



# **USAF Center for Unconventional Weapons Studies (CUWS) Outreach Journal**

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12 May 2017

**Featured Item:** *"Iranian Domestic Challenges to the Joint Comprehensive Plan of Action"*. Authored by Alireza Nader, Ali Scotten and James Hoobler; published by RAND; May 2017

[https://www.rand.org/content/dam/rand/pubs/perspectives/PE200/PE218/RAND\\_PE218.pdf](https://www.rand.org/content/dam/rand/pubs/perspectives/PE200/PE218/RAND_PE218.pdf)

The Joint Comprehensive Plan of Action (JCPOA) nuclear agreement between Iran and the P5+1 (the United States, the United Kingdom, France, Russia, China, and Germany) has proven successful so far. However, some major challenges to the JCPOA from within Iran may emerge in the future. This Perspective examines the nature of the factional divisions that exist in Iran; how this factionalism may impact the nuclear agreement; and the viability of the JCPOA if major events were to occur, such as the death of the supreme leader or heightened U.S.-Iran tensions.

A lack of substantial economic benefits from the nuclear agreement and a marked increase in U.S.-Iranian tensions could shatter regime unity regarding the JCPOA's utility. In the short term, a failure by Rouhani to win reelection in 2017 could shift the balance of power back into the hands of traditional conservatives and principlists who oppose Iran's reintegration into the global economy and, therefore, are less averse to provoking the international community than are the centrists and reformists.

Washington must do more to ensure that the average Iranian sees the economic benefits of the deal. In addition, to help ensure that centrists continue to play a decisive role until the inevitable succession crisis, Washington must take efforts to lessen Tehran's perception that the United States poses an existential threat. If ensuring the longevity of the nuclear deal truly is a U.S. strategic priority, the President may have to take steps that are not politically advantageous in the short term. But weighed against the alternative, that risk is advisable.

## **US NUCLEAR WEAPONS**

- [Tunnel collapses at Hanford nuclear waste site in Washington state](#)
- [Close Calls, Hair-Trigger Systems, Faulty Missile Interceptors: Nuclear Security Then & Now](#)
- [Graphene membranes can make nuclear industry greener](#)
- [Secretary of Energy delivers optimistic message at WIPP](#)

## **US COUNTER-WMD**

- [GOP Senator to Introduce Bill Strengthening U.S. Missile Defense Amid North Korean Threat](#)
- [Death from above: how David Maisel turned 'the new Area 51' into land art](#)
- [US Approves \\$75 Million Sale of CBRN Protective Gear to India](#)

Issue No.1263, 12 May 2017

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## US ARMS CONTROL

- [Prospects for nuclear disarmament in uncertain times](#)
- [A Strategy for \(Modestly Increasing the Chance of\) Saving the INF Treaty](#)
- [Moscow points to US systematically violating obligations under INF treaty](#)
- [Deputy Secretary General discusses arms control in Vienna](#)

## ASIA/PACIFIC

- [North Korea's ICBMs have 'important shortfalls,' Pentagon says](#)
- [China presses South Korea on Thaad missile system](#)
- [Going Under Cover: Enhanced Concealment Effort Noted at the Punggye-ri Nuclear Test Site](#)
- [China, South Korea seek to steer North from nuclear path](#)

## EUROPE/RUSSIA

- [Russian chemists develop fabric resistant to chemical and biological weapons](#)
- [Nukes, Subs and Missiles: How Russia Plans to Challenge America's Military Dominance](#)
- [Jeremy Corbyn casts doubt over Labour pledge to renew Trident](#)
- [Russia rearms strategic forces: Satellite images show expansion of nuclear weapons sites on Kola](#)

## MIDDLE EAST

- [Who Issued an Order to Use Chemical Weapons in Syria, And What does He have to do with the Fairytale Wedding?](#)
- [Iran-North Korea: Weapons and nuclear connections](#)
- [Trump extends national emergency order on Syria, condemns 'brutal' regime](#)
- [Chutzpa News: Iran Says Israel 'Main Obstacle' to Nuclear-Free Middle East](#)

