which Iran would reach the 130-tonne limit would be "somewhere in the second half of July", the senior diplomat said.

The Trump administration indicated its support for the Oman arrangement in April by acknowledging Iran was meeting its commitments under the 2015 deal, which also lifted tough economic sanctions against the Islamic Republic.

Washington has, however, voiced concern about other Iranian actions, including ballistic-missile testing and what it calls Tehran's role as a "state sponsor of terrorism".

Those actions spurred Trump to accuse Iran of violating the spirit of the nuclear agreement. However, Trump extended sanctions relief against Iran last month, indicating he has decided to keep backing the deal, at least for now.

At the same time, his administration has launched a wider policy review on how to deal with the Islamic Republic.

<http://www.middleeasteye.net/news/iran-honouring-nuclear-deal-nearing-heavy-water-limit-again-says-iaea-1215973676>

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Iran News Update (Pontoise, France)

Criticism Continues Over Iran Nuclear Deal

Author Not Attributed

June 8, 2017

After nearly two years since it was hailed by the media as a ground breaking exercise in diplomacy, the Iran nuclear deal is once again in the spotlight.

Tehran gained some cash reserves to bolster their failing economy. However, the regime used much of the money to upgrade its military, instead of investing in its people. It has continued its crackdown on human rights.

In an article by Michael Tomlinson for iranlobby.net, he writes about a revelation disclosed last year by the Associated Press, of a “secret side deal that grants Iran an accelerated pathway to enriching uranium back to full capacity well before the 15-year time frame outlined in the deal.”

This would explain the accelerated development of Iran’s ballistic missile program we have witnessed recently. According to Tomlinson, “you can see the blueprint laid out by North Korea a decade earlier that enabled it to join the ranks of nuclear weaponized nations.”

A senior research fellow for Middle Eastern Affairs at the Heritage Foundation, James Phillips, outlined the key failing in the nuclear deal in a piece in the Daily Signal. “The published text of the nuclear agreement was vague on the exact timing of what happens to Iran’s uranium enrichment program after ten years,” he writes. ““But the new document indicates that after ten years, Iran plans to start replacing its current centrifuges with thousands of more advanced models that would be up to five times more efficient than the 5,060 centrifuges that it is allowed to operate currently under the agreement.” He added, “This concession could allow Tehran to enrich at more than twice the rate that it is now doing, even if the total number of operating centrifuges are reduced. This is a major concern because if the enrichment rate doubles, the time Tehran would need to stage a nuclear breakout would be reduced from the 12 months promised by the Obama administration to six months or less, much earlier than the administration had advertised when it was trying to sell the nuclear deal.”

The alleged side deal was part of an add-on document that was prepared and submitted by the Iranian regime to the United Nations.

Tomlinson says that, “This poses a monumental problem for the future of the world in any new nuclear negotiations—not just with Iran, but any rogue nation...”

According to a Non-Resident Iran Research Fellow at the Foundation for Defense of Democracies, an FDD report points out that by appeasing the Iranian regime, the U.S. has set the precedents that “intransigence can lead the international community to accept domestic enrichment” and “that being a Western ally does not guarantee more flexible treatment when accessing nuclear technology.”

The unnamed Research Fellow continues, “Key American allies that have previously limited their nuclear activities—like South Korea or the United Arab Emirates—have already noted that Iran, which has been repeatedly sanctioned for its nuclear noncompliance, has been permitted to sign a deal allowing it to develop industrial-scale nuclear capacity.”

Tomlinson says that although the agreement is lengthy (159 pages) it is not always specific. There is a condition called “significant non-performance” under which parties can walk away from the JCPOA. Vague language may allow the Islamic State to define violations on its own terms.

Former deputy undersecretary of defense in the George H.W. Bush administration and a senior fellow of the London Center for Policy Research, Jed Babbin, noted in a piece in the Washington Times how the nuclear deal actually prevented international monitoring of Iran’s nuclear activities. “Parts of the side deals evidently bar Americans from participating in the inspection of Iranian nuclear sites. The side deals also allow Iran to inspect some of its own sites, preventing U.N. inspectors any access. To no one’s surprise, the Iranians have reported they are complying with the deal even in the uninspected sites,” he said, adding, “In 2003 Iraq, mistaken intelligence led to war. In 2016 Iran, the lack of intelligence is leading to a false peace.”

<http://irannewsupdate.com/news/nuclear/3847-criticism-continues-over-iran-nuclear-deal.html>

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Hindustan Times (New Delhi, India)

India’s Nuclear-Weapon Inventory Set to Increase: Report

Author Not Attributed

June 2, 2017

The IISS report stated that India’s base of long range nuclear missiles and nuclear submarines is set to grow, as a defence measure against China.

India’s nuclear-weapons inventory is expected to expand in both quantity and quality as the country is aiming to build an “adequate deterrent capacity” against China, according to a new report.

The report on Asia Pacific Regional Security Assessment for 2017 released by the International Institute of Strategic Studies at the ShangriLa Dialogue here today.

“Much of this will be driven by the need to build an adequate deterrent capacity against China,” the report said.

“Analysts broadly agree that India holds around 100-120 nuclear warheads in its inventory, half of which are mounted on ballistic missiles,” said the US-linked IISS report.

Currently, none of India’s deployed surface-to-surface missiles has the range to cover all of China unless deployed close to the Sino-Indian border, it said.

However, India has at least two longer-range missiles under development, including the Agni-IV intermediate-range ballistic missile and the Agni-V intercontinental ballistic missile (ICBM), the report said.

A developmental ICBM dubbed Agni-VI with a planned range somewhere between 6,000 and 10,000 km was reported in local news media in 2013, it pointed out.

However, the status of existence of this project is unclear, added the report.

New Delhi is also developing a submarine-based nuclear force, the report said.

Its first nuclear-powered ballistic-missile submarine, the Arihant, began sea trial in 2014 and was reportedly commissioned in August 2016, it said.

Of the nuclear-capable missiles, various reports suggest the submarine might carry, the 700-km range K-15 cannot hit mainland China from the Bay of Bengal, while the K-4 may be able to target most of China if its reported 3,500-km range is accurate.

