



UNITED STATES AIR FORCE CENTER FOR
**UNCONVENTIONAL
WEAPONS STUDIES**

OUTREACH JOURNAL

Issue No. 1266
2 June 2017

Feature Item

Featured Item: *“Is Iran Mass Producing Advanced Gas Centrifuge Components? Can we even know with the way the Iran deal has been structured and implemented so far?”*. Authored by David Albright and Olli Heinonen; published by the Institute for Science and International Security; May 30 2017

http://isis-online.org/uploads/isis-reports/documents/Mass_Production_of_Centrifuges_30May2017_Final.pdf

The head of Iran’s nuclear program says Iran has the capability to initiate mass production of advanced centrifuges on short notice. The mass production of these centrifuges (or their components) would greatly expand Iran’s ability to sneak-out or breakout to nuclear weapons capability or surge the size of its centrifuge program if the deal fails or after key nuclear limitations end. If Salehi’s statement is true, Iran could have already stockpiled many advanced centrifuge components, associated raw materials, and the equipment necessary to operate a large number of advanced centrifuges. The United States and the International Atomic Energy Agency (IAEA) need to determine the status of Iran’s centrifuge manufacturing capabilities, including the number of key centrifuge parts Iran has made and the amount of centrifuge equipment it has procured. They need to ensure that Iran’s centrifuge manufacturing is consistent with the intent of the nuclear deal as well as the deal’s specific limitations on advanced centrifuges. Moreover, the Iranian statement illuminates significant weaknesses in the Iran deal that need to be fixed.

Table of Contents

US NUCLEAR WEAPONS

- [Upgrading U.S. nuclear missiles, as Russia and China modernize, would cost \\$85 billion. Is it time to quit the ICBM race?](#)
- [A fire broke out in the lab where the plutonium cores of the US's nuclear weapons are built](#)
- [US Accelerates Upgrades for its Arsenal of Nuclear-Armed, Submarine-Launched Trident II D5s](#)
- [US nuclear weapons tests come to YouTube](#)

US COUNTER-WMD

- [GMD Test: Why US Missile Defense Shield May Prove Inefficient in Real Combat](#)
- [Scientists Have Figured Out How to Detect Nuclear Materials Up to 1 Km Away](#)
- [Trump's Proposed Budget Cuts Trouble Bioterrorism Experts](#)
- [Turning Nuclear Weapons into Nuclear Fuel](#)

US ARMS CONTROL

- [Disarmament Diplomacy And The Ban Treaty](#)
- [New Life For New START?](#)
- [How To Achieve Nuclear Disarmament](#)
- [Finland Raises Tactical Nuclear Weapons In NATO Disarmament Conference](#)

ASIA/PACIFIC

- [Asia opts for a replay of cold war nuclear deterrence](#)
- [The Pukguksong-2: Lowering the Bar on Combat Readiness?](#)
- [LOL At EMPs? Science Report Tackles Likelihood Of A North Korea Nuclear Capability](#)
- [Forget North Korea's Nuclear Arsenal. Its Chemical and Cyber Weapons Are Already a Threat.](#)

EUROPE/RUSSIA

- [European Union considering its own nuclear weapons program over fears it cannot rely on Trump's America](#)
- [Britain's Trident nuclear submarines vulnerable to catastrophic hack, think-tank warns](#)
- [Russian MP: We'd use Nukes if US/NATO enters Ukraine](#)
- [Russia Destroys Nearly 99% of Chemical Weapon Stockpile Under CWC - Official](#)

MIDDLE EAST

- [French President Sets Red Line On Syria Chemical Weapons](#)
- [Iran Sanctions Bill Likely To Become Law, Testing Nuke Deal](#)
- [Is Trump All Talk On Iran?](#)
- [OPCW Discredits Itself By Dodging Proper Syria Chemical Attack Probe – Moscow](#)

INDIA/PAKISTAN

- [The Fallout From Pakistan's Nuclear Tests](#)
- [Yaum-e-Takbeer: The Day of Greatness](#)
- [Pakistan under UNSC scanner over nuke material supply to North Korea](#)

COMMENTARY

- [This Successful Nuclear Missile Defense Test Doesn't Mean The US Is Safe From Nuclear Attacks](#)
- [The Risk Of Nuclear Catastrophe Under Trump](#)
- [How Trump's Budget Makes Us All Vulnerable To Bioterrorism](#)
- [How America Can Thwart North Korea's Nuclear Threat](#)

[Return to top](#)

Los Angeles Times (Los Angeles, CA)

Upgrading U.S. Nuclear Missiles, as Russia and China Modernize, Would Cost \$85 Billion. Is It Time to Quit the ICBM Race?

By W.J. Hennigan and Ralph Vartabedian

May 30, 2017

The sky over the turbulent Pacific was pitch-black earlier this month when a Minuteman III missile blasted off from Vandenberg Air Force Base on a column of fire that illuminated the California coastline for miles.

The unarmed missile thundered past the outer reaches of the atmosphere, tracing a fiery arc around the globe before plunging into a lagoon at Kwajalein Atoll in the South Pacific, 4,200 miles away.

The Minuteman III tested May 3 near Lompoc is a critical element of U.S. defense strategy: a fleet of intercontinental ballistic missiles capable of obliterating any spot on Earth with a nuclear blast in 30 minutes or less.

Although the flight test proved Minuteman is still capable of performing its mission, major components of the missile and the control centers used to launch them are Cold War-era relics that have become increasingly expensive to maintain. Spare parts are in such short supply that the military has been known to pull them from museums.

At the same time, Russia and China are upgrading their nuclear capabilities. Pakistan, India and Israel continue to build new nuclear weapons and delivery systems. Air Force officials worry increasingly about the Minuteman's ability to penetrate adversaries' future missile defense systems.

The result is one of the most strategically complex and financially difficult challenges the Trump administration faces in making good on the president's pledge for a "great rebuilding of the armed forces," including the nation's aging nuclear arsenal.

The Pentagon has begun work to replace the Minuteman fleet with a new generation of missiles and launch control centers, but the plan would cost an astronomical \$85 billion, one of the most expensive projects in Air Force history.

Two defense firms will be awarded three-year contracts for \$359 million each this year, with a test flight program scheduled for launch in the mid-2020s.

The tremendous expense of deploying a missile fleet capable in the long term of countering nuclear threats has spawned a debate in the American military establishment: How essential, in the 21st century, are the 400 strategic missiles embedded in silos deep under the plains of Colorado, Nebraska, Wyoming, Montana and North Dakota?

The discussion has opened for review the very essence of the nation's nuclear defense strategy: the "triad" deployment of nuclear weapons, in submarines, strategic bombers and land-based silos, to guarantee the ability to retaliate against any nuclear strike.

The Minuteman III was developed in the 1960s and first deployed in 1970. The nearly 50-year-old hardware is still working fine, but not without extensive maintenance.

"I look at the Minuteman III like a classic car," said Col. Craig Ramsey, commander of the fleet's flight test squadron at Vandenberg. "I love my 1966 Mustang, but it requires a lot of tender loving care and maintenance whether you drive it or leave it in the garage."

At its peak in about 1990, the Air Force fielded 450 Minuteman IIs, 500 Minuteman IIIs and 50 Peacekeeper missiles, a total of 1,000 ICBMs that had more than 2,000 warheads on them. Today's 400 Minuteman missiles each field a single warhead.

Pentagon officials want to replace almost the entire nuclear arsenal, at a cost of up to \$1 trillion. But no component has raised more questions than the replacement of the ICBM fleet, which critics have said is no longer crucial to preventing a nuclear war.

The argument for eliminating ICBMs is stronger than at any time in the past. Advocates of that strategy say submarine-based missiles and strategic bombers have improved their capability and are now more than potent enough to deter an enemy attack.

Former Defense Secretary William J. Perry fired the opening salvo last year, calling for phasing out the entire land-based ICBM force. He argued that its continued deployment is too costly. And with the missiles on continuous alert in order to be able to launch instantly if an enemy launch is detected by satellites and radar, a mistake or faulty warning could trigger an accidental nuclear war.

"The ICBM system is outdated, risky and unnecessary," Perry, who served in the Clinton administration 20 years ago, said in a recent interview. "Basically, it can bring about the end of civilization with a false alarm. It's a liability because we can easily achieve deterrence without it."

Perry has not been alone in expressing doubts about the ICBM program, but senior Pentagon leaders have always been persuaded to keep it. Former Defense Secretary Chuck Hagel called for elimination of ICBMs before entering office and then changed his mind. Trump's Defense secretary, James N. Mattis, questioned the need for the missiles in 2015 when he was a four-star general. But as soon as he was nominated, he began supporting a full-blown modernization of the triad.

The reevaluation of the role of ICBMs in America's defense comes in an era when nuclear weapons are proliferating, not fading away. GlobalSecurity.org director John Pike, who has analyzed U.S. military systems and strategies for more than three decades, says critics "are gaining no traction" in calling for the elimination of the ballistic missile fleet.

The Air Force makes the case that replacing the Minuteman will be less costly than trying to keep its Elvis-era fleet in perfect working order for decades into the future. The nation's strategic forces represent a small slice of defense spending, while providing a large measure of security against an unprovoked attack on U.S. soil.

Air Force leaders also worry that Russia, China and North Korea are investing in new nuclear missile systems that would erode the military edge that the Minuteman has provided with its reliability and accuracy. At some point, they say, the Minuteman's ability to penetrate future missile defense systems could be compromised.

"Nuclear weapons are foundational to our national security," said Maj. Gen. Fred Stoss III, director of operations at the Air Force Global Strike Command. "The ICBMs are the most responsive. They have the quickest launch times. The ICBMs are the most stabilizing leg of the triad."

Eliminating the more than 400 ICBMs and their launch capsules as targets, Stoss said, would allow an enemy to wipe out the rest of the nation's nuclear deterrent — three strategic bomber bases and two strategic submarine bases — with just five nuclear weapons. That leaves the U.S. vulnerable to attack even from "nations with limited arsenals," such as North Korea, Stoss said.

Failing to maintain strategic parity puts the U.S. at a disadvantage with potential adversaries, Stoss added. "Russia has a triad. China is on the cusp of a triad."

Beyond the military arguments, there is the question of cost.

Numerous Pentagon officials and outside experts have warned that the current approach cannot be sustained without significant and sustained increases to defense spending or cuts to other military priorities. The costs for modernization would peak during the mid-2020s and overlap with large increases in projected spending on other weapons that address more immediate threats, such as counter-terrorism, cyberattacks, and space-based technology.

Two years ago, the Pentagon said the new ICBM system, known as the Ground-Based Strategic Deterrent, would cost \$62.3 billion. But outside estimates put it far higher. The Pentagon's independent office of Cost Assessment and Program Evaluation said last year the plan could cost at least \$85 billion.

The costs are likely to climb because of the technological complexity of the program. By comparison, the last time the U.S. fielded a new ICBM, the massive, 10-warhead MX in the mid-1980s, the cost was an inflation-adjusted \$900 million per missile. The new, smaller ICBM and its launch centers will optimistically average out to about \$132 million per missile. Though the MX cost was elevated by its large size and small production numbers, just 50 deployed missiles, it saved money by using the existing launch complex.

"Unless the Defense and Energy departments find a pot of gold at the end of the rainbow or get a loan from the same man or woman who sold Jack his magic beanstalk beans, I do not believe the current spending plans are feasible," said Kingston Reif, director for disarmament and threat reduction policy at the Arms Control Assn. in Washington. "I think the ICBM leg of the triad is by far the least valuable leg of the triad, and the effort to sustain it should reflect that."

Col. Heath Collins, Air Force program manager for the ICBM replacement program, said a new missile program will need an all-new command-and-control system, meaning full replacement of the old analog computers that now operate the Minuteman system — and that's only the start.

One of the biggest costs will be the guidance system, notes Aloysius G. Casey, a retired general who was the program manager for the MX missile.

The MX guidance system, which cost \$10 million to \$12 million per missile, had 19,401 parts packaged inside a device the size of a basketball. The device was so accurate that engineers at the time said it could detect variations in the rotation of Earth while it was on the silo, relying on mechanical gyroscopes suspended in a fluid.

Today, it would be vastly cheaper to use a GPS guidance system, Casey said. The satellite-based navigation system is used on a large range of conventional weapons systems and is a standard feature of smartphones.

But critics fear that GPS satellites could be attacked or their signals jammed or spoofed. The upshot is that any guidance system is almost sure to require a massive expenditure.

Advocates say the shocking price tags are the cost of doing business in a dangerous world currently engaged in a new technology race. There are few precedents on which to judge it, Collins said. "It is the most complex program that I've ever been a part of."

<http://www.latimes.com/nation/la-na-new-icbm-2017-story.html>

[Return to top](#)

Business Insider (New York, NY)

A Fire Broke Out In the Lab Where The Plutonium Cores of the US's Nuclear Weapons Are Built

Author Not Attributed

May 27, 2017

A recent fire has put a national laboratory's ability to operate safely into question.

The Defense Nuclear Facilities Safety Board announced Friday that it will hold a hearing next month to discuss the future of the Los Alamos National Laboratory, the Santa Fe New Mexican reported. The board is an independent panel that advises the U.S. Department of Energy and the president.

A fire broke mid-April at the lab's PF-4 plutonium building where the plutonium cores of nuclear weapons are produced. Lab officials said that the fire was put out quickly and only caused minor injuries.

According to the report, the board is unsure if the lab is fit to continue to operate and handle increasing quantities of plutonium in coming years after a series of problems with management in the maintenance and cleanup of the dangerous materials.

The Department of Energy has announced plans to increase manufacturing of the plutonium pits at Los Alamos over the next decades. President Donald Trump's budget proposal will also increase funding for weapons work in the next fiscal year.

The moves make local nuclear watchdog groups uneasy.

"Fattening up our already bloated nuclear weapons stockpile is not going to improve our national security," said Jay Coghlan, the director of Nuclear Watch New Mexico, in a news release issued Friday. "New Mexicans desperately need better funded schools and health care, not expanded plutonium pit production that will cause more pollution and threaten our scarce water resources."

The board will have the chance to get the opinion of a number of experts on the matter at its June 7 hearing.

<http://www.businessinsider.com/ap-us-nuclear-labs-future-up-in-the-air-after-recent-fire-2017-5>

[Return to top](#)

Scout.com (Minnetonka, MN)

US Accelerates Upgrades for its Arsenal of Nuclear-Armed, Submarine-Launched Trident II D5s

By Kris Osborn

May 28, 2017

Nuclear-Armed Trident II D5 missiles rest in 44-foot long missile tubes built into ballistic missile submarines quietly patrolling the undersea domain - to ensure security and peace.

The Navy is beginning the process of evaluating additional upgrades and technical adjustments to the sub-launched Trident II D5 nuclear weapon such that it can serve for decades well beyond its current service life extending to 2040.

The Navy has already been working on technical upgrades to the existing Trident II D5 in order to prevent obsolescence and ensure the missile system remains viable for the next several decades.

The US Navy is accelerating upgrades to the nuclear warhead for its arsenal of Trident II D5 nuclear-armed submarine launched missiles -- massively destructive weapons designed to keep international peace by ensuring and undersea-fired second-strike ability in the event of a catastrophic nuclear first strike on the US.

Navy Vice Adm. Terry Benedict, director of Navy Strategic Systems Programs, told lawmakers about a long-term sustainment of the triad's sea-based leg.

"While our current life-extension efforts will sustain the D-5 [Trident submarine-launched ballistic missile] system until the 2040s, the Navy is already beginning to evaluate options to maintain a credible and effective strategic weapon system to the end of the Columbia class service life in the 2080s," Benedict said.

The Navy has modified an existing deal with Charles Stark Draper Laboratory has to continue work on the missile's MK 6 guidance system, an agreement to continue specific work on the weapon's electronic modules. The modification awards \$59 million to the firm, a DoD statement said.

As part of the technical improvements to the missile, the Navy is upgrading what's called the Mk-4 re-entry body, the part of the missile that houses a thermonuclear warhead. The life extension for the Mk-4 re-entry body includes efforts to replace components including the firing circuit, Navy officials explained.

Navy and industry engineers have been modernizing the guidance system by replacing two key components due to obsolescence – the inertial measurement unit and the electronics assembly, developers said.

The Navy is also working with the Air Force on refurbishing the Mk-5 re-entry body which will be ready by 2019, senior Navy officials said.

Navy officials said the Mk-5 re-entry body has more yield than a Mk-4 re-entry body, adding that more detail on the differences was not publically available.

The missile also has a larger structure called a release assembly which houses and releases the re-entry bodies, Navy officials said. There is an ongoing effort to engineer a new release assembly that will work with either the Mk-4 or Mk-5 re-entry body.

The Trident II D5, first fired in the 1990s, is an upgraded version of the 1970s-era Trident I nuclear weapon; the Trident II D5s were initially engineered to serve until 2027, however an ongoing series of upgrades are now working to extend its service life.

The Navy is modernizing its arsenal of Trident II D5 nuclear missiles in order to ensure their service life can extend for 25 more years aboard the Navy's nuclear ballistic missile submarine fleet, service leaders said.

The 44-foot long submarine-launched missiles have been serving on Ohio-class submarines for 25 years, service leaders explained.

The missiles are also being planned as the baseline weapon for the Ohio Replacement Program ballistic missile submarine, a platform slated to serve well into the 2080s, so the Navy wants to extend the service life of the Trident II D5 missiles to ensure mission success in future decades.

Under the U.S.-Russia New START treaty signed in 2010, roughly 70-percent of the U.S.' nuclear warheads will be deployed on submarines.

Within the last several years, the Navy has acquired an additional 108 Trident II D 5 missiles in order to strengthen the inventory for testing and further technological development.

Trident II D5 Test

Firing from the Atlantic Ocean off the coast of Florida last year, a specially configured non-armed "test" version of the missile was fired from the Navy's USS Maryland. This was the 161st successful Trident II launch since design completion in 1989, industry officials said.

The missile was converted into a test configuration using a test missile kit produced by Lockheed Martin that contains range safety devices, tracking systems and flight telemetry instrumentation, a Lockheed statement said.

The Trident II D5 missile is deployed aboard U.S. Navy Ohio-class submarines and Royal Navy Vanguard-class to deter nuclear aggression. The three-stage ballistic missile can travel a nominal range of 4,000 nautical miles and carry multiple independently targeted reentry bodies.

The U.S. and UK are collaboratively working on a common missile compartment for their next generation SSBNs, or ballistic missile submarines.

The 130,000-pound Trident II D5 missile can travel 20,000-feet per second, according to Navy figures. The missiles cost \$30 million each.