## INDIA/PAKISTAN

- [India-Pakistan ties to worsen unless Islamabad cleans up act, says US threat report](#)
- [19 years of Pokhran-II tests: Where does Indian nuclear Arsenal stand now](#)
- [Signing of a Safeguards Agreement with Pakistan](#)
- [An Indian Nuclear-Capable Ballistic Missile Test Failed Shortly After Launch. What Happened?](#)

## AFRICA

- [Zambia wary of mass destruction weapons](#)

## COMMENTARY

- [Nuclear weapons have saved millions of lives, but that could easily change](#)
- [Nuclear weapons are a threatening reality](#)
- [US military action against Pyongyang could undermine trust](#)
- [Nuclear weapons have saved millions of lives, but that could easily change](#)

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The Washington Post (Washington, DC)

### **Tunnel collapses at Hanford nuclear waste site in Washington state**

By Lindsey Bever and Steven Mufson

May 9, 2017

Hundreds of workers at the Department of Energy's Hanford nuclear site in Washington state had to "take cover" Tuesday morning after the collapse of 20-foot-long portion of a tunnel used to store contaminated radioactive materials.

The Energy Department said it activated its emergency operations protocol after reports of a "cave-in" at the 200 East Area in Hanford, a sprawling complex about 200 miles from Seattle where the government has been working to clean up radioactive materials left over from the country's nuclear weapons program.

The agency said in a statement that the 20-foot section is part of a tunnel that is hundreds of feet long and is "used to store contaminated materials." The tunnel is one of two that run into the Plutonium Uranium Extraction Facility, also known as PUREX. The section that collapsed was "in an area where the two tunnels join together," the department said.

The PUREX facility, once used to extract plutonium from spent nuclear fuel, has been idle for years but remains "highly contaminated," the agency said.

Energy Department officials said there was "no indication of a release of contamination at this point" but that crews were still testing the area. Responders also were using a robot to take video and survey the damage. The department said that Energy Secretary Rick Perry had been briefed, adding that "everyone has been accounted for and there is no initial indication of any worker exposure or an airborne radiological release."

But Edwin Lyman, a senior scientist at the Union of Concerned Scientists, said there is still cause for concern. "It appears that this is a potentially serious event," he said. "Collapse of the earth covering the tunnels could lead to a considerable radiological release."

An August 2015 report by Vanderbilt University's civil and environmental engineering department said the PUREX facility and the two tunnels had "the potential for significant on-site consequences" and that "various pieces of dangerous debris and equipment containing or contaminated with dangerous/mixed waste" had been placed inside the tunnels.

The portion of the 20-foot-long portion of a tunnel that collapsed at the 200 East Area in Hanford, Wash. (Hanford Site)

Cleaning up radioactive materials at the Hanford site, which is a federal facility, has been one of the Energy Department's priorities for years. Reactors at Hanford produced plutonium for the U.S. nuclear weapons program. Plutonium production there ended in 1980, and the cleanup program began in 1989.

Former Energy Department official Robert Alvarez said that remotely controlled rail cars once carried spent fuel from a reactor to the PUREX chemical processing facility, which then extracted dangerous plutonium. He said the plant lies near the middle of the sprawling 580-square mile Hanford site and was "a very high-hazard operation."

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Many contaminated pieces of equipment, including the rail cars, have simply been left in the tunnels, he said. The Vanderbilt report said that there were eight rail cars in the older tunnel and 28 in the newer one.

The cave-in was discovered during “routine surveillance,” according to the Energy Department. Photographs showed a gaping hole, plainly evident because the tunnels are largely above ground.

Workers near the PUREX facility were told to shelter in place, and access to the area was restricted, according to the Energy Department statement. Officials requested that the Federal Aviation Administration put a temporary flight restriction in place, according to the FAA.

The two tunnels are covered with about eight feet of soil, according to the Energy Department, which added that “the depth of the subsidence of soil appears to be into the tunnel.”

Alvarez, the former Energy Department official, cited a 1997 report that said the older tunnel was about 360 feet long, 22 feet high and 19 feet wide. Constructed decades ago, the walls of the older tunnel are 14 inches thick and held up by pressure-treated Douglas fir timbers, the report said. They rest on reinforced concrete footings. The newer tunnel was built with reinforced concrete.