India is reportedly building four more submarines and will probably seek to develop longer-range missiles for them, said the report.

The Shangri-La Dialogue, an annual gathering of defence ministers, armed forces chiefs, military strategists and experts began this evening at Singapore's Shangri-La hotel.

It will be hearing speakers on various defence issues and security strategies tomorrow and ends at noon on Sunday.

<http://www.hindustantimes.com/india-news/india-s-nuclear-weapon-inventory-set-to-increase-report/story-nmZt1ftciL78AuB73xlRBM.html>

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NewsBytes (Uttar Pradesh, India)

India's Advanced Nuclear Weapons Delivery Systems

By Abheet Sethi

June 3, 2017

A look at India's nuclear weapons capabilities

On June 2, India successfully test-fired its indigenously developed nuclear-capable Prithvi-II missile.

The missile, which has a range of 350km, was launched at the Integrated Test Range at Chandipur in Odisha at 9:50am.

The Prithvi-II missile is one of several different delivery systems India possesses to launch nuclear weapons.

In this timeline, we explain the components of India's strategic nuclear weapons program.

Timeline

03 Jun 2017: A look at India's nuclear weapons capabilities

Details: India's various delivery systems to deploy nuclear weapons

India has an estimated 106 nuclear warheads, according to the US-based disarmament advocacy Bulletin of the Atomic Scientists.

However, for them to be deployed against the enemy, different kinds of delivery systems are used.

India has operationalized the land-based Prithvi and Agni series ballistic missiles, air-based delivery systems such as the Indian Air Force's Jaguar and Mirage-2000 fighter jets and ship-based Dhanush ballistic missiles.

Fact: India: No first use of nuclear weapons

After the 1998 nuclear tests, India declared a 'no-first-use' policy, saying it would not use nuclear weapons, unless as a response to a nuclear attack. India's nuclear weapons are meant to deter its arch rivals Pakistan and China from using their nuclear warheads against it.

Land-based: India has an estimated 56 nuclear warheads for land-based missiles

India has a total of 24 nuclear warheads capable of being mounted on Prithvi-II ballistic missiles, according to the Bulletin of Atomic Scientists.

It has another 20 Agni-I ballistic missiles (700km range), 6 Agni-II (2000km) and 4 Agni-III (3000km) ballistic missiles.

The shorter ranged Prithvi-II, Agni-I and Agni-II are more Pakistan-specific. The Agni-III, and the under development Agni-IV (3500km) and Agni-V (5000km) are China-specific.

Fact: India's nuclear triad gives it all-round protection

India has a nuclear triad, meaning nuclear weapons can be deployed by air, ground as well as the sea; guaranteeing a second strike, should one of these mechanisms be targeted. China has a triad capability but Pakistan doesn't.

Air-based: IAF fighter jets can deliver estimated 48 nuclear warheads

Fighter jets operated by the Indian Air Force (IAF) can deliver an estimated 48 out of India's 106 nuclear warheads, making them the second most crucial arm of India's nuclear weapons capabilities.

The Mirage-2000 warplanes can deliver 32 nuclear warheads while the Jaguars can deliver 12.

India is planning to modify 42 advanced Sukhoi-30MKI fighters to launch nuclear-capable supersonic Brahmos missiles.

Sea-based: India's sea-based nuclear program developing fastIndia has an estimated two ship-launched 350-km range Dhanush ballistic missile, which could be fitted with nuclear warheads from sea.

India is also working towards the development of 750km K-15 Sagarika submarine-launched ballistic missiles (SLBM) and the 3500km K-4 SLBM.

These will be deployed on India's Arihant-class nuclear powered ballistic missile submarines.

Last year, the INS Arihant was reportedly commissioned, completing India's triad capability.

<https://www.newsbytesapp.com/timeline/India/7592/44365/india-s-advanced-nuclear-weapons-delivery-systems>

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The Diplomat (Tokyo, Japan)

Sino-Indian Nuclear Rivalry: Glacially Declassified

By Jayita Sarkar

June 2, 2017

Official documents from a 1966 Air India crash on Mont Blanc could shed light on a key time in India's modern history.

On January 24, 1966, at about 7:02 in the morning, Air India 101 'Kanchenjanga'-- a Boeing 707 airliner-- crashed on Mont Blanc near the Franco-Italian border. All 117 people on board were killed, including Homi Jehangir Bhabha, hailed as the father of the Indian nuclear program. His remains were never recovered from the Alps: Vikram Sarabhai delivered his condolences in Bombay (present-day Mumbai) on January 25, and became Bhabha's successor as the chairman of the Indian Atomic Energy Commission.

In summer 2016, over half a century later, the Bossons glacier in Chamonix, in the French Alps, elicited a series of treasures: not rubies or sapphires but documents marked “Top Secret,” originating from the Indian Ministry of External Affairs and on board the ill-fated Air India flight of 1966. What do these documents tell us? Do they warrant a trip to the Alps for the archive-hungry historian?

Two Crashes, One Location

Climate change and the resultant evanescence of the Alpine glacier have been spewing surprises to the inhabitants and mountaineers that visit this certain area in the Alps. According to Françoise Rey, a long-time inhabitant of Chamonix, both human curiosity and avarice have a role to play. “People dig around hoping for jewels from the plane,” and sometimes, “just for cadavers,” she told me during our meeting in Geneva in May 2017.

Rey is a novelist, who has authored several books including the 2015 *Crashes au Mont Blanc: La Fin des Secrets?* (The Crashes on Mont Blanc: The End of Secrets?) She thinks that a lot can be done about the incessant surprises that the glacier is offering, if only the people who run into jewels, trinkets, government documents, and sometimes human body parts on the glacier, could deposit those into a recognized repository, like, perhaps an “Archive of Mont Blanc Crashes.”