The "Bulletin of the Atomic Scientists" further describes the weapon -- "The Trident D5s carry three types of warheads: the 100-kiloton W76/Mk-4, the 100-kiloton W76-1/Mk-4A, and the 455-kiloton W88/Mk-5 warhead, the highest-yield ballistic missile warhead in the U.S. arsenal."

<http://www.scout.com/military/warrior/story/1707164-navy-extends-sub-launched-nuclear-weapon-2080>

[Return to top](#)

The Australian Financial Review (Melbourne, Australia)

US Nuclear Weapons Tests Come to Youtube

By Christine Hauser

May 30, 2017

'When people could realise how much energy is released and how much damage they can do, maybe they would think twice,' says Gregory Spriggs, after the release of US nuclear test videos. Lawrence Livermore National Laboratory

The cameras shudder as blinding light flashes across the earth. Deformed white clouds balloon and mutate from the force of the nuclear test explosions.

These are some of the images captured in raw footage of bomb tests carried out by the United States between 1945 and 1962 in Nevada and the Marshall Islands. For the first time, the footage is available in an online archive after some of about 10,000 nuclear testing films were restored, scrutinised and declassified in a project by the Lawrence Livermore National Laboratory in California.

The bulk of the videos, some only seconds long and others just over seven minutes, had been stored at Los Alamos National Laboratory in New Mexico. But the experts in Livermore, about 40 miles south-east of San Francisco, have been working for years to retrieve and preserve the films, which over time had begun to turn brittle or curl, and then to create digital imprints.

So far this week more than 60 films of the nuclear tests were published by the Livermore lab's YouTube account, and more will be added. They offer an evolving glimpse of the closest that most people (one hopes) will ever get to a nuclear blast.

"It's just unbelievable how much energy is released," said Dr Gregory D. Spriggs, a weapons physicist in charge of the project at Livermore, in a statement accompanying the release of the first batch of films.

"We hope that we would never have to use a nuclear weapon ever again," he said. "I think that if we capture the history of this and show what the force of these weapons are and how much devastation they can wreak, then maybe people will be reluctant to use them."

Years of experimentation

The films intersect with the history of the nuclear program. After the United States dropped atomic bombs on two cities in Japan in 1945, killing hundreds of thousands of people, it embarked on years of experimentation with its growing nuclear arsenal, conducting 210 atmospheric nuclear tests on Pacific islands and in the Nevada desert from 1946 to 1962.

Many thousands of soldiers and sailors – some estimates say as many as 400,000 – observed the explosions on the sea or in trenches a few miles from the sites.

"You feel the heat blast from it," said Frank Farmer, who witnessed 18 atomic detonations in 1958 while stationed on a ship in the Pacific, according to a Times report last year. "It's so bright you actually see your bones in your hands."

After a 1963 treaty banned atmospheric tests, the United States started experimenting underground.

For each of the 210 tests conducted before the ban, multiple cameras were used. That means an estimated 10,000 films were created, Livermore's statement said. So far, the laboratory has located about 6000 and scanned about 4000 of them. The 64 films published on YouTube are among the 750 that have so far been declassified, it said.

There is still much work to be done.

The mission of the Livermore facility is to ensure that the safety, security and reliability of the US nuclear deterrent is maintained. Its work falls under the National Nuclear Security Administration, which is part of the Energy Department.

Spriggs said that the aim of the work on the films was to use modern imaging technology to verify data about shock waves produced by the explosions to a degree that was not possible in the 1950s.

Shock waves

Questions about shock waves, such as their intensity and speed, are a matter of life and death. It indicates where the damage from a nuclear bomb would be inflicted over a certain distance. As the force travels, it leaves a wake of destruction but gets weaker and weaker until it becomes a sound wave.

The laboratory is working with archivists, film restorers, software developers and other scientists on the project.

The United States no longer does nuclear testing, relying instead on experimental data from computer models, then comparing it with the data derived from the testing period of its history. The aim is to reduce the uncertainty between the two, and then use the latest data as a benchmark for scientists.

"So everything we are asked to calculate in terms of emergency preparedness, we are being asked 'what is going to happen if it is dropped downtown' or whatever," Spriggs said. "If we can't believe our computer codes, we can't give the government an accurate estimate of this and how many people will get hurt." Analysing the films will give them more confidence in the answers, he said.

In one detonation film, showing Operation Dominic-Housatonic over more than seven minutes, the fireball swells to several miles across, suspended in the sky.

"When people could realise how much energy is released and how much damage they can do, maybe they would think twice," Spriggs said. "It is a deterrent. We maintain the stockpile hoping that we never have to use it."

<http://www.afr.com/news/policy/defence/us-nuclear-weapons-tests-come-to-youtube-20170319-gv1opx>

[Return to top](#)

Sputnik (Moscow, Russia)

GMD Test: Why US Missile Defense Shield May Prove Inefficient in Real Combat

Author Not Attributed

May 31, 2017

The US Air Force's recent Ground-based Midcourse Defense (GMD) test wasn't directly connected with the upsurge in North Korea's missile activities, military expert Viktor Murakhovsky told RIA Novosti, explaining why he thinks that the development of the GMD is largely a waste of money.

Washington's latest test of its intercontinental ballistic missile interceptor system was hardly prompted by North Korea's missile activities, Russian military expert and journalist Viktor Murakhovsky told RIA Novosti, adding that the operation was planned in advance.

On Tuesday, the US Air Force successfully carried out the first live-fire test of its Ground-based Midcourse Defense (GMD) system, intercepting an intercontinental ballistic missile (ICBM) target over the Pacific Ocean.

"This system is vitally important to the defense of our homeland, and this test demonstrates that we have a capable, credible deterrent against a very real threat," Vice Admiral Jim Syring, the director of the Missile Defense Agency, said in an official statement.

During the test, the target was launched from the Reagan Test Site on Kwajalein Atoll in the Republic of the Marshall Islands. The target was tracked by the Command, Control, Battle Management and Communication (C2BMC) system and the Sea-Based X-band radar, positioned in the Pacific Ocean. Then the target tracking data was transferred to the GMD system that intercepted the ICBM-class target.

While Reuters called the test a "major milestone for a program meant to defend against a mounting North Korean threat," Murakhovsky believes that it was not actually aimed at deterring Pyongyang in the first place.

"I will remind you that [the Pentagon] started to develop this system under [US] President [Bill] Clinton," Murakhovsky told RIA Novosti. "This program envisaged several stages which have been systematically implemented, and I would not link this with any political context."

The expert explained that the first phase of the program envisions the deployment of 50 interceptors with a kinetic warhead, capable of intercepting a total of 10 intercontinental ballistic missiles (ICBMs). According to Murakhovsky, the Pentagon hopes to accomplish this task by 2021.

At the same time, however, the military expert threw the efficiency of the GMD into doubt: he believes that the investments poured by Washington into the development of the system do not correspond to its actual ability to intercept ICBM-class targets.

"It is possible to shoot down up to 10 ICBMs simultaneously in theory only," Murakhovsky said. "If one looks at yesterday's test one should keep in mind that it was conducted on a test track [under controlled conditions]: it was known which missile would fly and where from, so they were prepared for it in advance, which never happens in a real combat."

"Therefore, it is completely impractical, in my opinion, to spend so much money on this system," the military expert underscored.

It appears that University of Pittsburgh professor of international relations Michael Brenner shares a similar opinion.

Speaking to Sputnik, Brenner stressed that no ballistic missile defense system could guarantee defense against even a handful of intercontinental ballistic missiles (ICBMs) armed with nuclear or thermonuclear warheads.

"Ever since Ballistic Missile Defense (BMD) was first thought about seriously in the 1960s, it could not counter one cardinal truth. No one will ever launch nuclear weapons in the uncertain belief/hope that they have come up with a way to defend themselves 100 percent against retaliation," Brenner noted.

For his part, professor of neuroscience and political commentator John Walsh called attention to the fact that US defense contractors have always been promising Washington to create an invulnerable missile defense shield. While the task has yet to be accomplished, the military industrial complex continues to receive big investments from the US government.

"We have been told repeatedly since the 1950s that a successful missile defense is just around the corner. And it was true each time because each time Raytheon and others made a bundle from it," Walsh told Sputnik.

According to open sources, the GMD missile defense complex entered into service back in 2005. It is designed to intercept intercontinental ballistic missiles and their combat units in outer space beyond the Earth's atmosphere.

At present, 30 anti-missile rockets are deployed in Alaska and California to protect the continental territory of the United States; another 15 missiles are expected to be completed in 2017.

<http://www.afr.com/news/policy/defence/us-nuclear-weapons-tests-come-to-youtube-20170319-gv1opx>

[Return to top](#)

Science Alert (Canberra, Australia)

Scientists Have Figured Out How to Detect Nuclear Materials Up to 1 Km Away

By Andrew Stapleton

May 26, 2017

We need this.

For the first time, scientists have demonstrated that they can detect radiation without having to get close to the source – as far as 1 kilometre away (0.62 miles).

Right now, the only way of testing if something is radioactive is to get a detector very close to it, which poses the risk of radiation exposure or, in the case of a potential nuclear 'dirty' bomb, at whole lot worse. Being able to detect nuclear materials from a safe distance could change how we clean up meltdowns and figure out how habitable places like Chernobyl are in the future.

Although the ability to detect radiation from a safe distance has been predicted for some time, this is the first time such capability has actually been demonstrated.

Using high power, pulsed electromagnetic (EM) waves from a device called a gyrotron, researchers are able to sample the air surrounding an object to see if they can detect any radiation.

A key part of this technique is the generation of short-lived plasma at the point where the electromagnetic beam is focused.

"The experiment clearly shows that it is surely possible to extend the detection range up to 1 kilometre in the same frequency that we used," one of the team, Eunmi Choi from Ulsan National Institute of Science and Technology in South Korea, told ScienceAlert.

"Our experiment suggests that detecting the existence of radioactive material in long distance can be possible. Especially, a high radiation field where not only human beings but also robots cannot access, [such as] dirty bomb detection in the region of suspicious activity."

By creating an intense electromagnetic pulse and focusing it next to an object, the researchers were able to create a plasma. Then, by simply watching how the plasma behaved after it was formed, they could figure out if there were any radioactive particles nearby.

Plasma is the fourth form of matter, alongside solid, liquid and gas, and is formed when gas molecules are blasted with enough energy that they lose some electrons.

Plasmas are relatively common – they're formed in our Sun as it undergoes nuclear fusion, as well as in lightning strikes, and they are the reason the northern lights glow.

If there were no radioactive material nearby, the plasma slowly turned back into normal gas. But next to radioactive material, the plasma turned back into normal gas almost instantaneously.

By increasing the size of the antenna, used to focus the beam to create the plasma, and with low air turbulence the team says this method has the potential to detect radiation from a distance of 1 kilometre.

And they're not just saying that for effect, they did the calculations.

Choi is hopeful that the finding could also inform fundamental research into plasma physics, and make dealing with exposed nuclear materials a much safer exercise in the future.

"According to our experimental work, the required power for plasma breakdown is much below that theoretically predicted when the radioactive material is present,"

Choi told ScienceAlert, "which opens a new, interesting regime in gas discharge physics."

The research was published in Nature Materials.

<https://www.sciencealert.com/scientists-uncover-method-to-detect-nuclear-materials-from-up-to-one-kilometre-away>

[Return to top](#)

The New York Times (New York, NY)

Trump's Proposed Budget Cuts Trouble Bioterrorism Experts

By Emily Baumgaertner

May 28, 2017

President Trump has promoted his first budget proposal as placing one mission above all else — keeping America safe. But the president has drawn a narrow definition of national security, and one aspect of defense would actually receive less money: protecting the nation from deadly pathogens, man-made or natural.

To help offset a 10 percent increase in military spending, much of the government would take serious hits, including agencies tasked with biosecurity.

The Office of Public Health Preparedness and Response, which tracks outbreaks of disease, would be cut by \$136 million, or 9.7 percent. The National Center for Emerging and Zoonotic Infectious Diseases — a branch of the Centers for Disease Control and Prevention that fights threats like anthrax and Ebola — would be cut by \$65 million, or 11 percent.

The C.D.C.'s Center for Global Health would lose \$76 million, or 18 percent. Its Emergency Operations Center, which conducts real-time monitoring of outbreak responses, and its Select Agents Program, which sets regulations in lethal toxin labs and helps researchers stay ahead of bioterrorists, face unspecified cuts as well.

Experts in biological threats are reacting with alarm.

"It's horrific — worse than I expected," says J. Stephen Morrison, the director of the Global Health Policy Center at the Center for Strategic and International Studies. "They're just gutting things, overlaying salt upon key institutions, with devastating human impact."

"When you add those cuts up," he added, they "will inevitably impact health security."

Republicans in Congress are no less critical.

"Sometime in the president's term, you will have a pandemic," Representative Tom Cole, Republican of Oklahoma, told the president's budget director, Mick Mulvaney, at a House budget hearing on Wednesday. "You will have a Zika, you will have an Ebola," Mr. Cole said.

"Cutting the Centers for Disease Control, I think, leaves you very vulnerable and the American people very vulnerable," he said.

Over all, the C.D.C.'s budget would be cut 17 percent. Dr. Thomas R. Frieden, who recently retired as the director of the C.D.C. and led its 2014 Ebola response, sent more than a dozen bullet points on Twitter last week cataloging how the proposed budget was "Unsafe at Any Level Of Enactment."

Trump administration officials say they are trying to refocus scientific research in an era of domestic austerity. Too much federal science is competing with work that could be done in the

private sector, they say. Under the president's budget, the National Institutes of Health at large would be cut 18 percent. Within that, the National Institute of Allergy and Infectious Diseases, which handles Zika, Ebola and H.I.V./AIDS vaccine research, would lose 18 percent of its budget.

"The administration wholeheartedly believes in the commitment to research," Mr. Mulvaney said Wednesday at the House budget hearing. "We'd like to see more focus on what they call basic research, which is research further away from the marketability of products because that is one of the gaps that the government can and should fill."

The targeting is remarkably specific. At the N.I.H., the Fogarty International Center, a small program that in part trains foreign leaders in pandemic response, would be eliminated. Thousands of scientists and global health professionals rallied on Capitol Hill in April to protest the plan after a list of programs targeted for eradication was released.

"They're making a very radical statement," Dr. Morrison said. "The big picture is a movement toward suspicion of international programs. The administration is threatening to abandon multilateralism in a big way."

Global health programs at the State Department and the United States Agency for International Development would be cut by at least a quarter.

"Our operations must become more efficient, and our assistance must become more effective," Hari Sastry, the director of the State Department's Office of U.S. Foreign Assistance Resources, told reporters on Tuesday. "Our primary mission is going to remain advocating for the national interests of our country."

Military and border patrol spending will increase, if Mr. Trump's request is funded. But scientists warn that a \$1.6 billion project to begin constructing a southern border wall will not keep out the most lethal outbreak of bird flu in history, which recently killed 40 percent of patients in China, nor will it keep out Ebola, which has resurfaced in the Democratic Republic of Congo, with 37 suspected cases this month.

"The next weapon of mass destruction may not be a bomb," said Lawrence O. Gostin, the director of the World Health Organization's Collaborating Center on Public Health Law and Human Rights. "It may be a tiny pathogen that you can't see, smell or taste, and by the time we discover it, it'll be too late," Mr. Gostin said.

"The closed-border, highly nationalistic, America-first vision is not the world's scientific view of how to keep a population safe and healthy," he said.

The president's requests on biomedical research and defense are likely to be greeted skeptically by Congress, which ultimately controls spending levels. Lawmakers in both parties have greatly increased funding for the N.I.H. budget, and Georgia's two senators, both Republicans, have protected the C.D.C. and its Atlanta headquarters.

Senator John McCain, Republican of Arizona, called the Trump proposal "dead on arrival." And in the House budget hearing on Wednesday, Mr. Cole pressed Mr. Mulvaney on proposed cuts to the disease surveillance program.

<https://www.nytimes.com/2017/05/28/us/politics/biosecurity-trump-budget-defense.html? r=0>

[Return to top](#)

Interesting Engineering (Wilmington, DE)

Turning Nuclear Weapons into Nuclear Fuel

By Maverick Baker

May 27, 2017

Researchers are working with government agencies around the world to dismantle the abundant nuclear stockpile and turn them into nuclear fuel. In today's world, there is a growing concern over the threat of nuclear war. In history, nuclear warheads have only been used in war two times- both from the US, and both proved incredibly devastating and deadly.

Since World War II, many countries around the world began to develop programs to build weapons of mass destruction, many with malicious intent. The geopolitical tension after WWII prompted the production of tens of thousands of nuclear weapons. Thankfully, since then, most have been dismantled. However, instead of wasting the radioactive isotopes within the weapons, governments around the world are turning nuclear weapons into nuclear fuel.

Over 14,900 Nukes are Still Active

In the 1970's, the world's global warhead inventory staggered over 70,000 weapons. Since then, there has been an ongoing push to eliminate weapons of mass destruction (WMD). Over the years, more than 55,000 nuclear weapons have been dismantled. Despite the efforts, an estimated 14,900* nuclear warheads remain active in the world. Nuclear weapons pose an imminent threat to all life forms on Earth.

Currently, efforts continue to eliminate the production of nuclear weapons. Although, the stockpiles still remain an active threat to all of humanity. Fortunately, governments around the world are collaborating to dismantle thousands of weapons. Much of the fuel will be and has already been used to power nuclear power generators. It is an ongoing effort that is showing significant reductions in the number of WMD's. The World Nuclear Association states,

Since 1987 the United States and countries of the former USSR have signed a series of disarmament treaties to reduce the nuclear arsenals by about 80%.

Mutually Assured Destruction

For obvious reasons, an abundance of nuclear weapons in the world has the potential to result in an utterly vile catastrophe. Currently, the world exists in a state of mutually assured destruction. Should any country use nuclear weapons, a retaliative nuclear strike is imminent. Today, missiles bearing nuclear warheads are no longer bound to secret underground silos. The weapons are mobile and are strategically placed around the world. Carried on planes, boats, submarines, or otherwise, there is no way for a government to disable another country's nuclear arsenal with one attack.

Recognizing the predicament, many countries are disassembling their nuclear weapons. However, instead of wasting the highly radioactive material inside, the material is being used to power nuclear power plants.

Megatons to Megawatts Program

Completed in 2013, the United States-Russia Highly Enriched Uranium Purchase Agreement, popularly referred to as the Megatons to Megawatts Program, was an agreement that oversaw the dismantlement of over 20,000 nuclear weapons. Proposed during the 1990's, the program "Megatons to Megawatts" would oversee the conversion of weapons of mass destruction to usable energy for civilian use.

The program would allow the United States to purchase low-enriched uranium (LEU) derived from 500 metric tons (MT) Russian weapons-origin HEU.