In an email, Alvarez added that “the tunnels now store contaminated train cars and a considerable amount of highly radioactive, ignitable wastes including possible organic vapors.” And while the older tunnel is reinforced with timber, Alvarez said, “according to a 1997 DOE report, inspection of the tunnels ‘is not feasible because of radiation levels in excess of five roentgens per hour.’ ” A roentgen, or rad, is a measure of radioactive exposure; five roentgens is the annual limit for a U.S. nuclear worker.

Fixing the damaged tunnel could prove difficult. The Energy Department said on its Web site that officials are looking at options that would provide a barrier between the contaminated equipment in the tunnel and the outside air that would not cause the hole in the tunnel’s roof to widen further.

Although the Trump administration has vowed to slash the budgets of most Energy Department programs, the administration does not plan to skimp on the one charged with the Hanford cleanup and with other nuclear sites. It has requested \$6.5 billion for the agency’s environmental management program for 2018.

The budget for Hanford alone is about \$2.3 billion in the current fiscal year, about \$1.5 billion of that going to the management and treatment of approximately 56 million gallons of radioactive liquid waste stored in underground storage tanks.

Trump has been slow to fill science-related positions, and he has not yet named a new assistant secretary for environmental management; a career department employee is serving in an acting capacity.

During his recent confirmation hearing, Perry was asked by Washington Sen. Maria Cantwell (D) about the Hanford site. “So are you committed to funding Hanford cleanup and what it takes and getting the waste treatment plant finished?” Cantwell asked.

“Senator, I’m committed to working with you and prioritizing what is one of the most dangerous, most polluted sites that we have in this country,” Perry replied. He vowed to visit Hanford and said he looked forward to “walking that site with you.”



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On Tuesday, Cantwell issued a statement praising first responders and saying that she was monitoring reports. She said that “worker safety must be our number one priority, and we need to understand whether there has been any environmental contamination resulting from the subsidence at these tunnels.”

Gov. Jay Inslee (D) said in a statement he was aware that “a tunnel was breached that was used to bury radioactive waste from the production of plutonium at the Hanford Nuclear Reservation.”

“This is a serious situation, and ensuring the safety of the workers and the community is the top priority,” Inslee said

[https://www.washingtonpost.com/news/post-nation/wp/2017/05/09/tunnel-collapses-at-hanford-nuclear-waste-site-in-washington-state-reports-say/?utm\\_term=.9fd88aa57087](https://www.washingtonpost.com/news/post-nation/wp/2017/05/09/tunnel-collapses-at-hanford-nuclear-waste-site-in-washington-state-reports-say/?utm_term=.9fd88aa57087)

[Return to top](#)

National Public Radio (Washington, DC)

### **Close Calls, Hair-Trigger Systems, Faulty Missile Interceptors: Nuclear Security Then & Now**

Author Not Attributed

May 8, 2017

With North Korea flexing its nuclear muscles and the U.S. calling for an end to the "era of strategic patience," it's a good time to re-examine where we are as a world when it comes to nuclear weapons -- and where we've been. Lisbeth Gronlund, co-director of the Global Security Program at the Union of Concerned Scientists, says giving one person the power to launch a nuclear strike has long been a dangerous proposition. She joined The Exchange recently to discuss her ideas for reducing the risk of nuclear conflict.

#### **CONVERSATION HIGHLIGHTS:**

How long has it been the case that only the president makes the decision whether to launch a nuclear strike?

From the very beginning. It came into play when the U.S. built long-range missiles and put them in silos because those missiles were vulnerable to an attack from the Soviet Union. And it takes only about a half an hour for a missile to go from the U.S. to Russia and vice versa. So the U.S. built satellite-based sensors and ground-based sensors with the idea that if there were a Soviet attack, we would know. And then the clock starts ticking.

If it is a real attack, before those incoming missiles land and destroy the U.S. land-based missiles, you have ten minutes. You do not have time to talk about anything. Somebody has to say, Go or No-Go. That whole hair-trigger system is ripe for disaster. There's no need for that. The U.S. has about 1,000 warheads on submarines that are not vulnerable to attack. Russia doesn't know where they are. So, there's no need for having our land-based systems on hair-trigger alert.