The 1966 plane was not the first Indian airliner to meet its tragic end on the glacier. It crashed into the Bosson glacier exactly in the same area as Air India Flight 245, called the “Malabar Princess,” which had perished in November 1950 with all 48 passengers and crew on board. This 1950 crash inspired renowned French author Henri Troyat’s novel *La neige en deuil* (literally translated as “The Mourning Cloud”), which was later adapted into the 1956 American film, *The Mountain*.

The black box from the 1966 crash was never recovered, and rescue operations were halted the day after the crash owing to severe weather conditions around Mont Blanc. Investigation resumed in September 1966, and the French inquiry commission completed its report in March 1967, concluding that severe “white-out” conditions near the summit of the mountain, together with miscommunication over “phraseology” between the air traffic controller in Geneva, and the pilot Captain J.T. D’Souza led to the crash. The French line of reasoning was accepted by the Indian government, and included in its annual report, *Accidents to Aircraft Registered in India 1966*, produced by the Air Safety Directorate of India’s Civil Aviation Department.

Although the French report noted that the largest parts of the debris from the crash were on the Italian Alps near Courmayeur, it is unclear why Italy did not participate in the inquiry commission. Eyewitness accounts of Italian individuals were, however, incorporated into the French report. These included accounts by Alitalia pilot Agostino Ferrari (AZ 234), Italian Air Force pilot colonel Aldo Sirtori, and pilot Patron (6029), who were flying near the crash site around that time. According to the transcript of communication of the air traffic controller in Geneva included in the French report, Flight 6029 was scheduled to fly over Geneva around the same time as Air India 101 was to make its descent on the Swiss city. As a result, when the latter suddenly disappeared from the radar, the controller asked flight 6029 around 7:04 am to report on what it saw around Mont Blanc. The pilot remarked in Italian that he saw, “a black cloud around 16,000 feet, different from the other clouds,” and he thought that the black cloud was possibly due to an “explosion.” The 1966 crash has engendered numerous conspiracy theories that have titillated generations of Chamoniards and visitors but are beyond the scope of this essay.

Homi Bhabha and India’s Nuclear Latency

The 1966 crash resulted in the death of the man known as the father of India’s nuclear program. The Guardian called Homi Bhabha’s death a loss not just for India but also for the world, which had lost a “scientific diplomat and emissary.” Prior to his death in January 1966, Bhabha played a

pivotal role in India's nuclear program, and often exaggerated India's ability to develop a nuclear device. In late 1964, after the first Chinese nuclear test, Bhabha claimed that India could explode a nuclear device within 18 months, and for a cost of \$10 million.

During his meeting with U.S. officials at the State Department in February 1965, he claimed that "India needed to make some dramatic 'peaceful' achievement to offset the prestige gained by communist China among Africans and Asians." Referring to India's indigenously built plutonium reprocessing plant, Bhabha told bewildered U.S. officials the plant was "large enough to process all of the plutonium from the reactors India is now building," and that within five years, "India could produce hundred nuclear bombs per year."

In other words, Bhabha was "hedging" for India given New Delhi's nuclear latency, manifest in its fissile material production capability at the time. The latter half of the 1960s was a pivotal phase in the trajectory of India's nuclear program, as I have argued elsewhere. It is no surprise, therefore, that in its obituary for Bhabha, the London-based Times remarked on India's nuclear weapons potential: "The Indian government has therefore, provided itself with the option of producing plutonium bombs if it so desires in the future." At the memorial lecture in Bhabha's honor at the Royal Institution in London, a year later, Sir John D. Cockcroft, former director of the U.K. Atomic Energy Research Establishment, and Bhabha's colleague from the Cavendish laboratory in Cambridge, stated:

In later years, Homi Bhabha became a central figure in the discussions on proliferation of nuclear weapons, and on the issue as to whether India should develop such weapons. At this time, it was a declared policy of the government of India not to develop nuclear weapons, and Homi Bhabha of course in his official pronouncements followed the policy of his government. However, I always thought, from private discussions, that his attitude was somewhat ambivalent. After the Chinese nuclear bomb test, he certainly wished to put India into the position of being able to make plutonium bombs, if the government so desired.

At the same meeting of the Royal Institution, M.G.K. Menon, who had become the new director of the Tata Institute of Fundamental Research, argued that Bhabha's decision to set up the plutonium reprocessing plant in India "has sometimes been misunderstood," and that the matter ought to be put in the "right historical perspective." Menon argued that because New Delhi's decision to build the reprocessing plant was made prior to the 1962 Sino-Indian war, the plant was for reprocessing fuel rods and not nuclear bombs. However, Menon did not mention that mistrust between India and China had been public since Beijing's 1950 occupation of Tibet, and that border tensions existed between the two countries prior to the 1962 war. More importantly, India knew of the fast advancing Chinese nuclear weapons program before its war with China in October 1962.

In any case, Bhabha's untimely death on Mont Blanc came at a complex time for India: the country was mourning the death of Prime Minister Shastri, who had recently passed away while visiting Tashkent to sign a peace treaty with Pakistan in the wake of the 1965 war, and a young and relatively inexperienced Indira Gandhi took the reins of an economically struggling country.

Documents "Declassified" by the Glacier

Official Indian documents from early 1966, if properly recovered from the Bosson glacier, could shed light on a series of issues concerning India's foreign policy, diplomacy, and nuclear program at the time. According to Rey, the documents found in summer 2016 are of classification "A" (top secret) and "B" (official communication). Some of the documents that she showed me during our meeting in Geneva were indeed marked "Top Secret." Some originated from the East Asia Division of the Indian Ministry of External Affairs, and concerned Indian assessments of Chinese defense production, missile development, and nuclear weapons program. Some documents were meant for

the Indian Ambassador Khub Chand in Stockholm, while others were for Indian embassies and high commissions more generally.

One such Indian document from January 20, 1966 on China's military assessment noted with frustration, "While every attempt has been made to make the estimates as objective and as accurate as possible, it has not been possible to leave out the speculative element completely because of the total absence of official statistics." Another assessment document on Chinese nuclear delivery capability stated: "By the end of 1966, the size of the bomb could be reduced so that it becomes deliverable by an IL-28 light bomber. By the middle of 1967, China could have a nuclear-armed missile with a range of 1,000 miles."