Converting Nuclear Weapons into Useable Fuel

Weapons-grade uranium is highly enriched to levels of over 90% concentrations of U-235 (the fissile isotope). Weapons-grade plutonium (Pu-239) staggers over 93% purity. Its unstable properties make it highly radioactive, giving it the potential to heat up to critical temperatures. The elevated temperatures result in more nuclear reactions within the Uranium. As a result, more radiation is released. The HEU is ideal for weapons since it can react incredibly violently, resulting in a decimating atomic blast.

The instability is necessary to create the infamous explosions nuclear weapons are renowned for. However, the concentration is far too great for commercial nuclear power plants to handle safely. To be converted into nuclear fuel, the HEU must be diluted.

Diluting HEU

Before reaching the reactor, enriched Uranium must be diluted to lower its temperatures, making the isotope less reactive. The procedure involves blending the weapon-grade material with already spent nuclear fuel. The highly enriched uranium (HEU) of over 90% is taken down to just 5% enrichment. The addition of extra material prevents the uranium from dangerously overheating, causing more fission, and more ionizing radiation

The process begins at the nuclear weapon. The HEU metal must be carefully removed from a warhead. The process is extremely dangerous and requires precision machines to dismantle and handle the radiative material. The radiation is far too great for a human to perform the operation. Once extracted, the metal is machined into shavings where it can then be oxidized.

Uranium is highly soluble, meaning it easily dilutes in water. However, in an oxidized state, it becomes insoluble. In preparation for shipping, uranium must be oxidized so, in the event of a leak, the radioactive isotope will not leach and contaminate water sources. After oxidizing, the Uranium is fluorinated.

After fluorination, the resulting highly enriched uranium hexafluoride is mixed in a gaseous stream with slightly enriched uranium (spent nuclear fuel) to form LEU (Low Enriched Uranium) suitable for use in commercial nuclear reactors.

Bombs to Energy Production

Once dismantled and diluted to a safe operating temperature, the radioactive material that was once housed in a nuclear weapon can be used inside a nuclear power plant. For the last two decades, using dismantled nuclear weapon material has become an integral part of energy production in the United States.

The materials salvaged from the bombs for energy production at the time accounted for 50% of the nuclear fuel and about 10% of the electricity produced in the United States.

"It's a great, easy source" of fuel, says Marina V. Alekseyenkova, an analyst at Renaissance Capital and an expert in the Russian nuclear industry.

Megatons to Megawatts Disarms 20,000 Nuclear Weapons

Over the 20 year period, the program generated an energy equivalence of over 200 million tons of fossil fuels. The budget of Megaton to Megawatt program was accumulated US \$13 billion, double the amount of money that was produced from the energy obtained from the recycled material. Economically, the project failed. However, it was never intended to act as a means of revenue.

Instead, the program served as a revolutionary platform to rid the world of the plethora of nuclear weapons left over from the Cold War. With over 500 metric tonnes of HEU removed from nuclear arsenals, the project oversaw the dismantlement of nearly 20,000 nuclear weapons. As a result, it is considered as one of the world's most successful nuclear threat reduction programs.

The Megatons to Megawatts agreement served as proof that countries can resolve differences in lieu of greater economic and political interest. Shifting the use of radioactive material from bombs to energy production presents an incredible alternative to curb the proliferation of nuclear warheads.

One Bomb can Power a City for Hours

In the year of 2015, the United States still held approximately 2000 deployed warheads, 2000 reserve warheads, and 2000 waiting to be dismantled.

According to a study conducted by a Stanford University student, Nikolas Martelaro, just one bomb has enough energy to supply a city for hours. Converting the energy of the bomb dropped on Nagasaki (named Fat Man) into pure energy yields 8.4×10^{13} Joules. If just 66% of the energy can be harvested as heat, the bomb has enough energy to supply the Los Angeles metropolitan area with power for 1.1 hours.

Using the same conversations, Martelaro estimates that if the energy from the USA's deployed arsenal is reclaimed as electricity, the energy is sufficient enough to power LA for almost 8 years.

The US and Russia still hold thousands of more nuclear weapons awaiting disarmament and others that are kept as spares. Using a fraction of the world's nuclear stockpile could power the world for many years to come- if countries are willing to partake.

Future Feasibility

Although the Megaton to Megawatt program successfully oversaw the dismantlement of tens of thousands of bombs, without the willingness of other countries to partake in similar programs, the world's nuclear arsenal will still remain in large quantities. However, it should remain in the hands of Russia and the United States to lead similar initiatives. According to a study conducted by Stanford University,

"The United States' 7,260 warheads and Russia's 7,500 warheads combine to comprise more than 90% of the world's nuclear weapons." The paper continues, "The roughly 2,000 operational warheads that each country deploys are more than sufficient to obliterate the planet."

Without the formation of a nuclear pact to dismantle nuclear weapons, it is unlikely that countries, especially ones other than the USA and Russia, will actively reduce their nuclear weapon arsenals with the intention to generate electricity. Although with the constant discouragement of new nuclear development, it is likely there will not be a need for such an extensive nuclear disarmament pact on the similar scale of the Megaton to Megawatt agreement.

Why Nuclear

The topic of nuclear science is heavily debated and often scrutinized by the general public. However, it is a critical component of today's modern society. From metal detectors, fire alarms, medical equipment to power generation, nuclear science is an integral part of the functionality of modern day civilization.

Though there are many stigmas associated with nuclear science, nuclear power remains a reliable and safe alternative to fossil fuel production. Although, in history, there have been a handful of accidents revolving around nuclear reactors. The two most prominent mishaps, that of Chyrrnoble and Fukushima, were both a result of strict violations of protocol that are in place to prevent such

disasters. The reactors were outdated and government agencies ignored strong recommendations to improve safety and backup measures.

When employed responsibly, nuclear power generation is an effective means of energy production. In the United States, it accounts for approximately 20% of the total energy production. However, advancements still must be made to house the radioactive waste that is produced. The technology is far from perfect, although for more than half a century it has provided a substantial amount of electricity around the world.

In the future, it is more than likely the topic of nuclear power generation will likely be scrutinized for many years to come. However, the technologies should be scrutinized so improvements can continue to be made.

Though the stigma remains, nuclear reactors have contributed in ridding the world of 20,000 nuclear weapons. However, it will take significantly more effort to further reduce the world's nuclear stockpile. Fortunately, it remains on the decline, but with rising tensions building around the world, one can only hope that a project as extensive as the Megaton to Megawatt program will not be necessary again.

<http://interestingengineering.com/turning-nuclear-warheads-into-nuclear-fuel/>

[Return to top](#)

Arms Control Wonk (Washington, DC)

Disarmament Diplomacy and the Ban Treaty

By Michael Krepon

May 29, 2017

The drafting of a Ban (or Prohibition) Treaty, which resumes in June, is the latest manifestation of a quest for complete abolition of nuclear weapons that is as old as the Bomb itself. This effort gained prominent adherents after Hiroshima and Nagasaki, including Henry L. Stimson, the Secretary of War who oversaw the Manhattan Project. Stimson resolved afterward that no one else should ever be in his position, contemplating which cities to be left on and taken off a targeting list for mushroom clouds.

Extraordinary talents like Robert Oppenheimer and David Lilienthal applied themselves to the task of putting the genie back in the bottle, which required international control over atomic energy in all its aspects, from soup to nuts. They discovered, as have all those who worked this problem subsequently, that disarmament efforts could not be divorced from geopolitics and the state of relations between major powers.

The higher the expectation for complete nuclear disarmament, the bigger the let down when progress comes haltingly. After his Prague speech, President Barack Obama received the Nobel Peace Prize. This award was entirely premature—for expectation rather than accomplishment. His track record, when measured against his ambition, was exceedingly modest. Disarmament isn't advanced when Vladimir Putin pushes back against the post-Cold War order, or when China reacts to the prospect of more national and theater missile defense deployments. Nor does progress toward disarmament happen without bipartisan support on Capitol Hill, which dissipated once the Cold War ended.

During the Obama administration, the Global Zero movement clarified its powerlessness by setting the date of 2030 for this desired end state – 22 years from its announcement. The organizers of this

initiative were in a bind: without a date, there would be no forcing function, as would be the case if the date were set too far off into the future. But any date near enough to have bite would immediately seem impractical. The lesson that norms aren't strengthened when deadlines are missed or ignored seems to be taken on board by backers of the Ban Treaty—at least in its first draft.

Many who have worked tirelessly to maintain and strengthen the Nonproliferation Treaty have expressed deep reservations about a Ban Treaty. I take these reservations seriously, but believe they may be overdrawn. If the NPT becomes hollowed out, it will primarily be because strategic arms reduction remains stalled, the CTBT hasn't entered into force, and the FMCT negotiations continue to be stymied—not because of the Ban Treaty.

This does not absolve the Ban Treaty's negotiators from adding to these woes by weakening the NPT by suggesting weaker standards than those currently in place in the NPT regime. Defenders of the NPT are performing a valuable service by pointing out weaknesses in the first draft of the Ban Treaty. There's no need to play hardball, like perennial treaty opponents in the United States who habitually claim that the sky is falling.

Spoilers will continue to be active at NPT Review Conferences with or without a Ban Treaty. If drafters of the Ban Treaty truly mean what they say—that they do not intend to undermine the NPT—they will craft provisions so as not to give spoilers more ammunition. If successful, they can modestly strengthen the goal of abolition while strengthening the norm of non-proliferation.

As bystanders to this process, Trump Administration officials will lose more than they gain by bad-mouthing the Ban Movement. The more nuclear-armed states take aim against the Ban, the more blowback they invite at NPT RevCons. A far better approach, in my view, is to express understanding of the reasons behind the Ban Movement, to offer respectful concerns, to clarify the circumstances required for success, to recommit to further strategic-arms reductions, and to highlight warhead dismantlement numbers.

The push for getting to zero grows in proportion to the lack of progress by Washington and Moscow to further reduce strategic arms and the growth of arsenals elsewhere. When diplomacy is stalled, domestic and international dissension over nuclear weapons grow. Dissension will grow sharper if strategic modernization programs are accompanied by walking back the U.S. commitment to a world without nuclear weapons that dates to the Truman Administration.

Bad-mouthing the end state of abolition plus pursuing across-the-board strategic modernization programs plus stymied strategic arms reduction negotiations equals the hollowing out of the NPT—even if there are no new aspirants for the Bomb. The absence of a consensus document at RevCons can become the new normal—or the new baseline. What more can happen? Withdrawals? I don't think so. But there is a possibility of walkouts.

If the Trump Administration wants to stir up even more of a hornet's nest, there's no better way than by asserting it will no longer be bound by the object and purpose of the CTBT, if it nickels and dimes funding for the CTBTO and its international monitoring system, and especially if it pursues seemingly new warhead designs.

How to proceed? In my view, the Trump Administration would be wise to reaffirm the goal of abolition, at least sotto voce, with the necessary caveats. Take up Vladimir Putin's offer of extending New START, and reaffirm the Obama Administration's willingness to lower New START numbers. Withhold biting critiques of the Ban Movement. Recommit to the object and purpose of the CTBT, and don't short-change it. Steer clear of warhead designs that smack of fine-tuning nuclear war-fighting capabilities.

If the Trump Administration wants to do something historic to reduce nuclear dangers, upset apple carts and shred caricatures of a thin-skinned President with his hand on the nuclear “button,” it could “pull a Reagan”: Just as Reagan unexpectedly dismissed nuclear theology and signed the INF Treaty, Trump, too, could assert that a nuclear war must not be fought and cannot be won. And to underline his commitment, Trump could call on the Senate to provide its advice and consent to the CTBT.

<http://www.armscontrolwonk.com/archive/1203292/disarmament-diplomacy-and-the-ban-treaty/>

[Return to top](#)

Bulletin of the Atomic Scientists (Chicago, IL)

New Life For New START?

By Ian Johnson, Joel Beckner, Heng Qin, Nadezhda Smakhtina

May 26, 2017

In December 2016, Russian President Vladimir Putin declared: “We need to strengthen the military potential of strategic nuclear forces ... especially with missile complexes that can reliably penetrate any existing and prospective missile defense systems.” Shortly afterwards, President-elect Trump tweeted that “The United States must greatly strengthen and expand its nuclear capability until such time as the world comes to its senses regarding nukes.” Leaders in both states clearly see a challenge to the existing strategic order posed by missile defense and nuclear modernization.

But this challenge may present an opportunity as well: a heightened awareness of the need for the New Strategic Arms Reduction Treaty, the keystone of current US-Russia arms control agreements, which is set to expire at the very beginning of 2021. In addition to his more bellicose tweets, Trump has signaled an interest in decreasing tensions with Russia. His presidency represents a chance to reinvigorate bilateral cooperation on arms control issues.

To be sure, Putin and Trump are not the first leaders from Russia and the United States to be concerned about the high stakes of the nuclear age. At the height of the Cuban Missile Crisis, President John F. Kennedy wrote to Soviet Premier Nikita Khrushchev that “I have not assumed that you or any other sane man would in this nuclear age, deliberately plunge the world into war which it is crystal clear no country could win and which could only result in catastrophic consequences to the whole world, including the aggressor.” Mutual recognition of this reality eventually prevailed.

The Cuban Missile Crisis put into stark relief the need for some form of arms control between the United States and the Soviet Union. Ten months later, American Secretary of State Dean Rusk, Soviet Foreign Minister Andrei Gromyko, and British Foreign Secretary Alec Douglas-Home signed the Nuclear Test Ban Treaty, marking the beginning of the arms control era. Nine years later, in 1972, a much more comprehensive pair of agreements—the Strategic Arms Limitation Talks and the Anti-Ballistic Missile Treaty (ABM)—greatly reduced the risk of nuclear confrontation.

It was not just the notion that a nuclear war was unwinnable that drove the superpowers to curb the proliferation of their ABM systems. Even before the advent of nuclear weapons, the United States and its allies had begun wartime studies into the feasibility of technology that promised to shoot down incoming German V-1 and V-2 rockets before they hit their targets, but using a missile to shoot down a missile mid-flight was not realistic in the days before high-speed computing. Later, however, as technology improved, the possibility of shooting incoming Intercontinental Ballistic Missiles (ICBMs) out of the sky proved tantalizing to both America and the Soviet Union, as it would

neutralize the other's nuclear deterrent. Consequently, when both nations became aware of the other's development programs, the perception of strategic stability came under threat. Both states were intimately aware of the shortcomings of their own ABM capabilities, yet they feared the other superpower would achieve a breakthrough. This sense of vulnerability drove the United States and the Soviet Union to sign the ABM Treaty.

Thirty years later, in the aftermath of the September 11 attacks, the Bush Administration withdrew from the ABM Treaty. In 2002, the White House considered US-Russian relations as normalized, and Russia no longer represented a significant threat. The administration perceived the new threat to be non-state actors such as Al-Qaida and regimes that had not signed the Nuclear Non-Proliferation Treaty, such as North Korea and Iran—who might be deterred by an effective missile defense system. Ultimately, this decision delivered a major blow to US-Russia relations. In response to the US withdrawal, Russia withdrew from the Strategic Arms Reduction Treaty II (START II) the same year, a largely symbolic move.

After the American withdrawal in 2002, the Bush Administration invested heavily in ABM systems. In 2007, the Bush Administration began formal talks with Poland and the Czech Republic on the possibility of basing Patriot interceptor missiles in those countries. While the White House proposal was initially met with ambivalence by the Donald Tusk administration in Poland and President Vaclav Klaus in the Czech Republic, the Russia-Georgia conflict of 2008 reversed this reluctance. That year, Poland and the United States agreed to allow ground-based ballistic missile defense interceptors within Poland. In response, the Russian government "objected vociferously."

President Barack Obama attempted to ease Russian concerns over American interceptors in Europe by eliminating the planned ABM bases in Poland and the Czech Republic. Instead, the administration announced the "European Phased Adaptive Approach" plan on September 17, 2009. This involved four stages, beginning with the dispatch of American warships to Europe armed with AEGIS missiles capable of only short- and medium-range interception. With maximum speeds of only 3 kilometers per second, they would be incapable of hitting Russian ICBMs like the Bulava missile, which travels twice as fast. But the Obama administration's planned deployment of AEGIS-capable ships in the Mediterranean and Black Sea raised additional Russian concerns about their use. Further, after Obama's decision to cancel the Bush Administration's plans, which received broad accolades in the Russian media, the sudden announcement of the new European Phased Adaptive Approach plan was seen by many Russian policymakers as a betrayal.

Anti-ballistic missiles remained a major point of contention during the New START negotiations of the following year. Russian negotiators repeatedly raised the issue of missile defense limitations, but the United States shot down efforts to incorporate any language on ABMs into the new treaty. The Putin administration eventually acknowledged that "current US missile defenses do not threaten Russia's deterrent" in exchange for concessions on other issues incorporated into New START.

The Russian government, however, made it clear that if NATO deploys "a missile system capable of significantly reducing the effectiveness of Russia's strategic forces," then Russia would withdraw from its New START obligations. The Kremlin also argued that not only might such a system potentially blunt Russia's nuclear capabilities, but it might also function as an offensive weapon that could be aimed at Moscow. But with escalating tensions over the Russian intervention in Ukraine in 2014, NATO allies pushed for the continuation of the European Phased Adaptive Approach plan. On May 12, 2016, NATO officially opened its first land-based missile defense station in Deveselu, Southern Romania. This station was armed with Raytheon SM-3 missiles and also hosted a radar station. In 2018, the next NATO anti-ballistic missile base will become operational at Redzikowo, Poland. In addition, the United States has considerably increased the number of AEGIS anti-ballistic

missile equipped ships. By Phase 3 in 2018, NATO will have 32 AEGIS-equipped vessels, accompanied 48 SM-3 IB land-based interceptors. (Phase 4, which would have seen the deployment of higher-speed interceptors that posed a greater threat to Russian ICBMs, was cancelled by President Obama in 2013. This decision was meant to ease Russian concerns and prevent a withdrawal from New START.)

The issue remains highly charged. The European Phased Adaptive Approach program was officially designed against threats from the Middle East, to eliminate any potential “rogue missile” launches or any deterrence power that a new nuclear-armed state like Iran might try to use in reshaping the Middle East. But with the Iran deal forthcoming, Russian President Vladimir Putin argued that the continued existence of the NATO anti-ballistic missile program is clear: “The whole purpose of this system is to reduce the nuclear capabilities of all countries but the USA itself to zero.” Some have argued that Russian rhetoric against the European Phased Adaptive Approach has been political hyperbole for domestic use. But, given the possibility of a future threat to Russian strategic deterrence, withdrawal from New START now seems like a genuine possibility. Consequently, compromise from either side is unlikely, as NATO remains wary of the threat posed by states that have not signed the Nuclear Non-Proliferation Treaty, and is unlikely to dismantle the system that guarantees “damage limitation” from such threats.