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Is your goal to eliminate the hair trigger or to bring more people into the decision-making process?

Both. If you don't eliminate that, it's hard to argue to bring more people into the process. If you do eliminate that hair-trigger system, you could bring in other members of the Cabinet; you could bring in the Secretary of State, maybe somebody from the Senate.

There's a bill by Senator Ed Markey that calls for a Congressional Act of War before the U.S. can launch a first strike. That's different but that would basically require serious deliberation on the part of the U.S.

If the U.S. had been attacked, you would still have time to have deliberation, maybe not time for a Congressional Act of War. But there is still time for a larger group of people to be involved in this decision making. You don't need to do it in ten minutes; you don't need to do it in an hour. It could take days, in part because we have those submarines that are invulnerable, and you don't have to make a rash decision.

If you get a signal of an incoming missile, wouldn't you want to do something?

There's not much you can do about it. You want to be able to respond. But you want to think. Moving quickly is not going to help anything. It's not intercepting the missile. It's counter attack. You're not ruling that out. You're just thinking about it.

Has there ever been a time when that authority was shared? When President Nixon was getting ready to resign, he was said to be quite depressed and drinking heavily. People were worried about his decision-making abilities.

At that point people were worried. And Schlesinger actually told the military, If you get any orders from the president, you come talk to me. Now that was really not the way the system was supposed to work. So, had Nixon actually issued an order, what the military would have done was unclear.

In that suitcase, in that football, there is not a button the president pushes. He still has to tell the Pentagon to do this, so it goes through the military. He doesn't have a direct line to the missiles.

He has the codes but he informs the military that actually makes these devices to hit the go button. So there's some level of multilevel action?

Right. The military is supposed to carry out the orders of the president. Now what Schlesinger was suggesting was, Maybe you don't want to do that if Nixon issues such an order because he's not in a state of mind to be trusted.

How would the U.S. get rid of the hair-trigger system without becoming vulnerable?

The system is set up to receive signals from sensors. Sometimes there are false alarms. There have been several in both the U.S. and the Soviet Union and Russia. In one case, there was a flawed computer chip. In another case, the satellites mistook glint off the clouds to be incoming missiles. In one case, the sensors were all saying the same thing; everything checked out. The next step would be to order a launch and the person in charge in the Soviet Union at that time...he decided -- kind of going on gut instinct -- I don't believe this, I'm not going to follow protocol. He is known as the man who saved the world. He was actually reprimanded because he didn't follow orders.

What's to protect us from some very smart person with ill intent going into a computer and messing around with signals on either side?



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It's possible. Obviously, all that information is classified. This is a new vulnerability. These missiles are linked via cable to the computers, hundreds of miles of cable. You can well imagine someone getting access to that cable.

Do we need to test weapons?

We've never tested for reliability purposes. We used it for new design. You'd want to be sure it went off once. And we tested a lot of weapons effects. We do test our missiles for reliability. We fire a certain number off every year. You don't test the core that blows up. But there are lots of other components of a nuclear weapon that you can test to be sure that the high explosive trigger goes off, that the fusing system works. You don't need to test the part that explodes.

Is the testing itself provocative?

Yes. The U.S. actually signed an international comprehensive test ban treaty that prohibits nuclear testing. The U.S. is a signatory. It has not been ratified but even as a signatory the U.S. is obligated not to test. And the U.S. hasn't tested for more than 20 years.

What capability do we have to intercept or shoot down incoming nuclear missiles?

The U.S. has about 30 interceptors based in Alaska and a couple in California. The goal would be to shoot down a missile from North Korea. That system does need testing. And it has undergone some testing. And it has a very poor record. For political reasons, the U.S. decided that it would rather spend its money building interceptors than testing them. Because when you test an interceptor, it's gone, basically; you use it up. And there has been a political imperative, in some part driven by Congress, that we want to be able to tell the American public that we can defend it. But the reality is not as comforting.

These tests of this missile defense system have been very poor and very scripted, so they might not reflect what an actual attack would look like. The military concedes that the key part of the interceptor, called the key vehicle – the top that actually maneuvers to ram into the incoming warhead and destroy it -- is flawed and they will be building new ones. But in the meanwhile they're continuing to deploy the ones that they know to be flawed.