One document marked "Secret" was an analysis entitled "China and the West," which argued that Beijing was aware "that she is no longer treated as a sick giant but commands a healthy respect and a welcome fear from Western Europe." It is likely that the French recognition of China in 1964, and low-level meetings between West German and Chinese officials in Geneva exploring the possibility of diplomatic relations, along with the muted criticism of Chinese nuclear test, enhanced Indian anxieties of losing to China's rising significance in the international system. A French historian has herself recently seen some of these official documents from under the glacier, and described her experience here.

In August 2012, rescue worker Arnaud Christmann found a bag containing diplomatic mail from the Indian Ministry of External Affairs, which he turned over to the police in Chamonix. The jute bag, weighing about 9 kilograms (19.8 pounds), contained newspaper reports from January 1966 that were found largely intact, and was promptly returned to the Indian Embassy in Paris.

Not every item obtained from the crash site is, however, returned. Unfortunately, these official documents from Air India 101 are scattered in residential homes in Chamonix and elsewhere. The documents scavenged from the melting glacier in Chamonix could be a treasure trove of archival evidence for the Cold War historian. At the same time, these could also constitute a disappointing mirage. Most of these documents are in bits and pieces. They are not in proper sequence, and the exact identities of the individuals who carried these documents on the fated Air India 101 "Kanchenjunga" are impossible to establish.

Rey only has a handful of these documents. The rest are buried under the glacier, and some are with other Chamonix dwellers, treasure-hunters, and Alpine climbers, who have stumbled upon these archival materials by sheer chance. Rey regrets the lack of awareness of the historical significance of the documents among some of her fellow residents. People dig for jewelry, and when they find documents, they often discard them. Treasures did emerge from the crash site in the past, as in 2013 and 2014, therefore attracting those largely motivated by greed. Yet, at the same time, many of these documents, which are over 50 years old, are in remarkably good shape, as if deliberately preserved by the glacier.

In other words, the Bossons glacier holds at least some promise for historians. A people's repository— an "Archive of Mont Blanc Crashes"— might be the right step forward from here.

<http://thediplomat.com/2017/06/sino-indian-nuclear-rivalry-glacially-declassified/>

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Saudi Gazette (Jeddah, Saudi Arabia)

Pakistanis Celebrate Youm-E-Takbir

By Ali Al-Ghamdi

June 7, 2017

Pakistanis around the world recently celebrated Youm-e-Takbir (The Day of Greatness) commemoration of Pakistan's detonation of its first nuclear bomb on 28 May 1998. On that day, Pakistan entered the elite nuclear club, which was hitherto a monopoly of a couple of countries, including the permanent members of the United Nations Security Council.

The Nuclear Non-Proliferation Treaty (NPT) came into force in the 1950s after demands for the halt of nuclear tests and explosions after the Second World War. The nuclear states, which are signatories to the NPT, have pledged not to give or transfer nuclear weapons to any other party directly or indirectly. At the same time, the signatories to the pact among the non-nuclear states have also pledged not to attempt to acquire such weapons through any means either direct or indirect. The International Atomic Energy Agency (IAEA) was established with the main objective of preventing the diversion of atomic energy from peaceful uses to making atomic bombs.

The Pakistan Repatriation Council recently organized an event to mark Youm-e-Takbir in Jeddah. Prominent figures from the Pakistani community attended the symposium titled "Nuclear Technology — our need and obligation." The function started with the recitation of a few verses from the Holy Qur'an and was followed by some songs eulogizing Prophet Muhammad (peace be upon him) and a session of speeches.

The speakers voiced their sense of pride in the remarkable achievements made by Pakistan in almost all fields, especially in the fields of atomic energy and military strength so as to ensure the security of the country and the safety of its people. The speakers were of the view that access to atomic energy and nuclear weapons is a deterrent against those who wish to attack Pakistan or threaten its security and safety. The speakers called on the Pakistan government to use atomic energy for peaceful purposes in the fields of health, agriculture and industry so as to take the nation to the ranks of developed countries as well as to improve the living standard of the Pakistani people. They underscored the need for enabling other sisterly Islamic countries to take advantage of Pakistan's atomic energy.

The speakers also dealt with the miserable condition of stranded Pakistanis in Bangladesh, saying that they have been languishing in squalid camps without even having the basic amenities of life since the secession of East Pakistan and the creation of the new state of Bangladesh. However, these hapless people still hope that one day they will be repatriated and rehabilitated in Pakistan, which is the country of their choice, and for which they have made great sacrifices.

It is worth noting that Pakistan's nuclear research had a humble beginning during the period of President Ayub Khan with the sole objective of using it for peaceful purposes. However, India's detonation of its first nuclear bomb in 1974, prompted Pakistani nuclear scientist Dr. Abdul Qadeer Khan to write a letter to the then Pakistani Prime Minister Zulfikar Ali Bhutto. Khan graduated from the Faculty of Science at the University of Karachi, and then went to Europe to pursue his higher studies in Germany, the Netherlands and Belgium. He also worked as senior metal expert at a Dutch company.

In his letter to Bhutto, Khan emphasized that Pakistan would not be able to remain an independent sovereign state without having nuclear weapons. This made Bhutto start serious efforts to making a nuclear bomb. During that period, Bhutto said: "If India built the bomb, we will eat grass, even go hungry, but we will get one of our own." Khan began work on developing a nuclear bomb, which was detonated on 28 May 1998. This led to Western pressure and protests that reached the point of threatening Pakistan with sanctions. However, Prime Minister Nawaz Sharif unequivocally announced that the issue of a nuclear bomb was a matter of life or death for Pakistan and it was not at all negotiable.

During those days, some observers thought that the bomb that was detonated might be the only bomb that Pakistan had. However, Pakistan replied to this by detonating several bombs one by one in consecutive days. This sent a strong signal to the world that Pakistan had become a nuclear state and a full member of the nuclear club. If Pakistan had yielded to Western pressure and the threat of sanctions, it would not have developed a nuclear weapon.