Today’s security landscape is remarkably different from the ‘70s. The US decision to withdraw from the ABM Treaty in 2002 was largely in response to these changes. When the ABM Treaty was signed in 1972, one primary factor had handicapped the development of successful anti-ballistic missile systems: an effective detection and targeting system. Today, American capabilities in this area are far greater than they were in 1972. Beginning in 1995, the United States conducted yearly tests for its three main interceptor systems: Ground-Based Midcourse Defense, Aegis, and Terminal High Altitude Area Defense. In the first year, these systems failed every test. In 1998, there were two successful tests out of the four conducted. In 2013, six of seven interception tests were successful.

But despite these technical advancements, interceptors remain an implausible threat to the fabric of deterrence. Theodore Postol, a professor of Science, Technology and National Security Policy at MIT, noted that “past, present, and foreseeable missile defense systems are simply unable to discriminate between real warheads and decoys.” In the words of retired Major General Pavel Zolotarev, the development of a reliable ABM targeting system would be “worth the Nobel Prize in mathematics.” As it stands, in the event of a nuclear exchange between Russia and the United States, the interception of even a small percentage of actual nuclear warheads would be an accomplishment. Yet the technological progress of anti-ballistic missile systems represents a future threat to the fragile strategic balance, particularly in the absence of a limitation treaty.

This is a critical point. David Karn’s Military Expectation Theory argues that arms control agreements are most likely before a system’s technological success makes it a potentially decisive strategic tool. The best time to establish a framework for a new ballistic missile treaty is before such systems become a real threat to deterrence.

There are reasons for optimism. The United States is currently far ahead of the Russian Federation in defensive and early warning technologies, ranging from interceptor missiles to the Upgraded Early Warning Radar system. But while Russia is well along in its nuclear arsenal modernization program, the United States is just beginning to embark on its own trillion-dollar program. Given the American technological lead in anti-ballistic missiles, now is the ideal time for both sides to reach an agreement which could provide strategic clarity and build mutual trust.

There are a number of concrete policies that could initiate this process. Russian expert Lilia Shevtsova of the Carnegie Endowment for International Peace argued that “the construction of a joint missile defense system could be a way out of” the current strategic deadlock. Russian

President Vladimir Putin made a similar argument at the Valdai Club in 2015, proposing a “troika” of the United States, Europe, and Russia identify mutual threats and share command of a network of joint missile defense sites. While NATO member states in Eastern Europe may be reluctant to engage with Russia to this extent, there are intermediate steps that could be palatable to both sides. For instance, President Trump could propose a permanent forum for the exchange of technical information and threat assessments, open communications for radar-site data sharing, and arrange exchanges of military observers.

Seeking cooperation on anti-ballistic missiles will help reverse the deterioration in Russian-US relations. But improved relations are not the only benefit that cooperation will bring. While missile defense systems today do not threaten the fabric of mutually assured destruction, this will not remain the case forever. The technology continues to improve. To avoid a costly new arms race, it is critical to increase bilateral transparency now, in the hopes of reaching a comprehensive agreement later. Strategic stability depends on mutual clarity of capabilities, technologies, and intentions. President Trump has a unique opportunity to “bring sense” to nuclear security by initiating a conversation with Russia on anti-ballistic missiles.

<http://thebulletin.org/new-life-new-start10792>

[Return to top](#)

Fair Observer (Belmont, CA)

How to Achieve Nuclear Disarmament

By John Ashley

May 27, 2017

The only real solution to nuclear security is to strengthen the existing Nonproliferation Treaty.

At the end of March, roughly 120 nations concluded the first round of negotiations on a new treaty to ban nuclear weapons. Visibly absent from the conference were the five permanent members of the United Nations Security Council: China, France, Russia, the United Kingdom and the United States. Coincidentally, these are the only five nations legally allowed to possess nuclear weapons under the terms of the Nuclear Nonproliferation Treaty (NPT), which has served as the cornerstone of nuclear order since entering into force in 1970.

Considering the NPT mandates the five recognized nuclear nations make efforts “in good faith” toward nuclear disarmament, their absence from the March negotiations was noteworthy. But these five states were not the only governments to object to the negotiations or ban treaty. The additional four nations possessing nuclear weapons — India, Israel, North Korea and Pakistan — all abstained or voted against the negotiations. With every single nuclear power seemingly opposed to these talks, it is clear that a new treaty is not the answer to nuclear disarmament.

Rather than focus on the creation of a new treaty, which is nothing more than a political statement hindering practical progress toward disarmament, the United Nations and its members must instead work to strengthen the NPT. The focus should remain on a multilateral effort to strengthen the current nonproliferation and disarmament regimes. Three of the four aforementioned nuclear powers currently not party to the NPT pose a significant nuclear threat, and their entry into the framework must be made paramount.

After the negotiations for a new treaty were postponed until mid-June, the news has been dominated by the rising tensions between the US and North Korea, which was once party to the NPT. Since withdrawing, however, it has created a thriving nuclear weapons program, along with a

dangerous missile program. The development of new types of missiles, such as the Pukguksong-2, and the looming threat of a new nuclear test have put the US, South Korea and Japan on high alert. Kim Jong-un has repeatedly and publicly threatened the United States and its allies with nuclear strikes. Vowing to proceed “at full speed” with its nuclear program, North Korea poses not only a threat to its neighbors, but to the global nonproliferation regime as well.

Aside from North Korea, both Pakistan and India represent a considerable nuclear threat. Facing attacks from extremists, many in Pakistan’s Atomic Energy Commission worry about the security of the nation’s arsenal. A Pakistani security report stated that extremist groups maintained a presence in every province of the country, while urging the importance to strengthen Pakistan’s counterterrorism apparatus. Notably, India has become a target of many extremist groups within Pakistan as well. With tensions between New Delhi and Islamabad on the rise again, coupled with concerns over the security of Pakistan’s nuclear weapons, the likelihood of a nuclear war erupting between the two states is alarmingly high.

In order to advance the cause of nuclear disarmament, India, Pakistan and North Korea must be brought into the framework of the treaty — whether this means solving long-standing border disputes or providing security guarantees. A meaningful effort toward disarmament cannot be made when the largest threats remain outside the regime.

THE NEW BAN TREATY

The greatest problem facing the nonproliferation regime is the creation of a new ban treaty, which would be used as an “alternative forum” to the NPT. Currently, the NPT requires that signatory nations submit to inspections by the International Atomic Energy Agency (IAEA). The IAEA serves as the enforcement arm of the NPT, under Article III of the treaty, mandating that all non-weapons states allow the IAEA to investigate and verify that they are complying with the treaty.

A new ban treaty would presumably create a new set of rules and institutions, or potentially none at all. Nations leaving the NPT to join this rival system will weaken the authority of the NPT, leaving the members of the UN Security Council and their allies — who object to the proposed ban treaty — alone and the world divided between two rival frameworks for nuclear security. This would accomplish nothing. The four non-NPT nuclear powers will not sign onto this new treaty, and there is no incentive for the recognized nuclear nations to sign onto a new treaty that they would immediately be in violation of.

The only real solution to nuclear security is to strengthen the NPT, meaning further prevention of horizontal proliferation and bringing the four non-signatory nuclear powers into the treaty by any means necessary. Second, the nuclear powers must recommit to arms control agreements, such as the Plutonium Management and Disposition Agreement in order to illustrate their commitment to disarmament. These strengthening actions will do more to control the spread of nuclear weapons than a ban treaty, which does not address the current issues facing the nonproliferation and disarmament regimes.

https://www.fairobservers.com/more/international_security/nuclear-disarmament-treaty-npt-america-north-korea-india-pakistan-world-news-57203/

[Return to top](#)

Xinhua (Beijing, China)

Finland Raises Tactical Nuclear Weapons in NATO Disarmament Conference

Author Not Attributed

May 30, 2017

Finnish Foreign Minister Timo Soini on Monday urged arms control effort to be widened to include tactical nuclear weapons.

Soini made the appeal when addressing the NATO annual conference on Weapons of Mass Destruction (WMD) Arms Control, Disarmament and Non-Proliferation. The two-day conference began in Helsinki on Monday.

Soini said that tactical nuclear weapons are currently not covered by any legally binding and verifiable international agreement "as they should be". Soini urged practical confidence-building measures related to tactical nuclear weapons.

Soini also said there should be a clear line between the tactical nuclear and conventional weapons. He specified that the difference should be reflected in military doctrines and exercises.

Soini said the entry into force of the Comprehensive Nuclear Test Ban Treaty remains a high priority. Finland is contributing to the international monitoring system (IMS) network and is actively developing the verification system, he said.

The conference in Helsinki is the 13th annual meeting on WMD issues. The alleged use of chemical weapons in Syria was a key theme for discussion, media reports said.

Sannamaaria Vanamo, who heads the arms control unit at the Finnish Foreign Ministry, told national broadcaster Yle that no official statement was issued on the issue in Syria, and the investigation would be made in the Helsinki meeting.

Some one hundred participants from both NATO members and its partners as well as international organizations have taken part in the meeting.

http://news.xinhuanet.com/english/2017-05/30/c_136324551.htm

[Return to top](#)

Financial Times (London, UK)

Asia Opts For a Replay of Cold War Nuclear Deterrence

By Jamil Anderlini

May 24, 2017

Taiwan, Japan and South Korea have the capability to develop such weaponry quickly

Nine national leaders have the power to unleash nuclear devastation but, if it were not for the actions of a traitorous Taiwanese colonel in 1988, that number would be at least 10.

Chang Hsien Yi at 73 years old enjoys a quiet life in Idaho. For years he lived in secrecy in the US because of fears he would be assassinated by Taiwanese agents for revealing the full extent of Taiwan's secret nuclear weapons programme. His defection gave Washington the evidence it needed to force Taipei to shut down the project.

After decades of silence, Mr Chang has recently written a book on his role in this fascinating and little-known chapter of history. One of the revelations is that his actions, carried out mostly for

idealistic reasons, halted Taiwan's project when it was just one or two years away from producing the bomb.

Most worrying of all is the fact that Taiwan, a self-ruled island that China has sworn to "reunify" with the mainland, by force if necessary, could secretly restart its programme at any time and probably produce a weapon within a similar timeframe.

North Korea's sabre-rattling and headlong race to build a warhead that could reach the US has brought the modern arms race into sharp focus in recent months. Presented with the ignoble example of Muammar Gaddafi, killed eight years after agreeing to abandon his nuclear weapons, the youthful dictator Kim Jong Un is unlikely to follow suit in response to threats or bribes.

That means, unless the US and its allies are willing to risk a devastating war to remove Mr Kim, regional governments will soon have to ask whether America is willing to sacrifice Los Angeles for Tokyo or Seoul.

As the Singaporean diplomat Bilahari Kausikan points out, the answer is obviously "no". So the outcome is that Japan and South Korea will soon be forced to develop nuclear deterrents. As in the case of Taiwan, Japan has the capability to develop such weaponry very quickly — and is likely to do so even if Donald Trump does not follow through on his campaign promise to lift the US nuclear umbrella from over east Asia. Seoul will not be far behind.

If this scenario is now unavoidable, the question is what that means for peace and stability. Under the theory of deterrence made popular during the cold war, the prospect of mutually assured destruction dissuaded all sides from acting rashly.

Mr Kausikan uses this same logic to argue that a nuclear arms race in north-east Asia would lead to a similar uneasy equilibrium. He believes a nuclear balance of terror would have the added benefit (from the perspective of Washington, Tokyo and Seoul) of freezing the status quo in the region and thwarting Beijing's revanchist goal of recreating an east Asian order with China at its apex.

Mr Kausikan is correct that a nuclear-free North Korea is now a very unlikely prospect. The regime in Pyongyang will probably collapse — one day — in full possession of its nuclear arsenal, a terrifying prospect but one that the world has seen before with the dissolution of the Soviet Union. Unless that happens soon, nuclear build-up in the region is almost inevitable. Faced with this prospect, it is tempting to be sanguine and gamble on the logic of deterrence.

Taiwan's nascent nuclear programme should make everybody pause. Beijing has sworn to carry out pre-emptive strikes if it believes Taipei is close to deploying its own weapon. But in a neighbourhood where everyone else has gone nuclear, could the world really expect Taiwan — or Singapore or Malaysia or Indonesia or Australia — to restrain themselves?

Unfortunately, the days when a single idealistic traitor could halt the advance of mass destruction are far behind us.

<https://www.ft.com/content/df52ff9a-4064-11e7-82b6-896b95f30f58>

[Return to top](#)

38 North (Washington, DC)

The Pukguksong-2: Lowering the Bar on Combat Readiness?

By Michael Elleman

May 25, 2017

On Sunday, May 21, 2017, North Korea launched a two-stage, solid-fueled Pukguksong-2 (KN-15) ballistic missile. It was the second successful test firing of the medium-range ballistic missile, following the first in February. According to media reports, the missile traveled 500 km downrange and reached a peak altitude of 560 km, roughly replicating the performance of the February test. Pyongyang boasts that the Pukguksong-2 is now combat ready and will shortly enter into mass production. While it is certainly possible North Korea plans to deploy the missiles as they are rolled off the manufacturing line, the military would be accepting a weapon with uncertain performance and questionable reliability. Many more flight tests over the next year or two would be needed before North Korea's strategic planners would have confidence in the Pukguksong-2's ability to fly to a target successfully.

Breaking from the Past

Prior to 2016, all of North Korea's ballistic missiles relied on liquid-propellant engines, except for the solid-fueled KN-02 (Toksa). The KN-02 closely resembles the Soviet-era SS-21 short-range missile, which uses a small motor containing roughly 800 kg of solid propellant and is designed to support battlefield operations.

In March 2016, North Korea ground tested a solid-fueled motor substantially larger than the SS-21 motor. The new motor was more than one meter in diameter and likely housed a few tons of solid fuel. The following month, North Korean state television aired what it claimed was the launch of a solid-propellant missile from an underwater tube. The missile reportedly traveled 30 km. A second launch of the Pukguksong-1 was attempted on July 9, but according to South Korean military sources, the missile failed. A month later, on August 23, a two-stage, solid-fueled Pukguksong-1 was fired from either a submarine or underwater barge. It landed about 500 km downrange. The Pukguksong-1 is powered by a first-stage motor containing five to six tons of propellant; the smaller second stage holds two to three tons of solid fuel.

A land-based version of the Pukguksong-1, known as Pukguksong-2 (KN-15) was launched successfully from the Banghyon air base in February 2017. It reached a maximum height of about 550 km and travelled 500 km before landing in the East Sea. If flown on a standard trajectory, the Pukguksong-2 has a maximum range of about 1,300 km.

The second and most recent test firing of the Pukguksong-2 took place approximately 70 km north of Pyongyang. The missile's trajectory closely resembled that of the first test, though it peaked at an altitude 10 km higher. It is not known if the additional 10 km height was intended; if it was not, the result indicates that the Pukguksong-2 may be wildly inaccurate. Had the two tests flown to maximum range, the second-test missile would have traveled roughly 20 km further than the first.

Pukguksong-2's Status

Soon after the test, North Korean media sources declared that the Pukguksong-2's "tactical and technical data met the requirements of the Party, [and] this type of missile should be rapidly mass-produced in a serial way." Officials further claimed that the test verified the missile's solid-fuelled motor, stage separation processes and late-stage guidance for a nuclear warhead." Pyongyang also released images of the earth taken from great altitude by a camera mounted on the missile's warhead.

Transmitting images from the missile's camera offers limited strategic value to North Korea. However, the ability to send large amounts of data from the missile to a ground station in real-time demonstrates North Korea's capacity to collect invaluable data from the missile while it is in flight. These data provide the information needed to characterize fully the missile's performance, and identify design or production flaws should a monitored component fail or underperform.

Nonetheless, despite North Korea's boasts that the Pukguksong-2 is combat ready, and will soon be mass produced, important questions about the missile's status remain. Two successful flights of a new missile should generate confidence in its fundamental design. But more tests are needed to characterize fully the missile's performance and reliability under a range of operational conditions. Ballistic missiles, like any weapon, must meet their performance criteria (reliability, accuracy, etc.) when launched day or night, rain or shine, winter or summer. Typically, countries developing first-generation missiles designed to carry nuclear weapons conduct one to three dozen flight tests over the course of two to five years before the weapon is deployed with combat troops.

That the peak altitude reached during the most recent flight test was 10 km greater than that attained during the February test—despite both missiles flying to the same range—is a key indicator that the Pukguksong-2 is not ready for combat duty. As mentioned, the different altitudes reached by the two missiles translate into range inaccuracy of about 20 km when a standard trajectory is employed. The large difference in range suggests that the rocket motors powering the Pukguksong-2 do not generate a performance profile that can be reproduced from motor to motor.

One of the most pressing and difficult challenges to creating a solid-fueled missile is the manufacture of motors with reproducible performance. The challenge facing North Korea is even more difficult because its engineers and specialists have limited experience manufacturing large motors. The production of reliable solid-propellant motors is as much art as science. That art cannot be learned from books or classroom lectures. Instead, mastering the trade craft requires hands-on experience. This is why it takes dozens of ground and flight tests to demonstrate and validate the performance and reliability of first-generation, solid-fueled missiles.

In addition to validating the performance and reliability of the Pukguksong-2's rocket motors, North Korea must also master other key elements of an operationally-viable ballistic missile. For example, engineers would have to develop an effective thrust-termination mechanism that activates when the missile reaches the pre-determined velocity and position in space that places the warhead on a trajectory to hit its assigned target. Neither test is believed to have included thrust termination.

Implications

Clearly, the Pukguksong-2 has not been subjected to the number of tests needed to validate its performance and reliability. But perhaps this is unimportant to North Korea's leadership and military commanders. Maybe the regime is willing to accept the risk that its new missile will fail as often as it succeeds when used in battle, or that it could miss its target by tens of kilometers.

When armed with nuclear warheads, greater accuracy may not matter as much depending on the nature of the target and the damage expectancy criteria—for example, with counter-value or “city-busting” attacks. But if Pyongyang's nuclear-armed missiles fail at a high rate, the odds that missile defenses in South Korea, Japan, Guam or the United States would block all of the missiles that fly successfully improve significantly. The possibility that a nuclear attack might not succeed would very likely weigh heavily on the minds of North Korea's decision makers.

It is difficult to know how the Kim regime thinks about nuclear deterrence and the potential use of nuclear weapons. Pyongyang likely does not apply the same standards for performance and reliability demanded by the United States and other nuclear powers. However, North Korea's

strategic planners must have some sense of what is required, and it is reasonable to conclude that after only two successful flight tests, the Pukguksong-2 does not yet satisfy even their lowest operational standards. It is undeniable that deploying a missile that is only partially developed entails considerable risk. Consequently, the world should expect North Korea to continue flight testing the Pukguksong-2 over the next few years.

http://38north.org/2017/05/pukguksong2_052517/

[Return to top](#)

National Public Radio (Washington, DC)

LOL at EMPs? Science Report Tackles Likelihood of a North Korea Nuclear Capability

By Elizabeth Jensen

May 30, 2017

An April 27 Morning Edition report by Geoff Brumfiel, an NPR science editor, ran just a scant 2 ½ minutes, but it prompted an outsized outpouring of emails.