Would better technology or more smart people working on this help?

I am skeptical....We are not going about it in the right way.

The Pentagon has a rule called "fly before you buy." They were finding they were deploying systems that didn't actually work in the field because they hadn't done enough testing. So, in its wisdom, they exempted missile defense from this requirement. If you were serious about developing something that would work you would want to fly before you buy. You would want to test it thoroughly. That's not what we're doing. People felt it was more important to put something out there than to make sure it worked.

I would like to see them fly it, honestly. I think it would reveal the flaws in the system and would be a reason not to build it. But we can give it a try at some level. We have not given it an honest try. Part of the reason is that the last thing the Pentagon wants is test failures because the world will know. You can't hide these tests so there's a trade -off between having something to point to and say we're defended and actually building something that might work.

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Would it deter North Korea?

If they were willing to fire a nuclear weapon at the U.S. knowing that the U.S. can retaliate with its enormous conventional force – the U.S. doesn't need nuclear weapons to retaliate against North Korea -- If they were willing to do that, I cannot imagine that the existence of a missile-defense system would matter one iota.

On the other hand, there are some negative consequences of thinking that this might work. China has a pretty small arsenal, about 100 weapons that can reach the U.S. Its concern is that the U.S. would launch a first strike against China, take out a lot of those missiles, leaving China with a small number that the U.S. would use its missile defense system to defend against. They see this as provocative.

Treaties

Under the nuclear nonproliferation treaty, the U.S. is legally committed to disarmament. They have not been making much progress. And the rest of the world is fed up.

The deal that was cut: Five countries -- Russia, U.S., China, Britain, and France -- said okay we have nuclear weapons now, but we promise to get rid of them. And in exchange for that all of the other countries said okay, fine, we won't get them.

Meanwhile, Israel, Pakistan, and India are working outside the bounds of the treaty.

What the rest of the world could say is that the U.S. and Russia, as the owners of 95 percent of the world's nuclear weapons, need to lead the way.

At the height of the Cold War, both the U.S. and the Soviet Union had tens of thousands of nuclear weapons. Now we have about 5,000.

There is a treaty banning biological weapons, chemical weapons, but not banning nuclear weapons.

People in favor of nuclear deterrence should be fine with far lower numbers and a less provocative military posture; not only do we have the ability and stated intent to respond if there was a nuclear attack, but we also have a policy that we could use nuclear weapons first, not in response to a nuclear attack but perhaps in response to a conventional attack or an attack with chemical weapons. That's a policy that has nothing to do with mutually assured destruction and basically increased the chance that there would be nuclear use.

How hopeful are you that the U.S. can work with China to reduce the threat of North Korea.

I actually think the next step in addressing North Korea is not for China to take, although they have strengthened their sanctions against North Korea again. It is for the U.S. to take. The U.S. and North Korea need to talk. There are no good military options to deal with North Korea. It's the only good option we have. It might not work. But we won't know until we try.

What do we know about terrorist groups' abilities or desires to get their hands on nuclear weapons?

I think it's fair to say that they would like to get a nuclear weapon. The good news is it's pretty hard. There are only two materials that are usable for nuclear weapons that are generally available, which is highly enriched uranium and plutonium.

The U.S. and Russia have large stockpiles of these weapons from their weapons programs; they have dismantled weapons and there are excess materials. They are fairly well guarded.





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The other issue is that some kinds of nuclear power, fuel cycles, incorporate plutonium -- so that is a concern. There are very few countries that do this but it's one thing that we at the Union of Concerned Scientists are trying to stop for that very reason that it poses a possibility that terrorists working with insiders could get enough material to build a nuclear weapon. You don't need a lot of it. But it's definitely feasible to steal that amount from one of these large-scale facilities. So once you have the material, then you also have to build it. You need some expertise, and depending on which of those two materials you have -- the uranium is much easier to build a weapon with than plutonium.

What is a dirty bomb?

It's not a nuclear weapon. It's where you have radioactive material. You might get it from a hospital; you might get it from leftover contaminated material from nuclear power.. and then you would spew radiation. It's a very local effect, unlike a nuclear weapon, which is much greater effect. It would not be a good thing. It's far easier to do but it would not have nearly the devastation.