In his speech, PRC Convener Syed Ehsan-ul-Haque urged Prime Minister Nawaz Sharif to establish a Nuclear Research University, bearing the name of Dr. Abdul Qadeer Khan, and to attract talented youth from within Pakistan and other Islamic countries. He stressed that the university should focus on research and studies on the use of atomic energy for peaceful purposes.

He also appealed to the government to restart the process of repatriation and rehabilitation of stranded Pakistanis. To overcome the paucity of funds, he suggested the implementation of the PRC's old proposal for the settlement of stranded Pakistanis on a self-financing basis. He said that the Pakistani high commissioner at Dhaka could be assigned to issue visas for stranded Pakistanis to facilitate their travel and to help them find jobs. The PRC official thanked the audience for their active participation in making the event a lively one.

<http://saudigazette.com.sa/opinion/pakistanis-celebrate-youm-e-takbir/>

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EU Observer (Brussels, Belgium)

EU Should Put Pressure on Belarus Nuclear Project

By Petras Austrevicius

June 5, 2017

If, one clear day, you went up in a hot air balloon over my beloved home town of Vilnius, a Unesco World Heritage site, you would see, not far off, a two-headed monster.

Your eyes do not deceive you. There it is: the Ostrovets Nuclear Power Plant (NPP), with its two reactors, being built just 53km away on the other side of the EU border with Belarus.

The construction started in 2009. One reactor is to go online in 2018 and a second one in 2020. Two more are apparently planned by 2025.

It is being built in flagrant disregard of international safety standards.

It is designed to serve Russia's strategic interests and makes no commercial sense.

It is also being built by an unpredictable dictator with potential nuclear weapons aspirations and the EU institutions, for their part, are doing nothing to try to stop it.

Maros Sefcovic, the European Commission's energy chief, went up in the balloon over the old town in Vilnius last month and he was privately astonished by the proximity of Ostrovets.

When he came back down, he visited the Lithuanian parliament, where he spoke fine words about energy solidarity and independence, but he did not mention the NPP once, leaving MPs in shock.

Unique sight

What he saw was unique in Europe because, according to the International Atomic Energy Agency in Vienna, nuclear plants these days, after so many accidents, ought to be built much further away from population centres.

From 2018 onward, the 1 million people who live in the Vilnius district, meaning one out of three Lithuanians, will have to live in constant readiness of evacuation in case there is an accident.

From next year, the river Neris (called the Viliya in Belarus), which supplies drinking water to Vilnius, Kaunas, and other major Lithuanian cities, will be used to cool the plant's atomic reactors.

We know that Ostrovets is being built in a seismic zone, but we know very little else about it.

Belarus has not respected the UN's so called Espoo and Aarhus conventions on international oversight and impact assessments.

It has refused to conduct Ostrovets stress tests in line with a European Commission agreement that already dates back six years. It has also refused to let MEPs, including a recent delegation that I was due to take part in, visit the site.

Meanwhile, the information that has emerged is worrying.

Alexander Lukashenko, Belarus' autocratic leader, has boasted that: "Ostrovets NPP has to be the cheapest nuclear power plant in the world and must be built in the shortest possible period of time".

Poor safety culture has so far led to at least six incidents and several deaths at the construction site.

On 10 July last year, for instance, the builders dropped a 330-tonne reactor shell while it was being moved.

We know that only because a local resident and opposition activist posted details about it on social media, but, did the shell crack? Was it checked? They say yes, but we do not know if we can believe them.

You might be thinking: "This project, somewhere deep in the forests of eastern Europe, has nothing to do with me".

Ostrovets is 430km from Warsaw, 610km from Helsinki, 860km from Berlin, and 1,500km from Brussels, but these distances are nothing in the nightmare scenario of a nuclear accident.

When the Chernobyl accident occurred in Ukraine in 1986, the winds carried contaminated material to almost all corners of Europe and Scandinavia. It led to some 10,000 birth defects and 10,000 cases of thyroid cancer on the continent over the next three decades.

When the Fukushima accident occurred in Japan in 2011, radioactive material reached the US west coast just two days later.

Russian strategy

Even assuming all goes well, the Ostrovets plant will increase Moscow's power in a region that only recently broke free from its sphere of influence.

It is being built and financed by Russia.

Atomstroyexport, the general contractor, is a subsidiary of the Russian State Atomic Energy Corporation (Rosatom), which loaned Lukashenko \$9 billion (€8bn) of the plant's \$11 billion price tag.

The first two reactors are to have a capacity of 2,340 MW of electricity and to create 1,000 permanent jobs in Belarus.

The cheap Russian electricity, which can be cut off as a tool of political blackmail at any moment, is designed to keep the Baltic States hooked to the old Soviet grid and to undermine projects, such as liquid natural gas terminals, in the region designed to reduce energy dependence on Russia.

Lithuania has taken steps to prevent this. The LNG terminal is already functioning in Klaipeda since end-2014. In April, Lithuania also passed a law that banned electricity imports from unsafe reactors.

There is already a similar law in place in Sweden and one under consideration in Poland.

Belarus does not need all that new electricity and EU states increasingly do not want it, but Rosatom is pressing ahead because Ostrovets is a political, rather than a commercial, project.

Autocratic states

It leaves me to add that the Lukashenko system executed at least one person this year and four last year.

It is the only country in Europe that still has the death penalty.

If you think this is irrelevant, take a look at post-revolutionary Iran. There, an autocratic state which also executes people in a sign of its disregard for international standards, turned civilian nuclear facilities into a clandestine weapons programme.

Could the same happen in Europe?

Belarus inherited Soviet nuclear warheads when the USSR collapsed, but it gave them back to Russia before Lukashenko came to power.

He later said: "That was a grave mistake. We should not have done it. If we had nuclear weapons they [the West] would have treated us differently".

In the end, the EU and the US stopped Iran by imposing economic sanctions and by threatening military action.

But when it comes to Ostrovets, the big EU countries and the EU institutions are happy to look the other way.

Sefcovic is happy to walk off without saying a word.