The emails (some from organized campaigns, including this one) continue to arrive, which is why I am addressing this so long after the fact. But at a time when many listeners worry about "false equivalence" — wishy-washy "on the one hand, on the other hand" reporting — I also think this report illustrates what NPR, and its listeners, should expect of its newsroom staff: solid research and considered reporting that attempts to filter out the noisy debate over hot-button issues and add some facts to the conversation.

Brumfiel's NPR piece assessed whether North Korea had the capability to detonate a nuclear weapon from space, and thereby deal a devastating blow to the U.S. electrical grid. This technique, which has never been used in an actual attack, is known as "electromagnetic pulse" (or EMP for short).

Former CIA director James Woolsey raised such a specter during an April 26 Morning Edition interview.

Here's his quote, referring specifically to North Korea: "The really dangerous thing is that they can both orbit satellites — they've orbited several — and use nuclear weapons. And if they detonate a weapon up some miles above the Earth in a satellite, they can knock out a major share of our electric grid." Morning Edition host David Greene responded: "So that's something I didn't know about."

The assertion that North Korea may soon possess such a capability is highly controversial, it turns out.

The threat from EMPs has been debated for years. A group of scientists and political figures have argued strongly that the United States' infrastructure is not prepared for an EMP threat — from any source — and they want the U.S. to spend more money preparing for such a scenario. EMPs were the subject of a 2004 report to Congress. Woolsey made an argument for increased funding to prepare the U.S. infrastructure in a 2014 Wall Street Journal op-ed he co-authored. The issue of EMPs surfaced in January 2016 Republican presidential candidate debates.

It's not the reporter's job to tell listeners what the federal budget priorities should be; that's for the audience to decide for themselves. Nor is it always possible to know what is going on in secretive weapons development programs in other countries, as illustrated by uncertainty about North Korea's nuclear capabilities and intentions.

But the view of North Korea's capabilities articulated by Woolsey does not seem to be widely shared in the scientific and nuclear weapons community (here's one scientific take). Letting Woolsey's comments stand without an examination of the facts behind them would have been irresponsible, especially on a topic that is so unfamiliar to the general public.

After the Woolsey interview, Brumfiel was asked by editors to report on the potential of an EMP threat — from North Korea specifically — which is what he did.

Contrary to the assertion of some of the critics who have written my office, Brumfiel's report was not about whether EMPs could have real consequences. In the piece, Brumfiel specifically says such attacks are possible and he reiterated that to me in an email. "As somebody with both a physics degree, and a long history of reporting on nuclear weapons, I am fairly familiar with the idea behind Electromagnetic Pulses (EMPs). I know the effect is real and that in a full-scale nuclear exchange, EMPs could be disruptive. Most military hardware is hardened against EMPs to make it more survivable on the battlefield."

Brumfiel sent me a detailed breakdown of his reporting process, and it's everything you would expect of a seasoned reporter. He drew on his own knowledge, read the reports, talked to experts. One suggested that he interview Dr. Jeffrey Lewis, Director of the East Asia Nonproliferation Program at the Middlebury Institute for International Studies at Monterey and a leading expert on North Korea's missile and nuclear program. He is frequently called on as a guest on NPR.

Lewis dismissed the threat — not of EMPs, but of North Korea's current ability to launch one. Brumfiel backed up that assessment with reporting of his own on past tests. In other words, Brumfiel did what he should: He researched the issue and came to a reported conclusion. While it was short — and arguably too short for a complex topic — the piece added important context to the previous day's interview. (Even better, time permitting, would have been to tell listeners about the longstanding debate over the issue.)

I have one significant criticism in how the story was told, however. The piece included this exchange:

BRUMFIEL: ...I Skyped Jeffrey Lewis, a nuclear weapons expert at the Middlebury Institute of International Studies, and asked him, could North Korea really do this?

JEFFREY LEWIS: (Laughter).

BRUMFIEL: Take that as a no.

LEWIS: This is the favorite nightmare scenario of a small group of very dedicated people.

That laugh ran a full seven seconds. It was ear-catching — and also generated some of the sharpest complaints from those who wrote the Ombudsman's office.

One came from Michelle Rehwinkel Vasilinda, of Tallahassee, Fla., a former member of the Florida House of Representatives. She expressed concern about the "crude laugh track as a supposed counterpoint to comments made by former CIA Director Woolsey on the state of national security.

Former CIA Director Woolsey has honorably served his country for many years and through both Republican and Democratic administrations. I have never heard such a disrespectful approach to a news report and any interview subject."

Brumfiel told me that the laugh made clear "that many experts consider the threat of a North-Korean-nuclear-EMP satellite as laughable. What better way do so but with a real laugh from somebody with deep knowledge of the topic?"

That seven seconds was just a fraction of Lewis's full laugh, which ran more than 1 minute and 14 seconds of the interview. Given the magnitude of that response, Brumfiel said he "felt that leaving it out would have the effect of sanitizing his reaction to the original statements." The piece's editor, Larry Kaplow, said he agreed with that choice.

Brumfiel added, "We realized the decision to use the laugh would stir things up, but in the end, we agreed it would help drive home the point of the piece in a memorable way. Many people both within and outside of NPR have since remarked on it. I feel it had the desired effect, which was to offer a crystal-clear rebuttal to a statement made the previous day."

I disagree. To many listeners, including me, it came off as disdainful and disrespectful of Woolsey. More important, by effectively treating the subject as a laughing matter, it had the unintended consequence of obscuring Brumfiel's main point: The threat of EMP attacks may be real, but North Korea, in particular, is most likely not capable of such an attack in the near future. This is a weighty topic and NPR listeners deserved a report that invited them to consider it seriously, in style as well as substance.

<http://www.npr.org/sections/ombudsman/2017/05/30/530262884/lol-at-emps-science-report-tackles-likelihood-of-a-north-korea-nuclear-capabilit>

[Return to top](#)

The National Interest (Washington, DC)

Forget North Korea's Nuclear Arsenal. Its Chemical and Cyber Weapons Are Already a Threat.

By Patrick Cronin

May 25, 2017

In reminding the world why Iran poses an array of threats to regional security, President Donald Trump preempted the argument of those who believe that a nuclear deal would significantly reduce hostility with North Korea.

The VX nerve agent that killed Kim Jong-un's half-brother and the WannaCry malware that infected the global Internet represent a dangerous convergence of two threats far more likely to be used in anger than missiles carrying nuclear warheads. Like Iran, North Korea poses multiple hazards to international security.

To be clear, nuclear weapons are a real and gathering danger, and frequent test launches by the Korean People's Army suggest steady progress toward deploying long-range nuclear missiles. Yet there is considerable experience and success in deterring nuclear arsenals. The same cannot be said for biochemical and cyber weapons.

Biochemical weapons have been used throughout modern warfare. In World War I, chlorine gas caused soldiers to drown from the fluid that filled seared lungs. In the ongoing Syrian civil war, Bashar al-Assad's regime has acted with near-impunity in dropping the deadly nerve agent sarin on men, women and children.

Off the battlefield, lethal toxins have been employed by Russian and North Korean agents to eliminate political opponents. In 2006, Alexander Litvinenko slowly succumbed to radiation poisoning after imbibing tea laced with polonium-210. In February, Kim Jong-nam swiftly succumbed after being wiped with the chemicals that comprise VX, a thiophosphonate one hundred times more toxic than sarin.

Pyongyang's outlandish contention that American and South Korean agents plotted to assassinate North Korea's "supreme leadership" with biochemical weapons sounds more like a B-rated movie script than the official discourse of a state. It is vaguely reminiscent of the 1952 hoax perpetuated by China that U.S. soldiers were using biological weapons during the Korean War.

Yet North Korea's latest, persistent allegations of an South Korea-U.S. conspiracy to "eclipse the eternal sun" of the Democratic People's Republic of Korea raise intriguing questions about North Korea's true motivations and intentions.

North Korea has put up a united front of propaganda to give its wild story a patina of plausibility. Vice Foreign Minister Han Song-ryol convened foreign diplomats to describe the supposed scheme to assassinate Kim. Stitching together different official accounts, a Pyongyang resident helpfully identified as "Kim," working in the timber industry in Khabarovsk, sought to knock off the number-one Kim during an April military parade. According to North Korea's ambassador to China, the National Intelligence Service and the Central Intelligence Agency "secretly and meticulously" conspired to kill Kim Jong-un with "radioactive or nano-poisonous substances." A "declaration of war" is how North Korea's United Nations Mission summed up the alleged conspiracy.

Assuming NIS and CIA officials have not gone rogue, how can one explain Pyongyang's conspiratorial barrage? One way to evaluate these choreographed—if crazy—stories is through the prism of a centrally controlled regime determined to tightly regulate the flow of information.

Knowledge is power. Democrats try to share it. Dictators try to control it. But how well is Kim Jong-un exercising mastery over information in North Korea? Just because his senior officials and diplomats read prepared talking points, does not necessarily imply that they believe their own narrative. Indeed, the biochemical plot to assassinate Kim might be a clumsy attempt by the regime to rationalize sending a hit squad to Malaysia to kill the eldest son of Kim Jong-il.

Proof of Pyongyang's fixation on oppressing even the flow of information can be seen in its crackdown on the import or smuggling in of any outside electronic devices. Even more compelling is North Korea expanding cybercrime and cyberwar capabilities.

No one can be sure yet who was responsible for the recent wave of ransomware attacks, but certainly North Korea has both the means and the motive for undertaking such action. Some suspect that North Korean sleeper cells of digital soldiers may have carried out the worldwide assault to strike back at outside powers, including China, while also seeking to finance expensive weapons programs. Authentication will take time, but there seems to be a connection between the so-called Lazarus hacking group and the remarkably successful 2016 cyber heist of the central bank in Bangladesh and the 2014 assault on Sony Corporation. North Korea's special Unit 180 may be linked to these information warfare activities.

Pyongyang likes to rattle the nuclear saber but remains ready to use biochemical and cyber weapons. Nuclear weapons are useful insurance policies against intervention, but their use would be suicidal. The more surreptitious use of biochemical and cyber weapons, however, risks creating a grave new world by seeking to strike below the threshold of nuclear deterrence and catalyzing war.

The hopeful news is that leading officials in Seoul and Washington understand the stakes and the need to work together to preserve deterrence in the face of emerging threats. Secretary of Defense James Mattis recently stated that using force to settle the North Korea problem by would be "tragic on an unbelievable scale." And President Moon Jae-in's new national security advisor, Chung Eui-yong, has emphasized that "there is ample room for the U.S. and South Korea to calibrate and plan their joint engagement with the North."

The bad news is that the bizarre publicity campaign about a fantastical conspiracy to assassinate Kim, coupled with suspicions about Pyongyang's growing cyber hijinks, suggest a regime bent on acquiring multiple weapons of mass disruption and destruction. Even if leaders can make headway on reining in the looming nuclear dossier, the dual threats of biochemical and cyber weapons will remain a gathering peril.

<http://www.npr.org/sections/ombudsman/2017/05/30/530262884/lol-at-emps-science-report-tackles-likelihood-of-a-north-korea-nuclear-capabilit>

[Return to top](#)

Raw Story (Washington, DC)

European Union Considering Its Own Nuclear Weapons Program Over Fears It Cannot Rely On Trump's America

By Elizabeth Preza

May 28, 2017

As German Chancellor Angela Merkel floats the notion that Europe cannot rely on the United States in the capacity it has in the past, core U.S. allies are ramping up discussions of a European Union nuclear weapons program—or “Eurodeterrent”—that would place France's weapons arsenal under a common European command, the New York Times reports.

Though proponents are in the minority on the European continent, the idea is a sign of growing concern that the United States, under President Donald Trump, is not committed to the defense of Europe in the same way his predecessors were.

German Council on Foreign Relations head Jana Puglierin said some senior European officials have “triggered a public debate about this, taking place in newspapers and journals, radio interviews and TV documentaries.”

“That in itself is remarkable,” she added. “I am indeed very astonished that we discuss this at all.”

Foundation for Strategic Research deputy director Bruno Tertrais told the Times he previously would have said, “don't bother, there's no story here,” but said such a plan could be enacted provided “a serious loss of trust in the U.S. umbrella.” And, given Britain's pending departure from the E.U., “the French might feel they have a special responsibility” to protect Europe.

Such a loss in trust may be on the horizon. Trump is just now returning from a trip to a NATO summit, which House Minority leader Nancy Pelosi said “disrespected our closest allies.” He also failed to voice support for NATO's Article 5, which is the principle of collective defense that guides the alliance. It commits member nations to protect fellow members and was invoked for the first time after the 9/11 terrorist attacks against the United States.

On Saturday, Chancellor Merkel argued, “the times in which we can fully count on others are somewhat over, as I have experienced in the past few days.”

“We Europeans must take our destiny into our own hands,” she added.

Massachusetts Institute of Technology professor Vipin Narang, who was originally skeptical of a “Eurodeterrent,” acknowledged “there is a logic” to such a plan.

"I never thought we would see this again. I never thought there would actually be this concern," he said. "You can see where the debate is surfacing from."

<https://www.rawstory.com/2017/05/european-union-considering-its-own-nuclear-weapons-program-over-fears-it-cannot-rely-on-trumps-america/>

[Return to top](#)

South China Morning Post (Hong Kong, China)

Britain's Trident Nuclear Submarines Vulnerable to Catastrophic Hack, Think-Tank Warns

Author Not Attributed

June 1, 2017

The UK's Trident submarine fleet is vulnerable to a "catastrophic" cyber-attack that could render Britain's nuclear weapons useless, according to a report by a London-based think-tank.

The 38-page report, Hacking UK Trident: A Growing Threat, warns that a successful cyber-attack could "neutralise operations, lead to loss of life, defeat or perhaps even the catastrophic exchange of nuclear warheads (directly or indirectly)".

The Ministry of Defence has repeatedly said the operating systems of Britain's nuclear submarines cannot be penetrated while at sea because they are not connected to the internet at that point.

But the report's authors, the British American Security Information Council (Basic), expressed scepticism.

"Submarines on patrol are clearly air-gapped, not being connected to the internet or other networks, except when receiving (very simple) data from outside. As a consequence, it has sometimes been claimed by officials that Trident is safe from hacking. But this is patently false and complacent," they say in the report.

Even if it were true that a submarine at sea could not be attacked digitally, the report points out that the vessels are only at sea part of the time and are vulnerable to the introduction of malware at other points, such as during maintenance while docked at the Faslane naval base in Scotland.

The report says: "Trident's sensitive cyber systems are not connected to the internet or any other civilian network. Nevertheless, the vessel, missiles, warheads and all the various support systems rely on networked computers, devices and software, and each of these have to be designed and programmed. All of them incorporate unique data and must be regularly upgraded, reconfigured and patched."

The UK has four nuclear-power submarines, which are in the process of being replaced. Their replacements are scheduled to go into service in the early 2030s.

The report comes after the cyber-attack last month that disrupted the NHS, which uses the same Windows software as the Trident submarines. There was speculation too that the US used cyberwarfare to destroy a North Korean missile test. A Trident test-firing of a missile last year off the coast of Florida also went awry, with no official explanation given.

The report was co-written by Stanislav Abaimov, a researcher in cybersecurity and electronic engineering at the University of Rome and a graduate of the Moscow State Institute of Electronics and Mathematics, and Paul Ingram, Basic's executive director.

In reaction to the report, Des Browne, who as UK defence secretary in 2007 was responsible for steering the original decision to renew Trident through parliament, said: "The WannaCry worm attack earlier this month affecting 300,000 computers worldwide, including vital NHS services, was just a taste of what is possible when cyber-weapons are stolen.

"To imagine that critical digital systems at the heart of nuclear weapon systems are somehow immune or can be confidently protected by dedicated teams of network managers is to be irresponsibly complacent."

Abaimov said: "There are numerous cyber vulnerabilities in the Trident system at each stage of operation, from design to decommissioning. An effective approach to reducing the risk would involve a massive and inevitably expensive operation to strengthen the resilience of subcontractors, maintenance systems, components design and even software updates. If the UK is to continue deploying nuclear weapon systems this is an essential and urgent task in the era of cyberwarfare."

The report's authors estimate that the capital costs for the UK government to improve cybersecurity for the Trident programme would run to several billions of pounds over the next 15 years.

The report is to be published on the Basic website www.basicint.org

<http://www.scmp.com/news/world/europe/article/2096443/britains-trident-nuclear-submarines-vulnerable-catastrophic-hack>

[Return to top](#)

MINA (Skopje, Macedonia)

Russian MP: We'd use Nukes if US/NATO enters Ukraine

Author Not Attributed

May 29, 2017

Russia would be forced to use nuclear weapons in any conflict in which U.S. or NATO forces entered eastern Ukraine, a member of Russia's parliament told an international gathering of government security officials on Sunday.

"On the issue of NATO expansion on our borders, at some point I heard from the Russian military — and I think they are right — If U.S. forces, NATO forces, are, were, in the Crimea, in eastern Ukraine, Russia is undefendable militarily in case of conflict without using nuclear weapons in the early stage of the conflict," Russian parliamentarian Vyacheslav Alekseyevich Nikonov told attendees at the GLOBSEC 2017 forum in Bratislava, Slovakia.

Russian military leaders have discussed Moscow's willingness to use nuclear weapons in a conflict with military leaders in NATO, as part of broader and increasingly contentious conversations about the alliance's expansion, Nikonov later told Defense One.

Nikonov's threat might sound startling, but it's in keeping with the current state of Russia's evolving policy on the use of nuclear weapons. Moscow has vowed to never let invading armies on Russian territory again, instead, take the war to their territory, destroy their infrastructure and cities.

While the Soviet Union maintained a policy against the first use of nukes, Putin's government turned away from that strict prohibition in 2000 with the signing of a new military doctrine that

allows for the limited use of nuclear weapons “in response to large-scale aggression utilizing conventional weapons in situations critical to the national security of the Russian Federation.”

Putin has also shown a growing willingness to invest in nuclear-weapons technology. In March, he vowed to put more money into new intercontinental ballistic missiles, so-called “strategic” nuclear forces, and to prioritize those military investments “above all” other areas.

But the type of nuclear weapons that Russia would use to defend its territory in Crimea might be far smaller: sub-kiloton tactical devices dwarfed even by the roughly 15 kiloton bomb dropped on Hiroshima in 1945. These small warheads have emerged as a big concern for U.S. military leaders.