What's the connection between nuclear power and nuclear weapons?

There are two kinds of materials for making weapon: One is plutonium. Nuclear reactors were developed to produce plutonium for weapons. If you have uranium fuel, it produces plutonium -- then you have to take that fuel out of the reactor and separate the plutonium. The spent fuel is very radioactive so you have to use special methods to extract plutonium but almost all reactors in the world produce plutonium in their spent fuel. ... Most reactors are fueled with uranium. The uranium you dig out of the ground has very low levels of Uranium 235, which is the isotope that is useful in both nuclear power and nuclear weapons. So you have to enrich it. And that is what Iran was doing. It was enriching and condensing the uranium. For a nuclear reactor you might want to do it to 5 %. If you go over 20% you could use it to make a weapon. And weapons-grade uranium is more like 95%.

<http://nhpr.org/post/close-calls-hair-trigger-systems-faulty-missile-interceptors-nuclear-security-then-now#stream/0>

[Return to top](#)

The University of Manchester (Manchester, UK)

### **Graphene membranes can make nuclear industry greener**

Author Not Attributed

May 9, 2017

Graphene could help reduce the energy cost of producing heavy water and decontamination in nuclear power plants by over one hundred times compared with current technologies, University of Manchester research indicates.

The new development could lead to the reduction of CO2 emissions associated with heavy water production by up to a million tonnes each year.

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Writing in Nature Communications, a team from the University of Manchester led by Dr. Marcelo Lozada-Hidalgo demonstrated fully scalable prototypes of graphene membranes capable of producing heavy water.

The research shows that graphene-based membranes could make the production of heavy water more efficient, leading to greener and cheaper nuclear power.

Producing heavy water which needed by the nuclear industry to generate clean-energy is an expensive process. Because of graphene's unique material properties it has the potential to effectively separate sub-atomic particles making this process more efficient and cost-effective.

Separating hydrogen isotopes is a huge task for nuclear fission and future fusion plants. Thousands of tons of isotopic mixtures are processed every year. Yet, producing just 1 kg of heavy water consumes enough energy to power an average American household for an entire year.

Dr. Lozada-Hidalgo, University of Manchester research fellow said: "This is a crucial milestone in the path to taking this revolutionary technology to industrial application.

"The potential gains are high enough to justify its introduction even in the highly conservative nuclear industry."

Only last year, the same group of researchers found that graphene can efficiently sieve hydrogen isotopes. But the industrial opportunities of this discovery were not analysed because there were no membranes or fabrication methods suitable for scalable manufacturing at the time.

Now, the Manchester group developed fully scalable prototype membranes and demonstrated the isotope separation in pilot scale studies. They found that the high efficiency of the separation would allow for a significant reduction of the input amount of raw isotope mixtures that needs to be processed. This reduces both the capital costs and the energy requirements.

They estimated over one hundred times less energy to produce heavy water would be required compared to competing technologies – even larger energy savings are anticipated for tritium decontamination.

Sir Andre Geim, added: "Tritium discharged both from nuclear power plants and as a result of environmental disasters is a major global concern.

"We believe this technology can economically transform the environmental footprint of future nuclear plants."

<http://www.manchester.ac.uk/discover/news/graphene-membranes-can-make-nuclear-industry-greener/>

[Return to top](#)



## ***USAF Center for Unconventional Weapons Studies (CUWS) Outreach Journal***

Carlsbad Current-Argus (Carlsbad, NM)

### **Secretary of Energy delivers optimistic message at WIPP**

By Maddy Hayden

May 11, 2017

Newly appointed Secretary of Energy Rick Perry had nothing but words of encouragement and optimism for the workforce at the Waste Isolation Pilot Plant on Thursday.

Perry toured the facility with Carlsbad Field Office officials Thursday morning and addressed a large crowd of WIPP employees and local officials afterward.

"I will suggest to you and anyone who listens that what happens at WIPP, the job that you all are involved with, may be one of the most important in the country from the standpoint of keeping this country safe and giving this country great comfort that our government is involved in activities that will economically move America forward," Perry said.