If the EU thinks that having properly regulated nuclear facilities in France, Germany, or Scandinavia is enough to keep Europe safe even as Russia builds a risky one right on the EU border, then it is kidding itself.

Lithuania, as a condition of its EU entry, closed down the Ignalina NPP because it had unsafe, Chernobyl-type reactors.

My country is still paying a high price for this and has a moral right to expect EU solidarity for its energy security.

But what the Ignalina closure really showed was that nuclear safety is not a national, or bilateral, or even a regional issue - it is a continental one.

EU leverage

The EU has relaxed sanctions on Belarus and is pouring in grants and loans, for instance, from the European Investment Bank, to help local authorities and small businesses in the name of better relations.

In fact, Lukashenko is using that EU financial help to keep economic protesters, such as those who demonstrated against his unemployment tax in March, off the streets. This is leverage.

I call on EU leaders and on the European Commission to make Ostrovets NPP the main topic on the EU-Belarus agenda and to say: “Not a euro-cent more unless you halt this time-bomb of a project in the heart of Europe”.

Lithuania and Poland cannot stop it by themselves, but without concerted EU leadership, we are all that stands between Minsk and Moscow’s political machinations and the safety of every man, woman, and child in Europe.

<https://euobserver.com/opinion/138117>

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South China Morning Post (Hong Kong, China)

How North Korea’s Nuclear Weapons Are Testing Seoul’s Special Ties With the US

By Donald Kirk

June 6, 2017

The annual Forum for Peace and Prosperity, on the South Korean island province of Jeju, left the distinct impression that the North Korean nuclear issue is further than ever from resolution.

Gary Samore, of the Belfer Centre at Harvard and formerly with the Obama administration, suggested in a wide-ranging debate on “the future of geopolitics in East Asia” that the problem may be insoluble. That sense weighs heavily on policymakers in Seoul as well as Washington. How can the two agree on a common approach, and where is South Korea going in its alliance with the US?

Americans and Koreans alike questioned how long their special relationship can endure, despite claims by US Defence Secretary Jim Mattis and Secretary of State Rex Tillerson during visits to Seoul that the two nations are “in lockstep”.

China’s missile tests in Bohai ‘aimed at THAAD’

Chinese participants seemed far more concerned about the US countermissile battery known as THAAD (Terminal High-Altitude Area Defence), set up near Seoul, than about North Korean missile tests. Asked whether the “US pivot” to Asia would continue under the Trump administration, Wang Dong of Peking University railed against the dangers of THAAD’s radar spying on Chinese forces. Japanese military power was also on expert minds. Alexis Dudden, from the University of Connecticut, saw Prime Minister Shinzo Abe longing “to break Japan free” of Article 9 of its pacifist post-war constitution, a warning of the renaissance of Japanese militarism. But she was hopeful about new South Korean President Moon Jae-in’s potential to de-weaponise “the region’s so-called history wars”.

From North Korea to THAAD: What Moon Jae-in’s victory means for Seoul

Moon is open to dialogue with North Korea. US President Donald Trump, by contrast, seems unable to decide what he would prefer – sitting down with Kim Jong-un for a burger or ordering a “pre-

emptive strike” against the North’s nuclear and missile facilities. Moon would doubtless like to persuade Kim to stop test-firing missiles long enough to be able to follow through on gestures towards reconciliation. Trump, meanwhile, is waiting to see if President Xi Jinping (习近平) can restrain North Korea.

How far, however, will Xi want to go against North Korea while battling the perceived danger of THAAD and defending China’s claim, fortified by expanding island bases, to the South China Sea? And how likely is Trump to take matters into his own hands with results that are difficult to anticipate?

North Korean missile tests have so far sparked only censure and porous sanctions, but the threat of a long-range intercontinental ballistic missile capable of carrying a nuclear warhead to the US is deeply disturbing.

Seeing the Chinese unable to restrain Kim, might Trump decide now is the time to act?

This question is sure to test not only the historic South Korea-US alliance but an array of values and ties on multiple levels that bind the two countries. Korean democracy, far from perfect, still comes much closer to the democratic ideal than almost any other nation for which Americans have fought and died since the second world war.

Time for Asian-style diplomacy, not the US, to take the lead on North Korea

Back in Jeju, the danger of reversion to historic colonialism and imperialism permeated the atmosphere. Haruki Wada of Tokyo University perceived “the legacies of colonialism” as a vital problem but offered no solutions other than “apology and persuasion” to redress the wrongs of Japanese colonial rule over much of Asia, and of the exploitation of “comfort women” for Japanese soldiers.

That ominous glimpse of the past was overshadowed by reminders of the US, aided and abetted by Japan, confronting China in a reversion to the bad old days – even as the North Korean leader brandishes the threat of nuclear war.

<http://www.scmp.com/comment/insight-opinion/article/2096976/how-north-koreas-nuclear-weapons-are-testing-seouls-special>

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The National Interest (Washington, DC)

Kim Jong-un Isn’t Crazy and China Doesn’t Have a Solution

By Doug Bandow

June 3, 2017

Admittedly no one should expect linear thinking from President Donald Trump. Still, it was a bit jarring to hear him go from calling North Korea’s leader Kim Jong-un a “pretty smart cookie” and “gentleman” who the president would be “honored” to meet to a “madman with nuclear weapons.”

Not that the recent phone call with Philippine president Rodrigo Duterte was the first time President Trump questioned Kim’s sanity. Last year candidate Trump said Kim was “like a maniac.”

Thankfully President Trump indicated that he didn’t want to use America’s vastly more powerful military against Kim. The president still looks to Beijing for the answer: “I hope China solves the problem. They really have the means because a great degree of their stuff come[s] through China. But if China doesn’t do it, we will do it.” The president didn’t explain what “it” might involve.

No one who pays attention to the Korean Peninsula believes that there is an easy answer to the challenge of a nuclear North Korea. But finding solutions will become even harder if the problem is misdiagnosed.