The Russians “maintain their tactical nuclear stockpile in ways that we have not,” Maj. Gen. William Hix, the Army’s director of strategy, plans, and policy said in March at the Booz Allen Hamilton Directed Energy Summit.

Still, a growing nuclear arsenal doesn’t mean that Putin is itching to stage a sneak attack.

“There is little indication that Russia plans to use nuclear weapons at the outset of a conflict, before it has engaged with conventional weapons, even though Russia could resort to the use of nuclear weapons first, during an ongoing conventional conflict,” Amy Wolf, a nuclear weapons specialist with the Congressional Research Service, wrote in February. “This is not new, and has been a part of Russian military doctrine for years.”

NATO on the march

Why is the Russian government telegraphing its willingness to go nuclear in Ukraine? In one word, NATO. The Cold War-born treaty organization of Western nations may seem obsolete to some, but not to Russia, which has watched with concern as NATO has annexed a dozen eastern European countries that used to be under Moscow’s sway.

“For us, [NATO] is a military alliance spanning three-quarters of the global defense money, now planning to expand that figure,” said Nikonov.

In the two years since Crimea joined Russia, NATO’s Baltic members have doubled their defense budgets. In 2018, Latvia, Lithuania, and Estonia are projected to spend nearly \$670 million, up from \$210 million in 2014. “This growth is faster than any other region globally,” Craig Caffrey, principal analyst at IHS Jane’s, remarked last October. “In 2005, the region’s total defence budget was \$930 million. By 2020, the region’s defence budget will be \$2.1 billion.”

NATO has been expanding its troop presence in Eastern Europe as well. In April 2016, during the Warsaw summit, NATO agreed to increase the size of the NATO force deployed to Baltics, a posture move sometimes called enhanced forward presence. In January, the U.S. deployed some 4,000 troops to Poland. The following month, Germany, announced that it will send some 1,000 troops to Lithuania.

There has been a massive anti Russian hysteria propagated by Washington and Berlin and cheerfully disseminated by Soros owned media in Europe. Nikonov said these regional tensions, and their causes, are perceived very differently in Russia than in the West.

“For Russia, the definition of success in dealing with neighbors is to make them as friendly to Russia as possible,” he said at the GLOBSEC forum. “The definition of success for many people sitting in this room is how to distance those countries from Russia. I think these are conflicting goals.”

<http://macedoniaonline.eu/content/view/32086/50/>

[Return to top](#)

Sputnik (Moscow, Russia)

Russia Destroys Nearly 99% of Chemical Weapon Stockpile Under CWC – Official

Author Not Attributed

May 30, 2017

The head of the Russian Ministry of Industry's Department of Conventional Obligations Realization and Trade said that Russia has destroyed nearly 99 percent of its chemical weapon stockpile over the past 20 years.

Russia has destroyed nearly 99 percent of its chemical weapon stockpile over the past 20 years, the head of the Russian Ministry of Industry's Department of Conventional Obligations Realization and Trade said on Tuesday.

"As of May 29, there are 588 tonnes of poisonous substances left at a facility in the Udmurtian Republic, which is 1.4 percent of the previous stockpiles," the official told the Russian Federation Council's Defense Committee, adding that 20 years ago the chemical weapons arsenal amounted to 40,000 tonnes.

According to Victor Ozerov, the chairman of the Federation Council's Committee on Defense and Security, Russia complies in full with its international obligations in this sphere.

In 1997, Russia joined the Chemical Weapons Convention (CWC), in accordance with which the destruction of its chemical weapons stockpiles should be completed by December 31, 2018.

<https://sputniknews.com/russia/201705301054121519-russia-chemical-weapon/>

[Return to top](#)

The Hill (Washington, DC)

French President Sets Red Line on Syria Chemical Weapons

By Niv Elis

May 29, 2017

French President Emmanuel Macron drew a red line on Syrian chemical weapons use on Monday in a meeting with Russian President Vladimir Putin.

"Any use of chemical weapons would results in reprisals and an immediate riposte, at least where France is concerned," Macron said in a joint news conference, according to Reuters.

Macron's remarks follow President Trump's first official visit to Europe and the Middle East as president, a trip that left some European allies unsure of support from his administration.

German Chancellor Angela Merkel said Europe could not remain dependent on others for help, adding that Germany and France had to boost their cooperation.

"We Europeans have to take our destiny into our own hands," she said.

Former President Barack Obama faced harsh criticism for failing to enforce a similar red line on Syrian chemical weapons when he was in office. In 2012, Obama said that "a red line for us is we start seeing a whole bunch of chemical weapons moving around or being utilized," and that crossing such a line would change his thinking on military engagement.

When Syrian President Bashar Assad used chemical weapons a year later, Obama did not intervene. Instead, a deal was struck at Putin's behest to clear chemical stockpiles out of Syria.

In April, following another Syrian chemical attack, Trump ordered a strike on the airbase from which the warplanes that deployed chemical weapons were launched.

The United States and France have both opposed Assad in Syria, while Russia has continued backing him in the civil war that has resulted in over half a million deaths and sparked a refugee crisis in the region and parts of Europe.

<http://thehill.com/policy/international/335541-french-president-sets-red-line-on-syria-chemical-weapons>

[Return to top](#)

The Jerusalem Post (Jerusalem, Israel)

Iran Sanctions Bill Likely to Become Law, Testing Nuke Deal

By Michael Wilner

May 28, 2017

In no way does it violate 2015 accord, AIPAC says

A bill that would sanction Iran over its ballistic missile program, its support for proxy terrorist groups and its human rights abuses passed through a US Senate committee last week with bipartisan support, and now stands a good chance of becoming law, despite warnings from Iran that such an act would scuttle its nuclear deal with world powers.

The bill, titled the Countering Iran's Destabilizing Activities Act of 2017, would target what diplomats and lawmakers characterize as Iran's "nonnuclear" activity – programs of concern to the US government that are not directly related to its nuclear work.

The nuclear deal reached in 2015 between Iran and the US, the UK, France, Russia, China and Germany required the US to suspend all nuclear-related sanctions – and commit not to pass those same sanctions under a different name. But the US is allowed in general terms to continue its nonnuclear sanctions and to expand upon them.

Several individuals and organizations engaged in Iran's nonnuclear activity – its missile work and its proxy warfare – are also involved in its nuclear program, and thus would face sanctions once again after receiving relief from the nuclear accord. Thus the bill challenges lawmakers to delineate their new sanctions from the old ones, and opens the Trump administration up to a diplomatic crisis with Iran should it choose to support the legislation.

The White House has not explicitly endorsed the legislation, but has said on several occasions that it intends to "isolate" Iran and crack down on its "malign behavior" region-wide.

"We can no longer allow the nuclear agreement with Iran to dictate US policy throughout the Middle East, and this bill is an important first step in finally holding Iran accountable for their nonnuclear destabilizing activities," said Senate Foreign Relations Committee chairman Sen. Bob Corker (R-Tennessee), who pioneered the legislation supported by fellow committee members Sens. Bob Menendez (D-New Jersey), Marco Rubio (R-Florida), Ben Cardin (D-Maryland), Tom Cotton (R-Arkansas) and Bob Casey (D-Pennsylvania).

"The Iranian regime, and its clients and proxies, should take from this legislation that while we will continue to fulfill US obligations pursuant to the JCPOA [Joint Comprehensive Plan of Action], we remain committed to pushing back on Iran's ballistic missile program, support for terrorism,

violations of the arms embargo and human rights abuses against its own citizens,” said Cardin, the committee’s ranking member.

The National Iranian American Council, an organization which fervently supported the nuclear deal, said the bipartisan Senate group had “decided to give Donald Trump new tools to kill the Iran deal and stumble into war with Iran.”

“Today, in close meeting, Senate Democrats are going to mark up Iran sanctions bill that will likely kill the Iran deal and pave way for war,” Trita Parsi, founder and president of NIAC, wrote on Twitter.

Similarly, John Kerry, the former US secretary of state who negotiated the accord, warned the Senate against proceeding with the legislation, in his first “tweet storm” since leaving office.

“This is a time to tread carefully,” Kerry wrote. “After Rouhani’s reelection, there is much up in the air/room for misinterpretation. This is not the moment for a new Iran bill.”

Nevertheless, the bill is receiving support from Democrats who backed the nuclear deal when it was first announced.

The legislation passed through Senate mark-up by a vote of 18 to 3.

“The Senate’s Foreign Relations Committee made important amendments to remove two problematic provisions from the legislation,” said Dylan Williams, vice president of government affairs with J Street, an American-Jewish lobby that has strongly supported the nuclear accord.

Those changes, Williams asserted, “ensure that the bill does not violate the important and successful JCPOA nuclear agreement.”

Several other American-Jewish and Israel advocacy organizations, including the American Israel Public Affairs Committee and the Conference of Presidents of Major American Jewish Organizations, are supporting the bill.

“This bill is directed only at actions outside the nuclear sphere – in no way does it violate the letter or spirit of the 2015 nuclear deal,” AIPAC said in a statement.

<http://www.jpost.com/Middle-East/Iran-News/Iran-sanctions-bill-likely-to-become-law-testing-nuke-deal-494088>

[Return to top](#)

National Review (Washington, DC)

Is Trump All Talk on Iran?

May 31, 2017

By Jonathan Tobin

On his first official trip abroad, the president rallied Arabs and Israelis to unite against Iran. But by giving Boeing a pass to sell Tehran planes, he’s sending a very different message.

During his trip to the Middle East last week, President Donald Trump had one consistent theme and he never wavered from it: The region needs to unite to stop Iran. Mutual antipathy for Tehran has driven Arab regimes such as Saudi Arabia to make common cause with Israel. It was also the motivation for the massive \$110 billion arms deal Trump struck with the Saudis, who believe that President Obama’s nuclear agreement with Iran has endangered their security.

But while Trump talks tough about the Iranians, the normally bellicose Islamist regime has been restrained, at least by its standards, in response. Why? The Iranians may be unhappy with Trump's effort to orchestrate the creation of a Middle East NATO that would oppose their dream of regional hegemony, but they are actually quite pleased with other elements of his administration's Iran policy. For all of Trump's bluster, his decision not only to leave the nuclear agreement in place but to erect no obstacles to a major U.S. commercial deal with Iran may have convinced the ayatollahs that the president isn't quite as hostile as he wants to seem.

One of the least noticed aspects of the nuclear deal was a provision that granted Tehran an exception to U.S. sanctions that remained in place after it was signed. That provision allowed U.S. companies to sell "commercial passenger aircraft and related parts and services" to Iran, and Boeing took advantage of it, joining European businesses in a race to secure Iranian business.

It was a clever strategy that enabled Obama to undermine the remaining resistance to the deal. If, as Obama hoped, a major U.S. firm such as Boeing were to conclude a massive deal of its own with Iran, the jobs created by the sale would build a strong new constituency opposed to retightening the screws on Tehran no matter the regime's subsequent actions.

Boeing's deal with Iran was concluded in June 2016, and the Obama administration subsequently issued the requisite licenses for it to move forward. But the Trump administration still has a chance to raise objections and to block the delivery of the planes to Tehran.

The grounds for objection were already clear last year, when Boeing was celebrating the deal: Many of the companies with which it would be doing business have strong connections to or are owned by the Iranian Revolutionary Guard Corps (IRGC), which coordinates Iran's international terrorist network. Yet so far, the Trump administration has remained suspiciously silent about the deal, leading Iran to the not unreasonable conclusion that while the president may be willing to talk about its role as the world's leading state sponsor of terror, he is as reluctant to do something about it as his predecessor was. There's a glaring contradiction between Trump's indulgence of Boeing's desire to profit from its dealings with Iran and his efforts to rein in a dangerous foe of U.S. interests.

Trump has no good options when it comes to tearing up the nuclear deal that he spent so much of the 2016 campaign denouncing as a betrayal of U.S. interests. Walking away from the pact at a moment when neither America's European allies nor Russia and China are willing to re-impose sanctions would simply give the Iranians permission to move quickly toward a bomb without providing a means short of war to stop them. But Trump does have options that can start the process of rebuilding an international quarantine against Iranian terror and punishing the regime for its illegal missile tests.

Earlier this month, the Senate Foreign Relations Committee passed a sweeping set of measures designed to impose new restrictions on trade with Iran because of its human-rights violations and support for terror. The point of such efforts is to expand the list of Iranian individuals and companies affected by the sanctions that still remain in place, so as to hamper the ability of the IRGC and other agents of the regime to profit from foreign trade. Moreover, even if other nations won't re-impose their own sanctions on Iran, U.S. measures that bar foreign banks from the American financial system if they do business with terror-connected Iranian entities can still have a devastating impact on the regime.

President Trump mocked John Kerry as the worst negotiator in history for his disastrous role in making the nuclear pact possible. But if he doesn't move to support the Senate bill and to do something about the Boeing deal, then he will effectively be throwing in his lot with Obama's secretary of state, who remains a public opponent of increased sanctions on Iran.

The reason for Trump's reluctance to move against Boeing is obvious: Promises to create American jobs were as important to the success of his campaign as were his criticisms of Obama. Putting any further obstacles in the way of the transaction would have a devastating impact on the company and the thousands of workers it employs. Moreover, Boeing is looking to expand its ties with Iran and has applied for another license to sell 30 more planes to entities within the country. But Iran uses commercial planes such as the ones Boeing sells to ferry supplies, munitions, and "volunteers" to Syria, where they have helped preserve the rule of the barbarous Assad regime. No one in the White House can pretend that Boeing's budding business relationship with the Islamic Republic is unrelated to the security concerns that Trump discussed with the Saudis and Israelis last week.

All of which is to say that there's a glaring contradiction between Trump's indulgence of Boeing's desire to profit from its dealings with Iran and his efforts to rein in a dangerous foe of U.S. interests. If he stays silent and/or allows the planes to be delivered, it may preserve jobs for some of the working-class voters who backed him. But it will also validate Tehran's belief that he is as much a paper tiger as Obama was. And an Iran unfettered by fear of U.S. power, hard and soft, would be an even bigger threat to global security.

<http://www.nationalreview.com/article/448120/trump-iran-tough-talk-little-action-obama-nuclear-deal-boeing-business>

[Return to top](#)

RT (Moscow, Russia)

OPCW Discredits Itself By Dodging Proper Syria Chemical Attack Probe – Moscow

May 26, 2017

Author Not Attributed

Russia has demanded the immediate dispatch of an independent fact-finding mission to the site of last month's chemical incident in Idlib and the airbase from where the attack was allegedly launched, noting that constant delays discredit the OPCW and render its mandate irrelevant.

Over 80 people were killed and 200 others injured on April 4, in an alleged sarin gas incident at Khan Shaykhun in Syria's Idlib province. Backed by their allies, Washington rushed to blame Damascus based on open-source intelligence and three days later, carried out a massive cruise missile strike on Syria's Shayrat Airbase in the Homs Governorate.

Damascus strongly denied responsibility, saying it did not possess or use chemical weapons, and that the Syrian Air Force destroyed a facility where the militants apparently stored nerve gas.

Moscow and Damascus have condemned Washington's unilateral actions, insisting on a proper investigation into the Idlib attack. And while Russia has repeatedly insisted on launching an independent international probe into the tragic episode, Paris promptly prepared its own report which echoed the US assertion that Damascus was responsible for the attack.

The Syrian government, who is a signatory to the Organization for the Prohibition of Chemical Weapons (OPCW), destroyed its 1,300-ton chemical weapons arsenal – except for the stockpiles located in the rebel and terrorist-controlled areas – under UN supervision following a deal brokered by Moscow and Washington in 2013.

On May 23, the UN Security Council once again discussed the chemical attack in Idlib. Izumi Nakamitsu, the UN disarmament, chief told the Security Council that planning for the fact-finding

mission to the site was “already underway,” but no date has yet been set, as the UN is allegedly working to confirm security assurances needed to dispatch an international team of experts.

Moscow reminded the international community that in order to draw any reliable conclusions, investigators should first visit the site of the incident and the Syrian airbase – which Damascus had agreed to provide free and safe access to, both before and after the facility was bombed by 59 US Tomahawk missiles.

“It looks like no one is in a hurry to go to Khan Shaykhun for verification of the details of a case as resounding as this one,” Russia’s foreign ministry said. Moscow also questioned why investigators would refuse to visit the Shayrat Airbase, which, according to the anti-Damascus coalition, was used to launch the chemical attack.

“We would like to emphasize that in early April, Damascus provided official guarantees for safe access there for the experts of the OPCW mission to establish the facts of the use of chemical weapons in Syria,” the ministry said in a statement.

It’s “really saddening” that OPCW continues to delay its investigation citing unfavorable security conditions, the ministry added. “All the prerequisites for organizing a visit in terms of security requirements and fulfillment of obligations under the Convention have been established.”

Moscow has demanded that an international team of experts be sent immediately, emphasizing that further delays would discredit OPCW’s investigative mechanism.

“Further evasion of a full-fledged investigation will call into question the competence of Joint OPCW-UN and OPCW Fact-Finding missions and the relevance of their further existence,” the foreign ministry said.

The Russian foreign ministry criticized the malpractice of “remote investigations” into chemical weapons incidents as “totally unacceptable.”

“This is not just an imitation of work – we are dealing with conscious, deliberate falsification, pursuing clearly predefined political goals,” the ministry underlined.

Moscow again raised a number of questions pertaining to the West’s ‘evidence,’ in particular, the biomedical and other samples allegedly collected at the site. The UN requires sampling to be done by its own teams following the complete and unbroken chain-of-custody and the analyses determined in OPCW-designated laboratories.

Russia also questioned the validity of sources “compromised by links with militants and terrorist structures.”

“Isn’t it the time stop building far-reaching accusations on the basis of poorly produced, staged video materials and other inaccurate information which the irreconcilable Syrian opposition and its foreign patrons are supplying in abundance?” the ministry said.

Moscow noted that the US, UK, and France once against sought to “impart a marked anti-Assad and anti-Russian taint” to this week’s discussion at the Security Council.

“It once again confirmed that the ‘denouncers’ of Damascus are not interested in establishing the truth in the issue as crucial as who stood behind the possible use of sarin in the Syrian province of Idlib on April 4,” the ministry said.

“Representatives of the US, UK, and France fiercely resist attempts to find out how justified is their

'in absentia' verdict of an allegedly incontestable responsibility of the Bashar al-Assad's government in that chemical attack in the settlement of Khan Shaykhun."

<https://www.rt.com/news/389765-opcw-idlib-chemical-attack-probe/>

[Return to top](#)

The Diplomat (Tokyo, Japan)

The Fallout From Pakistan's Nuclear Tests

By Shah Meer Baloch

May 29, 2017

May 28 is officially a "Day of Greatness" for Pakistan, but for many Balochs it's a black day.