Perry finished up a week-long tour of Department of Energy sites on Thursday; he visited Idaho National Laboratory and Los Alamos National Laboratory earlier in the week.

He is the second Secretary of Energy to visit the site this year; former Secretary Ernest Moniz toured the site in January to celebrate its reopening.

Perry said he envisions a renaissance in the country's nuclear energy industry and acknowledged that WIPP will be an integral part of it.

"I would suggest that nuclear energy is going to be a very, very important part of making sure that we have a reasonable, safe, abundant and secure supply of energy going into the future that's as clean as it can be," Perry said to applause. "But if you don't have a place to go with the byproduct, that's going to stop all of those things."

Perry also stressed that President Donald Trump is committed to the Department of Energy's mission.

Trump has called for the modernization of the country's nuclear arsenal.

"He understands that if we're going to do that, an operational and appropriately funded and supported WIPP is going to be a very, very important part of that," he said.

Nuclear Waste Partnership president and project manager Phil Breidenbach and Carlsbad Field Office manager Todd Shrader accompanied Perry on the two-hour tour of the underground nuclear repository.

"We talked about moving WIPP forward," Shrader said. "It's time to recapitalize some of our infrastructure and invest in the future of the facility."

In an interview after his remarks, Perry said he is convinced that WIPP is a safe solution for at least some of the nation's nuclear waste.

"It is the type of facility that we're going to have to see functioning and, I will suggest to you, expanding in the future so we can have a functioning nuclear energy industry."

Carlsbad Mayor Dale Janway welcomed Perry to the site and encouraged him to revise the way high-level and transuranic (low-level) nuclear waste are defined.

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If re-characterized as transuranic waste, it will then be acceptable for emplacement at WIPP.

"We encourage you to examine this outdated classification system and fix it," Janway said.

When Perry was nominated for the post by Trump, many believed he lacked the necessary experience.

While he admitted he was amazed by the diversity of the department's mission, his experience leading Texas has played a valuable role in his new position.

"The preparation of managing the 12th largest economy in the world for 14 years was very good preparation for coming and managing this extraordinarily important agency for the United States," he said.

<http://www.currentargus.com/story/news/special-reports/wipp/2017/05/11/secretary-energy-delivers-optimistic-message-wipp/101565926/>

[Return to top](#)

East Oregonian (Hermiston, Oregon)

### **Soldiers, scientists take part in training exercises at Umatilla Army Depot**

By Jayati Ramakrishnan

May 10, 2017

Hundreds of military personnel from the U.S. and Germany descended on the Umatilla Army Depot this weekend, searching through the abandoned bunkers for decoy munitions and nuclear weapons.

The exercise, called "Dragon Fire," involves troops from several CBRNE (Chemical, Biological, Radiological, Nuclear and Explosives) battalions, all of whom are learning how to decontaminate an area that may be threatened by weapons of mass destruction.

"If called upon, we have to be able to identify and understand a nation's WMD infrastructure, disable it and render it inoperable to some extent, to prevent proliferation," said Col. Christopher Cox, commander of the 48th Chemical Brigade. "Umatilla is on a former chemical weapons site. Should we need to go somewhere, that provides us the maximum realism. You can't replicate that anywhere in the U.S."

In addition to troops from around the U.S., about 20 personnel from a German platoon that specializes in decontamination was also at Camp Umatilla, where the two countries were learning a bit more about each other's operations.

"This hasn't been done before, bringing German troops to the U.S. in a CBRNE environment," said Maj. Ryan Donald of the 20th CBRNE command based in Aberdeen, Maryland. "So far it's been phenomenal. If we can, we'd love to try and continue this."

The exercise took about 15 months to plan and involved more than a thousand people. About 350 troops started the 10-day exercise in Yakima, then they deployed to Satsop in western Washington, the site of a never-completed nuclear power plant. There, the troops were provided scenarios that mimicked potential chemical or nuclear targets they might encounter. Troops had to collect information at the site, some of which sent them to the Umatilla Army Depot.



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“Obviously, there’s no production. Most pieces of equipment are obsolete,” said Tom Woloszyn. “But for the purpose of the exercise, to represent a country with emerging technology that might want to develop WMDs — we have to replicate how something might be set up.”