The North's leaders, starting with founder Kim Il-sung, appear to be eminently rational. His son, Kim Jong-il, wore platform shoes, had bouffant hair, donned oversized sunglasses and was particularly easy to caricature (think "Team America"). Nevertheless, Kim Il-sung, Kim Jong-il and descendent Kim Jong-un have skillfully wielded power, maintained control, deterred the United States and turned their small country into a Weltmacht of sorts.

The human cost has been great, but that's no different than in the Soviet Union and People's Republic of China. In those countries equally ruthless parties and leaders took control and made nations. The North's political system is sui generis, but its participants act in an understandable and predictable fashion.

Indeed, President Trump appeared to accurately assess Kim's skill in retaining power. Not a pretty sight, but so far effective. Even the execution of Kim's uncle and presumed assassination of his half-brother seem to have a cruel logic and likely reflect Kim's fear that China desired a more pliant ruler for the North.

Which means Washington must address why the Democratic People's Republic of Korea desires nuclear weapons. Those weapons offer prestige, yielding (however grudging) international respect. They offer opportunities for extortion. They generate political support from the military, a key domestic constituency. They boost the North's otherwise lackluster military capabilities, most notably creating a credible deterrent to any U.S. attempt at regime change. The latter looks more prescient in the aftermath of the ouster of Libya's Muammar el-Qaddafi, who negotiated away his missile and nuclear programs.

There is no reasoning with a genuine madman. But a discussion could be had with North Korean leadership over its nuclear plans. Admittedly, there's not much hope that Kim and his followers can be talked out of acquiring a sizeable nuclear arsenal—frankly, the benefits for the regime (if not the nation) are strong. However, objectives other than full denuclearization still would be valuable and might be achievable. But negotiation requires treating North Korea's leader as closer to "smart cookie" than "madman."

The president's other questionable assumption is that China can "solve" the North Korean problem. What does the president mean by "solve?" No doubt, most American and South Korean analysts would like to see the North peacefully disarm and reunify with the Republic of Korea, disappearing into the mists of time. But that's a dream, not a solution. It could happen, of course, but isn't likely to happen. Making the perfect the enemy of the good won't do.

In fact, Secretary of State Rex Tillerson told Pyongyang that the administration does not seek regime change. Nevertheless, Kim is likely to be skeptical, having seen Qaddafi's fate after the latter was feted in the West for disarming. Even if Kim happened to believe Tillerson, the latter cannot bind his successor. Another president might turn into the second coming of President George W. Bush, who famously tagged the North as a member of the "Axis of Evil," said he "loathed" Kim Jong-il, and overthrew governments in Afghanistan and Iraq.

Ending North Korea's missile and nuclear programs presumably would be viewed as a grand victory. However, having come this far at such cost, and with little reason to trust the continuing beneficence of the U.S. government, Pyongyang is unlikely to agree absent extreme duress. Even the Trump administration appears to recognize that military force and no-go sanctions are the only options.

President Trump correctly observed that “a great degree of [North Korea’s] stuff come[s] through China.” If Beijing ended all commerce—as well as food and energy aid—then Pyongyang would face extraordinary hardship. But even that doesn’t guarantee capitulation. During the late 1990s a half million or more North Koreans are believed to have starved to death, as the Kim Jong-il government refused to change course. Kim Jong-un could similarly resist change, irrespective of the cost. If so and the regime survives, then what? How would the United States “solve” the problem?

Another possibility is a messy implosion. North Korea resists and the system collapses. Potential consequences include mass hardship and refugee flows, factional military fighting, loose nukes and Chinese intervention. A reconstituted Pyongyang dominated by Beijing might be the result, a solution of sorts, though certainly not the one traditionally desired by either Seoul or Washington. Would the United States and South Korea be prepared to live with those consequences?

Finally, China might do something, such as a further tightening of the economic screws to make its point, without seeking to wreck the regime and system. And Pyongyang might continue its present course, with at most a modest slowdown in pace of weapons tests combined with a professed willingness to talk. How, then, would President Trump “do it,” whatever he considers “it” to be?

His administration might impose more unilateral sanctions and secondary penalties on Chinese institutions dealing with the North Korea. This approach likely would elicit resistance from Beijing and spoil the Mar-a-Lago mood, so to speak. It also might not work, since so far the Kim dynasty has survived every economic escalation. Would the president then view military action as option? Even if the South Korean government said no? Even if full-scale war might result?

Before charging down a policy cul-de-sac that will leave Washington with no alternative than retreat or war, the United States should consider whether there are any alternatives which offer sufficient peace and stability without victory. For instance, an interim accord including verifiable North Korean nuclear freeze and conventional military cutback, U.S. troop reductions and the end of South Korea’s annual military exercises. Negotiations would then be backed by China over a “grand bargain” of sorts: nuclear disarmament, American diplomatic recognition, an all-party peace treaty formally ending the war, U.S. withdrawal of conventional forces, a pledge of no-first-use of nuclear weapons, economic inclusion and more.

An alternative would be to pick up on an idea expressed by candidate Trump: the best way to match a continuing North Korean nuclear program might be for Washington to publicly consider stepping back should South Korea and Japan decide to develop their own nuclear deterrents. That possibility might not bother Pyongyang. But it almost certainly would garner a reaction in China. Such an approach just might spur all sides to try harder to find a negotiated settlement.

What does the president really think about solving the North Korean nuclear crisis? Hard to say. But he seems open to a creative answer, perhaps even employing summitry and counterproliferation. In any case, Washington should proceed assuming that Pyongyang’s rulers are rational and pursuing logical ends. Only by addressing North Korea’s interests is there much chance of defusing the crisis.

<http://nationalinterest.org/blog/the-skeptics/kim-jong-un-isnt-crazy-china-doesnt-have-solution-20984>

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The Japan Times (Tokyo, Japan)

Ban Treaty Offers Chance For a World Free of Nuclear Arms

By Daisaku Ikeda

June 5, 2017

The crucial second round of negotiations on a treaty to prohibit nuclear weapons will take place from June 15 at the United Nations headquarters in New York. Almost 130 countries, or two thirds of U.N. member states, participated in the first round of negotiations held at the end of March, which became the site of vigorous debate with the active participation of civil society.