On May 28 each year, Pakistan proudly celebrates "Youm-e-Takbir," which translates as the "Day of Greatness," to commemorate the country's first successful detonation of nuclear devices. But the locals in Balochistan's Chagai district, and citizens all across Balochistan, see May 28 as a "black day."

The locals still suffer as a result of the nuclear explosions the Pakistani government set off in the Ras Koh mountains 19 years ago. The new generation of Baloch inhabitants in the region is plagued with serious diseases stemming from those blasts. And all in Balochistan are constantly reminded of the promises made at the time by Prime Minister Nawaz Sharif (then serving his second of what would be three terms, spread out over 17 years) to invest in health, education, roads, and infrastructure in the province — promises that have yet to be fulfilled.

And yet it seems more important to Pakistan that on May 28 it became a member of the club of nuclear powers when it conducted five nuclear tests (followed by a sixth on May 30) in response to India's five tests two weeks earlier. "We have settled the score," Sharif said in 1998 in a nationally televised address defending the explosions. "I am thankful to God."

But how many remember the plane hijacking just a few days before by three Balochs protesting those planned nuclear tests? On May 24, 1998, PIA Flight 554 took off from Turbat, destined for Karachi. Dawn explained their motives in a report on May 25, 1998: "They [the hijackers] were opposed to any nuclear test in their native Balochistan province following the recent Indian blasts, official sources said."

The hijackers (Sabir, Shaswar, and Shabir) planned to take the plane to India, but did not succeed. Instead, the pilot landed at Hyderabad airport in Pakistan, as the hijackers were tricked into believing that they had actually landed at the Bhuj airfield in India. To deceive the hijackers, all mosques in the city were asked not to use loudspeakers. Some also say that an Indian flag was hoisted at Hyderabad airport. At night, Pakistani commandos overpowered the hijackers and the 30 passengers and five crew members on board were freed, unharmed.

Some are of the opinion that India's intelligence agency, the Research and Intelligence Wing (RAW), was behind the plot because India knew that Pakistan – an undeclared nuclear power – would undoubtedly test its nuclear weapons after India's own nuclear tests conducted earlier that month.

On May 28, 2015, hijackers Shaswar and Sabir were executed in the Central Jail in Hyderabad, and Shabir was hanged in the Karachi Central Jail. With their deaths, the hijacking case came to a close, but the grave consequences of nuclear tests on the residents of Chagai and nearby towns still remain.

Some Historical Background

Pakistan began building nuclear weapons in the early 1970s, when India became the sole nuclear power in South Asia. Prime Minister Zulfikar Ali Bhutto, in power in Pakistan at the time, famously said “Ham ghaas kahe ge, mager bomb banahe ge” — “We will eat grass later, but we will make a bomb.”

Shortly before the 1998 tests, the Pakistani government announced that it had chosen a deserted area in Chagai district to conduct them. But in his 2014 Master’s thesis, titled “Impacts of Nuclear Tests on Chagai,” Abdul Raziq reveals that the area was actually a village and was not deserted. He writes that the blasts took place on one mountain in the Ras Koh mountain range (Koh-E-Kamran), in the village of Chehtar in Chagai district. While the government claimed that there were “only ten households near to the site, who were shifted to a safer place,” Raziq reports that there were many households near the site, and that even if the tests were conducted one kilometer from the ten households the government says were moved, it would not have kept them safe. “Four thousand people were affected from the blasts,” he writes. “Even the government did not facilitate the people who were displaced and dislocated.”

In retrospect, Balochistan was divided at the time about the nuclear tests conducted in the province. For instance, Senator Sardar Sana Ullah Zehri of the then-ruling Balochistan National Party applauded them. On the other side, Senator Javed Mengal of the same party criticized the government for conducting the nuclear tests. The Baloch Student Organization (BSO) strongly condemned the explosions.

Soon after the tests, on May 21, 1998, The News reported that Sardar Akthar Mengal, chief minister of Balochistan at that time, had held talks with Sharif “for accelerating [the] process of development in the province. Mengal apprised the prime minister on financial problems and lack of funds for development in Balochistan.” Mengal requested that Balochistan be loaned 2.5 billion rupees for more development projects. According to reports, the chief Minister of Balochistan neither criticized nor applauded the nuclear tests. He later accompanied the prime minister on his visit to Chagai District on June 18-19.

Impact of the Nuclear Explosions on Locals

In his thesis, Raziq writes about the impacts of the residual radiation resulting from the blasts, which has lingered over Chagai – cases of lung, liver, and blood cancer, skin diseases, typhoid, and infectious hepatitis, as well as serious effects on the nervous system, blood pressure, eyes, and throats, and on newborn babies. The tests also impacted the environment.

There are significant numbers now suffering from thalassemia and hepatitis. Increased numbers of mental illness cases can be attributed to the hopelessness that the locals feel as they face seemingly unstoppable diseases that have sprung up in the area after that day in 1998. At almost every gathering Raziq attended during his research, young people asked questions about hepatitis and how it can be stopped, what kinds of herbs could be used, and whether there is any relief from the worry. He reports, “Even many people with hepatitis go undiagnosed, because the disease is mistaken for the flu or... [displays] no symptoms.” According to Tariq Rafiq, founder of the Iqra Blood Bank and the Welfare Society of Kharan, nearly half of the Chagai population has hepatitis.

In his paper, Raziq notes that after the blasts, every third death can be attributed to cancer. “Seven members of my family have died due to the cancer,” says Ehsan Mir of Nushki district (Nushki used to be part of Chagai district but it is now separate). A young boy named Shay Mureed Mengal of Nushki District died from blood cancer on May 5 of this year. Raziq’s research revealed that cancer is prevalent in Chagai, Nushki, and Kharan districts – all three are close to the Ras Koh mountains.

Thalassemia, a blood disorder, is one of the most dangerous diseases in the region, according to Tariq Rafiq. “More than half of the patients who had visited the blood bank have had major thalassemia. According to my information, the parents or grandparents of the patients do not have this problem. This is definitely very alarming.”

“Please allow me to share a story with you,” he went on. “Mohammed Ilyas, resident of the Ras Koh Union Council, brought two of his children to the blood bank in 2016. Two-year-old Haleema Bibi and four-year-old Ahmed Mehar had thalassemia. They needed O negative blood. I could not find the required blood to save both because it is a rare blood group. We lost Haleema.”

Rafiq paused, overcome with emotion. “It is not possible to provide blood to every patient and save him/her, but I am trying my best to play my role as a social worker. However, there are many thalassemia patients. They go to Quetta and Karachi for treatment. People who can’t afford to go far come to me.”

Balochistan is the richest of Pakistan’s provinces in terms of natural and mineral resources, and Chagai is one of the richest districts in all of Balochistan. The Reko Diq copper and gold mine there, an untapped resource, is valued at nearly \$500 billion. The Sandak Copper-Gold project being run by the Metallurgical Company of China (MCC) is located in Sandak, also in Chagai. And yet, despite the abundance of natural wealth, Balochistan remains the poorest and most backward of the provinces. According to a 2016 UNDP report, 71 percent of the people of Balochistan live in multi-dimensional poverty.

“I promise I will make Chagai a model district in terms of roads, hospitals, and other infrastructure in the country,” Prime Minister Sharif said soon after the test, notes local journalist Muhammed Akbar Notezai. Sharif gave this statement publicly in Dalbandin, one of five tehsils (administrative centers) of Chagai district. But after a decade and a half, the town is still as poor and backward as it was before. To this day, the inhabitants of Chagai yearn for basic amenities: clean drinking water, electricity, hospitals, employment, and academic institutions. On a trip to Chagai, one of Dalbandin’s aging residents told Notezai: “After the nuclear tests in 1998, PM Nawaz Sharif promised that he would bring development to Chagai but, so far, nothing has changed over here.”

The nuclear weapons testing by neighboring arch-rival India, with which Pakistan has fought two wars, may have been justification for Pakistan making a show of testing of its own weapons. After all, India brought these weapons to the subcontinent, which prompted the need for nuclear deterrence in South Asia. But the people of Chagai must bear the consequences in the form of diseases which reportedly did not exist there before the nuclear tests.

It should be noted that more than 56 years after the nuclear bomb test on Kiritimati, then known as Christmas Island, the government of Fiji paid compensation to the victims of the blasts. The British government had refused to pay any compensation, but Fiji’s Prime Minister Frank Bainimarama took the lead by compensating the survivors of 1957-1958 tests. Thousands of British, Australians, and New Zealanders affected by the tests still await compensation and special recognition.

The people of Fiji suffer from the same kinds of diseases as the residents of Chagai, and yet scientific data is lacking on the impacts of the nuclear tests on Chagai and nearby places. It is the time for the state to allow national and international researchers on the ground to report the facts.

Nawaz Sharif is currently serving his third term as prime minister of Pakistan, and his broken promises still echo in the ears of people of Chagai and all of Balochistan. One wonders if he will ever follow the lead of Fiji’s prime minister and make good on his promises.

<http://thediplomat.com/2017/05/the-fallout-from-pakistans-nuclear-tests/>

[Return to top](#)

Modern Diplomacy (Brussels, Belgium)

Youm-e-Takbeer: The Day of Greatness

By Zain Moeed

May 29, 2017

The month of May 1998 transformed South Asian strategic dynamics when India and Pakistan demonstrated nuclear weapon capability in a tit for tat fashion. On 28 May 1998 Pakistan conducted a series of nuclear tests as a direct consequent of Indian nuclear detonation earlier that month. PM Nawaz Sharif stated, "If India had not exploded the bomb, Pakistan would not have done so. Once New Delhi did so, we had no choice because of public pressure."

The question of why Pakistan went nuclear despite severe economic and political constraints has always fascinated western epistemic community. In order to provide plausible argument, academics and policy makers have largely utilized realist framework to address Pakistan's nuclear quest and much coined security consciousness along with balance of power remained core logic. This logic carries weight in the sense that, India and Pakistan cherished long history of violence and frequent border skirmishes also add to fragility. Therefore, India nuclear test first in 1974 and again in 1998 compelled Pakistan to develop its own nuclear muscle.

However, Scott D. Sagan's "Why Do States Build Nuclear Weapons? Three Models in Search of a Bomb" provides comprehensive insight into states' motivations behind nuclear weapon. Sagan, in his paper, proposes three distinctive theoretical frameworks which he terms "Models" about why states acquire nuclear weapon capability. These models, according to Sagan are, the security model, the domestic politics model and the norms model.

Pakistan's nuclear capability falls in the category of security model. According to this model, the primary impetus behind state's nuclear quest is security. Pakistan build its nuclear weapons capability to increase national security against foreign threats, especially nuclear threats emanating from India. India's overt nuclear detonation drastically increased Pakistan's security consciousness.

India also didn't forget to warn Pakistan on Kashmir issues. After successful detonation of nuclear devices on May 11 and 13, the then Indian Home Minister L.K. Advani called on Pakistan to "realise the change in the geo-strategic situation in the region".

Despite international uproar, Pakistan's nuclear explosion met with immense support at domestic level, people came out chanting slogans in favor of nuclear bomb. Pakistan successfully neutralized India's aggressive hegemonic design by reciprocating nuclear tests.

Since then, nuclear deterrence has played vital role in South Asian strategic stability. Pakistan celebrates Youm-e-Takbeer every year on May 28 to commemorate the historic nuclear tests which is indeed a reminder of the struggle and great odds that Pakistan overcame and emerged as first Muslim nuclear weapon state on world map.

However, its pertinent to note that Pakistan has always been a reluctant participant in South Asian nuclear arms race. When India surprised much of the world by detonating its first nuclear device, code named as "Smiling Buddha" on May 18, 1974, Pakistan brought a draft proposal before the United Nations for a nuclear weapon-free zone in South Asia. It's quite evident that decision makers in Islamabad were quite aware of repercussions of nuclear arms race in the region. Pakistan, in 1978 also proposed a joint Indo-Pak declaration renouncing the acquisition and manufacture of nuclear weapons. During very next year, Pakistan proposed to India mutual inspections by India and Pakistan of nuclear facilities.

Above all, in 1979, Pakistan offered simultaneous adherence to the NPT by India and Pakistan. However, these proposals met with cold feet by India which not only diminished prospects for nuclear arms control in the region but also compelled Pakistan to become part of nuclear arms race.

Indian ambitious great power status left Pakistan with no other option but to restore balance of power by conducting nuclear test. Unlike India, Pakistan does not harbor any aggressive global design rather, its nuclear capability is solely defensive.

For quite long time, Pakistan has been following strategic restraint. However, India has been massively expanding its conventional and nuclear stocks with a dangerous ambition to dominate South Asia. A responsible nuclear Pakistan is well aware of sensitivities associated with such adventurism. Therefore, it has never encouraged large scale military modernization.

Being a responsible state, Pakistan believes in peaceful coexistence but it requires serious efforts to settle longstanding disputes such as Kashmir. Peace and prosperity in the region is directly associated with Kashmir dispute. However, BJP-led government in India is reluctant participant.

Nonetheless, South Asia can be stopped from moving towards nuclear brinkmanship if India and Pakistan follow a comprehensive peace process for the greater benefit of billions of people living on either side of border. Peaceful settlement of disputes is only way forward. Nuclear capabilities of both countries can deter each other but it won't settle disputes but a sincere composite dialogue will.

http://moderndiplomacy.eu/index.php?option=com_k2&view=item&id=2649:youn-e-takbeer-the-day-of-greatness&Itemid=137

[Return to top](#)

Financial Express (New York, NY)

Pakistan under UNSC scanner over nuke material supply to North Korea

Author Not Attributed

May 30, 2017

Pakistan is one of few countries having both a diplomatic and an economic relationship with North Korea.

The international community, it seems, continues to be unsuccessful in convincing North Korea to stop its missile tests, and according to well-placed sources in the United Nations', this rogue nation has been quietly and consistently receiving sustained help from Pakistan when it comes to the supply of nuclear material. Pakistan is one of few countries having both a diplomatic and an economic relationship with North Korea. This relationship goes back to the 1970s, when then Prime Minister Zulfikar Ali Bhutto undertook a state visit to Pyongyang as part of his foreign policy campaign to strengthen relations with socialist states.

The United Nations is very concerned about North Korea repeatedly announcing and conducting nuclear tests, but equally anxious about countries like Pakistan allegedly providing tacit support to North Korean leader Kim Jong-un through the supply of restrictive nuclear material to facilitate these frequent and successful missile launches. To rein in countries like Pakistan, the United Nations Security Council pursuant to Resolution 1718 passed in 2006 and Resolution 2270 passed in 2016, has reportedly been investigating Islamabad's role in allegedly supplying restrictive nuclear materials 'Monel' and 'Inconel' to North Korea.

According to sources, these nuclear materials, received reportedly from China, are being diverted to Pyongyang via the Pakistan Energy Commission (PAEC). Complaints in this regard have been received at the UN headquarters over the past year in spite of the restrictions imposed on UN member states via Resolution 1718 and Resolution 2270. The UN Sanctions Committee on North Korea and its Panel of Experts (PoE), which has been monitoring the implementation of the sanctions against North Korea, has sought information from Pakistan's Permanent Mission to the UN in New York about alleged refuelling stops made North Korea's national carrier Air Koryo at airports in Pakistan over the last few years. As per information now available with the PoE, Air Koryo made these multiple landings at the Islamabad Airport between January 2013 and June 2016.

The last such landing is said to have occurred on May 17, 2016, i.e. much after the UN adopted Resolution 2270(2016) on March 2, 2016 to enlarge the scope of sanctions against North Korea. According to information available on the web site www.un.org, Resolution 2270 pursuant to Resolution 1718 clearly states that "All Member States are required to inspect cargo destined to or originating from the DPRK or brokered by the DPRK that is within or transiting their territories. This includes items that are being transported on DPRK flagged aircraft or vessels, transported by rail and by road, as well as the personal luggage and checked baggage of individuals entering into or departing from the DPRK that may be used to transport items the supply, sale or transfer of which is prohibited."

Insofar as non-proliferation is concerned, Resolution 2270 clearly states that, "All Member States are required to prevent the direct or indirect supply, sale or transfer to the DPRK, through their territories or by their nationals, or using their flag vessels or aircraft, and whether or not originating in their territories, of items relevant to nuclear, ballistic missiles and other weapons of mass destruction-related programmes." The two resolutions read together further state that, "All Member States are further required to implement a binding dual-use "catch-all" provision to apply the above measures on any item if the State determines that it could contribute to the DPRK's nuclear or ballistic missile programmes, other weapons of mass destruction programmes or other activities prohibited by the resolutions."

Pakistan has maintained that these landings were purely technical in nature and did not involve loading or offloading of cargo. On whether Islamabad inspected Air Koryo aircraft as and when they landed on Pakistani soil, Islamabad's Permanent Mission to the UN in New York is yet to provide information.

<http://www.financialexpress.com/world-news/pakistan-under-unsc-scanner-over-nuke-material-supply-to-north-korea/692349/>

[Return to top](#)

Washington Examiner (Washington, DC)

This Successful Nuclear Missile Defense Test Doesn't Mean The US Is Safe From Nuclear Attacks

By Tom Rogan

May 30, 2017

The U.S. Missile Defense Agency is watching its computer screens carefully, with fingers crossed.

Earlier Tuesday afternoon, the agency successfully tested its Inter-Continental Ballistic Missile midcourse missile-defense system. The test involved an interceptor "kill vehicle" destroying a pretend ICBM plus warhead nuclear missile in outer space. In this case, over the Pacific Ocean.

That's a fancy way of saying the system can stop a nuclear missile from hitting its target after the nuke has been fired.

It's a big moment. Previous tests have had mixed success, and the Pentagon will be very relieved this one succeeded.

Still, when it comes to missile defense tests, the devil is in the data. Specialists will be nervously trawling over the data to see how well the interceptor performed. They know the threat posed by North Korea's ballistic missile program is growing rapidly. To justify their vast budget (\$8.2 billion in the 2017 fiscal year), the agency is under huge pressure to deliver results.

That said, Tuesday's success was expected. For one, the interceptor's "exo-atmospheric kill vehicle" (the interceptor element that slams into the enemy missile) employed today is new. As missile expert Laura Grego, explains, this particular kill vehicle has advanced thrusters that allow for very fine-tuned adjustments just before impact. Dealing with missiles flying through space at thousands of miles an hour, kill-vehicle calculations must be precise.

Nevertheless, we need to be careful here. Missile defense is far from a perfect solution.

For a start, interceptor systems remain in their infancy. They have not been tested against the high-end countermeasure technologies with which world powers equip their nuclear missiles. That speaks to a broader issue here. Remember, this test was not simply about the U.S. military's technology-mission requirements. It was also a public relations opportunity, one the Pentagon needed to pass.