Nuclear weapons are capable of annihilating humankind and the global ecosystem, and the threat they pose is, if anything, growing. The upcoming negotiations seek to achieve a fundamental breakthrough in this situation.

“We hibakusha have no doubt that this treaty can — and will — change the world.” This statement made by an atomic bomb survivor at the March negotiations was met by very long applause from participants. This expressed a heartfelt support that is shared by many people, regardless of nationality.

On May 22, a draft text for the convention prohibiting nuclear weapons was released by the president of the negotiating conference. Grounded in a deep concern about the catastrophic humanitarian consequences of any use of nuclear weapons, it would prohibit not only the use but also possession and development of nuclear weapons.

The motivating spirit of the convention is expressed in the preamble that includes the words: “Mindful of the suffering of the victims of the use of nuclear weapons (Hibakusha) as well as of those affected by the testing of nuclear weapons ...” This reflects the strong desire of the world’s hibakusha that no one else should ever have to suffer what they have endured.

We must remember that the current state of nuclear confrontation is the product of specific historical processes. It is not an immutable “given” of the international order.

In fact, more than 110 states have chosen security arrangements that do not depend on nuclear arms, by establishing and being part of nuclear-weapon-free zones. Among them are a number of states that once explored the possibilities of nuclear weapons development but relinquished them.

We must squarely face the reality of nuclear-dependent security policies — a fundamentally inhumane approach to security premised on the eventuality that the atrocities of Hiroshima and Nagasaki may be repeated elsewhere.

It is regrettable, however, that the nuclear-weapon states and almost all states that depend on the extended deterrence of their nuclear-armed allies, including Japan, did not participate in the first round of negotiations.

Yet all countries, including nuclear-weapon states and nuclear-dependent states, have expressed deep and shared concern regarding the catastrophic humanitarian consequences of any use of nuclear weapons. This shared concern is cited in the draft convention and, earlier, was contained in the final document unanimously adopted by the 2010 Nuclear Non-Proliferation Treaty (NPT) Review Conference.

Based on this common awareness, all states parties to the NPT are committed “to pursue policies that are fully compatible with the Treaty and the objective of achieving a world without nuclear weapons.”

I strongly hope that the upcoming negotiations will make this explicit commitment the foundation of their deliberations and, with the participation of a growing number of states, crystallize this into the concrete provisions of a treaty to prohibit nuclear weapons.

In this context, the participation of the nuclear-dependent states, particularly Japan, the only country that has experienced nuclear attacks in wartime, will be crucial.

In April 2016, Japan joined with nuclear-weapon states and nuclear-dependent states at the Group of Seven Hiroshima Foreign Ministers' Meeting to issue a joint statement that included the following declaration: "We share the deep desire of the people of Hiroshima and Nagasaki that nuclear weapons never be used again." Japan should uphold this declaration and decide to take part in the next round of negotiations.

The desire for peace emanating from Hiroshima and Nagasaki is nothing other than the desire that no other country become the target or perpetrator of a nuclear attack. A convention to prohibit nuclear weapons would establish this as humanity's shared norm, and Japan's mission lies in doing everything it can to achieve this.

So long as arsenals of nuclear weapons continue to exist on our planet, we will be forced to live with the threat that hair-trigger situations like the 1962 Cuban Missile Crisis may again arise.

To quote U.S. President John F. Kennedy's 1961 address to the U.N. General Assembly, "... we far prefer world law, in the age of self-determination, to world war, in the age of mass extermination."

The efforts of many states and representatives of civil society to engage in constructive debate on the contours of this treaty can be seen as a forerunner to the kind of "world law" envisaged by Kennedy.

A convention prohibiting nuclear weapons will serve as a crucial impetus for fulfilling the disarmament obligations of the NPT. Its adoption will generate decisive momentum for nuclear weapons abolition, and it is thus vital that this be achieved by the end of the second negotiating session on July 7.

It is my hope that this historic treaty will be adopted in a form that fully reflects the voices of civil society.

<http://www.japantimes.co.jp/opinion/2017/06/05/commentary/japan-commentary/ban-treaty-offers-chance-world-free-nuclear-arms/#.WTjZUmRKVTY>

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ABOUT CUWS

The USAF Counterproliferation Center was established in 1998 at the direction of the Chief of Staff of the Air Force. Located at Maxwell AFB, this Center capitalizes on the resident expertise of Air University, while extending its reach far beyond - and influences a wide audience of leaders and policy makers. A memorandum of agreement between the Air Staff Director for Nuclear and Counterproliferation (then AF/XON), now AF/A5XP) and Air War College Commandant established the initial manpower and responsibilities of the Center. This included integrating counterproliferation awareness into the curriculum and ongoing research at the Air University; establishing an information repository to promote research on counterproliferation and nonproliferation issues; and directing research on the various topics associated with counterproliferation and nonproliferation.

The Secretary of Defense's Task Force on Nuclear Weapons Management released a report in 2008 that recommended "Air Force personnel connected to the nuclear mission be required to take a professional military education (PME) course on national, defense, and Air Force concepts for deterrence and defense." As a result, the Air Force Nuclear Weapons Center, in coordination with the AF/A10 and Air Force Global Strike Command, established a series of courses at Kirtland AFB to provide continuing education through the careers of those Air Force personnel working in or supporting the nuclear enterprise. This mission was transferred to the Counterproliferation Center in 2012, broadening its mandate to providing education and research to not just countering WMD but also nuclear deterrence.

In February 2014, the Center's name was changed to the Center for Unconventional Weapons Studies to reflect its broad coverage of unconventional weapons issues, both offensive and defensive, across the six joint operating concepts (deterrence operations, cooperative security, major combat operations, irregular warfare, stability operations, and homeland security). The term "unconventional weapons," currently defined as nuclear, biological, and chemical weapons, also includes the improvised use of chemical, biological, and radiological hazards.

The CUWS's military insignia displays the symbols of nuclear, biological, and chemical hazards. The arrows above the hazards represent the four aspects of counterproliferation - counterforce, active defense, passive defense, and consequence management.