Put simply, we are years away from having interceptors that would offer credible deterrence against advanced Russian ICBMs.

But that's just one issue. Another challenge? Relative numbers.

At present, the U.S. has 36 interceptors on the West Coast. Yet the Russians have thousands of nuclear warheads, and the Chinese have hundreds. Even then, with North Korea likely possessing more than 10 nuclear weapons already, its rapidly advancing missile capabilities are a major threat. Once North Korea acquires the ability to build one ICBM plus warhead capability, it will rapidly be able to build many more.

In perhaps less than 10 years, it is feasible that North Korea might have enough missiles and warheads to overwhelm the U.S. missile defense system. They only have to be successful once.

Don't get me wrong. I'm not saying that we should cease missile defense research and development. Facing nuclear attack, it's worth exploring every means of defense at our disposal. But we should be pragmatic in our missile defense investments and practical in our strategic assessments. We cannot simply shields-up our way to nuclear security as if we were a starship in Star Trek.

Ultimately, to protect the U.S. homeland from nuclear attack, the best U.S. strategy remains the oldest. Namely, our unquestioned nuclear deterrent triad. To borrow a line from the movie "Crimson Tide" (in which a U.S. nuclear submarine crew is ordered to nuke a Kim Jong-un-style leader), our array of ballistic missile submarines, Air Force bombers, and ground-based missiles introduces "a moment of pause" to our adversaries' calculations.

In that vein, we must push ahead with the development of the Trident-replacement nuclear submarine fleet (the current fleet is aging and vulnerable to enemy detection) and divert Defense Department resources towards building more attack submarines (those that hunt enemy nuclear submarines). We must also make it as difficult as possible for our adversaries (whether Iran or North Korea) to acquire the technology and infrastructure to build effective ballistic missile forces. That work involves the intelligence community as much as it does the military.

Ultimately, however, the most important element of our nuclear defense strategy is perception. Contemplating a nuclear attack against us, our enemies must doubt their own ability to do so effectively, while knowing we could and would annihilate them in short order.

<http://www.washingtonexaminer.com/this-successful-nuclear-missile-defense-test-doesnt-mean-the-us-is-safe-from-nuclear-attacks/article/2624494>

[Return to top](#)

War on the Rocks (Washington, DC)

The Risk of Nuclear Catastrophe Under Trump

By Rebecca Lissner

May 23, 2017

Growing tension on the Korean Peninsula has returned the unimaginable terror of nuclear war to the American public consciousness. The danger is a global one: Nine states possess nearly 15,000 nuclear weapons and the detonation of even one of these weapons could cause humanitarian and economic catastrophe. Although the use of a nuclear weapon by a state or non-state actor is unlikely, it is not impossible, and the risk may be growing. Indeed, such a rare event can be evaluated in terms of a simple risk-assessment formula: probability multiplied by consequences.

Given the enormous consequences of nuclear use, even small fluctuations in probability warrant attention. Some variation will arise from changes in the international environment, such as technological advances that make nuclear command and control systems more or less vulnerable to cyber-attack, or fluctuation in the level of tension between nuclear-armed rivals like India and Pakistan. But as the world's most powerful state, with its own vast nuclear arsenal as well as a record of leadership in nonproliferation and nuclear security efforts, the United States plays an important role in moderating — or enhancing — the likelihood of nuclear use.

President Donald Trump's comments during the campaign and transition prompted widespread concern about his cavalier attitude toward, and lack of knowledge about, the world's deadliest weapons. Since taking office, he has tempered his rhetoric somewhat — but more than 100 days into the Trump administration, there are early warning signs indicating the president's policies could increase the risk of nuclear catastrophe.

Setting aside accidental launch or detonation, the most likely scenarios for the intentional or miscalculated use of a nuclear weapon are nuclear detonation by a state during crisis or wartime, and nuclear use by a non-state actor, such as a terrorist group. While this president is nothing if not unpredictable, it is both important and possible to sketch out how such a nuclear use might play out. The five risks described below are meant as a starting point for that discussion.

Risk #1: Nuclear First-Use by the United States

First, the president has the sole authority to launch nuclear weapons through the “nuclear triad” of land, sea, and air-launched systems. The horrific consequences, fear of retaliation, and extraordinary capabilities of U.S. conventional forces militate against nuclear use in all but the most extreme circumstances. Nonetheless, Trump's impulsive temperament, obsession with projecting strength, and aversion to normative constraints may make him more prone to nuclear use than other recent presidents. Beyond these already-perceptible presidential proclivities, the Nuclear Posture Review — which recently began under Pentagon leadership — will elucidate the administration's declaratory nuclear doctrine, providing the first concrete indication of scenarios in which the Trump administration would consider nuclear use.

Risk #2: Inadvertent Nuclear Escalation

Second, the Trump administration's penchant for sending mixed signals increases the risk of misperception in the event of a crisis or war involving another nuclear state. Trump is famously mercurial, abruptly changing positions on issues ranging from NATO's obsolescence to the desirability of nuclear proliferation. Rather than allowing the White House communications staff to clarify his positions, Trump often contradicts them. In December, for example, when aides sought to soften Trump's call for the United States to "strengthen and expand" its nuclear arsenal, Trump went on the record a second time to threaten an arms race. Moreover, senior national security aides frequently stake out divergent policy positions – with the president's apparent encouragement — as exhibited by the slew of incompatible explanations for Trump's April decision to launch cruise missiles into Syria. The result is confusion surrounding whose statements represent administration policy — a whiplash effect most recently on display in the back-and-forth on North Korea. Though the president seems to believe unpredictability creates bargaining leverage, it also prevents the administration from credibly telegraphing its intentions. This dynamic makes diplomacy difficult and privileges potentially escalatory military displays to demonstrate seriousness. If a crisis were to reach boiling point, the Trump administration would struggle to turn down the heat by credibly signaling restraint or limited aims. Moreover, amidst rising tensions, a weaker adversary would have little choice but to engage in worst-case-scenario planning, and a threatening tweet impulsively dispatched by the president could provoke a foreign leader to gamble on a first strike rather than risk U.S. preemption. Beyond contingencies that directly implicate the United States, Trump's slippery reputation could also hinder his ability to arbitrate international disputes involving nuclear powers — for example, if war were to break out between India and Pakistan.

Risk #3: A Lower Global Nuclear Threshold

Third, Trump has tempered his most incendiary campaign rhetoric on the subject of nuclear weapons — but serious consequences would accompany a return to positions that promote nuclear proliferation and lower the normative threshold for nuclear use. Encouraging U.S. allies and partners like South Korea, Japan, and Saudi Arabia to go nuclear — whether explicitly or by stoking fears of abandonment — could spark atomic arms races in already-unstable regions. In addition, the administration's recent extension of sanction waivers suggests its intent to abide by the terms of the Iran nuclear deal — but a presidential decision to abrogate the "worst deal ever," whether through outright withdrawal or accumulated acts of subtle sabotage, would likely spark an acute crisis. Proliferation risks would be further compounded by threats to use nuclear weapons first in unnecessary contingencies, such as against the self-proclaimed Islamic State, eroding the non-use norm that has contributed to nuclear restraint since 1945.

How might the Trump administration's policies affect the likelihood of nuclear use by non-state actors? Terrorist groups are liable to use whatever lethal material they can get their hands on — as demonstrated by the Islamic State's employment of rudimentary chemical weapons in Iraq and Syria — so the critical limiting factors are access to nuclear weapons, material, and expertise, and the ability to move it across international borders. Two additional factors will impact the U.S. government's ability, in concert with international partners, to thwart such threats.

Risk #4: Diminished Domestic Capacity to Prevent Nuclear Terrorism

The United States' capacity to counter nuclear terrorism will depend on the Trump administration's resource decisions. Within the U.S. government, responsibility for the prevention of WMD terrorism is spread across numerous agencies with interlocking functions: From Department of Energy labs developing nuclear detection technology, to the Department of Homeland Security conducting radiological monitoring at U.S. ports, to intelligence and law enforcement agencies tracking threats, to the State Department coordinating with other countries to limit the spread of nuclear weapons

globally, to Department of Defense training special operations forces to render safe nuclear weapons or material. Sustaining such capacity requires personnel and funding. The administration's slow pace of political appointments creates risk by hobbling agency leadership, hindering inter-agency collaboration at the senior level, and creating a vacuum when it comes to defining affirmative policy priorities. The extent to which the Trump administration seeks funding for nuclear security-related programs in their proposed fiscal year 2018 budget — expected to be released on May 23 — will indicate the level of priority the administration assigns to mitigating WMD terrorism risk. (The Trump administration's budget blueprint does not specifically address this issue.)

Risk #5: Weakened International Nuclear Security Cooperation

Finally, a withdrawal from international nonproliferation and nuclear material security cooperation could increase the risk of nuclear use by a non-state actor. If the Trump administration follows through on its avowed skepticism of multilateral institutions — most notably the U.N. system — critical cooperative mechanisms could be placed in jeopardy. The International Atomic Energy Agency (IAEA), for example, is a U.N. agency that advances best practices in safeguarding nuclear material around the world. It maintains a global database for tracking lost or stolen nuclear materials, among other vital functions. The IAEA relies on U.S. contributions for roughly a quarter of its budget and withholding those funds would severely hinder its effectiveness. Similarly, an administration disdainful of U.N. bodies is unlikely to break the diplomatic logjam over restrictions on the production of nuclear material through the Fissile Material Cutoff Treaty, and may not insist upon stringent IAEA safeguards as a precondition for future agreements on civil nuclear cooperation. Beyond formal institutions, the Obama administration initiated a Nuclear Security Summit process, which convened global leaders to take concrete steps toward reducing the risk of nuclear terrorism. Whether the Trump administration maintains this focus and pushes for implementation of commitments made at past summits will further impact risk going forward.

Nuclear detonation, whether by a state or non-state actor, remains an extremely remote possibility, and the risk of such a rare event is difficult to quantify. Nonetheless, the catastrophic consequences of nuclear use demand attention — not only from the White House, but also from Congress and the American people. Fortunately, the Trump administration is still in its early days and has ample opportunity for progress. “I hate nuclear more than any,” the president said during the 2016 campaign when asked about nuclear weapons. Action to address the five risks described above — as part of a comprehensive nonproliferation and nuclear security agenda — will signal the seriousness of the administration's effort to reduce nuclear dangers.

<https://warontherocks.com/2017/05/the-risk-of-nuclear-catastrophe-under-trump/>

[Return to top](#)

The Hill (Washington, DC)

How Trump's Budget Makes Us All Vulnerable to Bioterrorism

By Tara Sell, Crystal Watson and Matthew Watson

May 31, 2017

For nearly two decades, the federal government has committed to biopreparedness and made significant progress toward enabling our country to withstand and respond to biological attacks and pandemics. Funding for some of these programs has declined over time, but the new federal budget released last week by the Trump administration is uniquely drastic. It would undo the

bipartisan progress to build our biodefenses by crippling, and in some cases eliminating, programs that are vital to our national health security.

Threats to national and international biosecurity are far from speculative. In October 2001, anthrax spores were sent through the mail in an unprecedented act of bioterrorism against the U.S. This experience served as a wake-up call regarding our nation's vulnerability to biological threats.

Today, ISIS and other terrorist organizations are showing continued interest in using biological weapons. In 2014 an ISIS laptop was recovered containing a 19-page document on how to develop biological weapons, and late last year Kenyan authorities disrupted an anthrax plot by a medical student and associates affiliated with ISIS. Earlier this year, South Korea raised concerns that North Korea possesses biological weapons and could use drones to carry out attacks.

One important domestic biological threat is the potential for wide-area anthrax attacks, much larger than occurred in 2001. In such an attack, emergency rooms would be flooded with patients of all ages experiencing severe respiratory distress, extreme anxiety about their potential exposure, or both.

Politicians, individuals on social media and media would be trying to assess the damage, attribute blame and understand what was being done to respond. All would be trying to save lives, understand what happened and figure out what to do next. Political concerns, economic prosperity and societal stability would hang in the balance. Such an event would be terrible, but if the proposed budget cuts are enacted, the impact would be far more dire.

Here's how.

In the first moments after the attack is identified, we'd want to know the identity of the pathogen used in the attack, whether it could spread from person to person and what drugs and vaccines would work to treat and protect people. But with a 13 percent cut to CDC's preparedness and response capability, and complete elimination of DHS's National Biodefense Analysis and Countermeasures Center, the delay before these and other facts are known would increase, costing many lives.

First responders, hospital staff and public health professionals would be pressed into round-the-clock service. Hundreds of millions of dollars in cuts to FEMA grants, including the State Homeland Security Grant Program and Urban Area Security Initiative, would degrade local emergency responders' ability to mitigate the crisis on the ground by limiting their ability to train, plan and purchase needed equipment. An 11 percent reduction in funding (on top of a cumulative 50 percent reduction in prior years) to the Hospital Preparedness Program would limit hospitals' ability to plan and prepare jointly and to collectively meet the surge in demand for care generated by the attack. People would die unnecessarily while waiting for care.

In addition, public health officials would need to distribute life-saving drugs and vaccines to the men, women and children who may have only hours before the onset of life-threatening complications. But more than \$100 million in cuts to the Public Health Emergency Preparedness Cooperative Agreement would limit local responders' ability to set up points of dispensing for needed medications.

The government and the public would demand the rapid identification of the perpetrator(s). Scientists at the National Bioforensics Analysis Center and in the Bioforensics R&D Program at DHS would have played an essential role in determining the origin of the bioagent and attributing the attack. Unfortunately, these programs would be eliminated in the new budget. Without this unique capability, not duplicated anywhere in or out of government, the odds that the perpetrator(s) would go free would be significantly increased.

Evacuations would likely be necessary in the aftermath of a widespread attack on a U.S. urban center. But with a 36 percent cut to EPA's Homeland Security Preparedness, Response, and Recovery programs, there may be no one to lead the decontamination efforts or to determine how clean is safe. The operation of the city's business, education and government sectors would be suspended indefinitely. Entire communities could be abandoned.

We urge Congress to reject the severe cuts proposed by the Trump administration and to support the continuation of these and other critical national biopreparedness and response assets, which protect the health and safety of all Americans.

<http://thehill.com/blogs/pundits-blog/homeland-security/335813-how-the-trumps-budget-makes-us-all-vulnerable-to>

[Return to top](#)

The National Interest

How America Can Thwart North Korea's Nuclear Threat

By John Deutch and Gary Samore

May 31, 2017

The highest priority foreign-policy objective of the United States is permanent removal of all nuclear weapons and bomb-capable materials from North Korea. The current strategy of coercive diplomacy, combining negotiation and sanctions, has failed. North Korea resolutely maintains that the development and deployment of nuclear weapons and delivery vehicles that threaten the region and, in a short time, the United States, is the only means it has to maintain its authoritarian regime and deter possible invasion from South Korean and U.S. forces.

The United States needs to change its strategy significantly if it is to have any chance to achieving its highest priority foreign-policy objective. First, it needs to convince China to join, unreservedly, the effort to rid the Korean peninsula of nuclear weapons.

China is North Korea's economic lifeline. China is North Korea's largest trading partner and main source of energy, food and economic and military assistance. China could impose significant pressures on North Korea to abandon its nuclear ambitions. However, China has consistently opposed harsh sanction measures against North Korea. China's reluctance to do so is its interest in maintaining stability on the peninsula. North Korean regime change accompanied by a unified peninsula could plausibly result in a South Korean government closely aligned with the United States on the Chinese border. U.S. action such as the recent decision to deploy the Theater High Altitude Air Defense system in South Korea, ostensibly to counter North Korean offensive missile capability, provokes such Chinese concern. A violent collapse of the present North Korean regime accompanied by conflict would lead to a massive influx of North Korean refugees into China. China sees its interests as better served by the status quo than by the uncertainty accompanying actions that are designed to achieve regime change. It is a fantasy to believe that the Chinese can be induced to cooperate in stronger actions against North Korea if the United States imposes sanctions on China for its support of North Korea.

Second, if the United States and China are aligned, there is a greater chance of convincing North Korea there will be stability and political status quo on the Korean peninsula. A United States signal of its willingness to accept Chinese priority interest for stability and the political status quo could persuade China to use its considerable leverage on North Korea to get them to abandon its nuclear weapons capability. A joint Five Parties (China, Japan, Russia, South Korea and the United States)

security guarantee declaration might give North Korea sufficient confidence that there would be no interference in its internal affairs and the expectation for a normalized economic future. If North Korea perceives its prime security concern of regime survival has been met, its willingness to give up nuclear weapons should follow.

This new strategy would take a significant time to implement. The initial bilateral step would be to establish an understanding between the United States and China. It will not be easy; a leadership partnership between the United States and China to address this critical international issue at a time when so many other important issues divide the two countries is genuinely challenging and invites domestic political theatrics.

The second step would be a verified freeze on North Korean nuclear and missile activities, including some sanction relief, while multilateral negotiations take place on a peace treaty to end the Korean War and arrangements to recognize and normalize relations among the relevant parties. Some parties in the Six-Party Talks, notably South Korea, will resist a strategy that accepts the North Korean regime and its human-rights violations for an indefinite time period.

In the third step, and most challenging step, a peace treaty would be concluded and diplomatic relations would be established, all nuclear weapons would be removed from North Korea and a rigorous inspection and monitoring system put in place, and all economic sanctions would be lifted, except on exports of nuclear weapons and missile technology. Two steps, not currently part of the negotiations, could further reassure North Korea. Put the North Korea stockpile of weapons and fissile material in China, under Chinese custody with international inspection. Place a thin Chinese military contingent along the thirty-eighth parallel, perhaps as part of an international peacekeeping group, to act as a trip wire to deter conflict between north and south. U.S. forces would remain in South Korea until diplomatic normalization is achieved and perhaps beyond.

A new strategy implies adjusting the objectives of an old, failed strategy, so that priority objectives are more likely to be achieved. But, the price is that some important secondary objectives must be placed aside. The important secondary objectives the United States is setting aside are replacing the North Korean authoritarian regime and addressing its human-rights violations. These are heavy retreats indeed. China has also adjusted its objectives by agreeing that security and regime guarantees, which stabilize the peninsula, justifies its support for removal of North Korea's dangerous nuclear arsenal.

The new strategy proposed here may not be successful. But what is the choice? Staying on the current path of coercive diplomacy is drifting to conflict that promises to be bloody indeed. A military option is always on the table, but it is unrealistic to believe that a preemptive military strike against North Korean nuclear facilities or a missile-launch facility will not result in a significant—possibly nuclear—North Korean response. World leaders should welcome exploration of any agreement that might lead to resolution of this precarious crisis.

<http://nationalinterest.org/feature/how-america-can-thwart-north-koreas-nuclear-threat-20934>

[Return to top](#)

About the USAF 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.

[Return to top](#)