Woloszyn, the Umatilla base commander from 1999 to 2001, was on site during the training. Woloszyn now works directly with NATO facilitating programs between countries in the alliance.

In the early 2000s, Woloszyn was deployed to Iraq as part of the search for weapons of mass destruction.

“The trainings here are to prepare for such operations,” said Woloszyn.

Woloszyn said one of the most important things about exercises like this one is getting troops from different NATO countries familiar with each others’ processes.

“Everybody’s army has been reducing, so we have to work together,” he said. “We have to be each other’s formations. People think NATO is senior leaders, but it’s the people on the ground here.”

In several of the bunkers at Umatilla that used to store chemical weapons, decoy targets were set up. Troops had to navigate their way through, analyzing what they saw and determining whether they needed to come back, or send the information to higher authorities.

### **Scientists in the Foxhole**

As the troops worked, about 20 scientists followed and observed.

“We bring scientists from national laboratories out to training events,” said Maj. Donald. “They see what types of stuff we work on, and modify it for real world usage.”

The program, called “Scientists in the Foxhole,” allows scientists who develop products or medicines used on the battlefield to refine their own skills and knowledge.

“Most people in labs have never been in the military and have never seen what our mission is,” said Lt. Col. Mary Miller, who has run the Scientists in the Foxhole program for the last few years. “How do you develop technology for a mission you’ve never seen? We’ll get weird technology where you can understand why they thought it would work, but in application it doesn’t make sense.”

Lt. Col. Miller herself is a scientist, with a Ph.D. in microbiology and immunology. Her doctoral studies focused on the Ebola virus. Before she took on a more technical role in the Army she was a Medivac pilot.

But many military scientists don’t have the same opportunity to see what’s going on in the field.

“We try to bridge that gap,” she said. “The whole point is that when scientists get back to the lab, they can share what they’ve learned with their peers.”

Doug Carasoli was one of the scientists in the program. He works with the Institute of Chemical Defense at the Aberdeen Proving Ground in Maryland.

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“Our institute makes medical counter-measures,” he said. “If a (chemical) agent gets through to you and you get sick, that’s what we do.”

While his group only makes medical products that apply “skin and in,” some others in the group of scientists make suits, protective outerwear and other gear.

“The point for us is to come out and get a practical vision of all the other parts,” he said. “It gives us perspective of what the people in the green suits actually do.”

In the bunkers

Over the course of the training, troops had to analyze several different scenarios. In one bunker, rows of munitions were set up on the ground, one of which was leaking. In another bunker there were booby traps on the ground around the area with potential targets.

“They get thrown lots of curve balls,” Miller said. “Something could tell them it’s mustard gas, but it’s something else. They have a lot to think about, a lot of information to gather.”

At another bunker a few minutes away, troops in masks analyzed another scenario, in which people were using spent fuel from a reactor to extract plutonium, which could be used to make a nuclear weapon.

“They’ve been in once, assessed for chemical and radiological hazards,” said Maj. Aaron Ferguson. “Now, they’re removing some computers and documents that might provide some intelligence.”

Matt Kalfoglou from the CBRNE Analytical Remediation Activity team was also on hand to explain what happens on a real chemical investigation.

“(It’s) a mobile lab. We go out and do analysis,” he said. “We help with training and setting up targets so they have more real-world experience.”

He walked through a room that was set up with a series of steps in a hypothetical chemical weapon-building process. From the control room and preparation area to a room where the weapon would actually be constructed, he explained the potential steps and conclusions that could be drawn from each area.

“A lot of information you’ll be getting will be secondhand,” he said. “You have to work with what you’ve got.”

Kalfoglou said his team has been deployed to the Middle East in the last couple of years, and work hand in hand with a forensics unit.

“We focus mainly on explosives,” he said. “We’ve seen a couple of live samples. There’s some frightening stuff.”

Interoperability

Troops from various U.S. Army facilities, including Fort Bliss in Texas and Aberdeen Proving Grounds in Maryland, as well as about 20 German troops from the country’s decontamination platoon. They had several pieces of equipment they used to demonstrate safety precautions that troops should take after being near chemical agents.

Along with some basic areas set up to clean boots and store contaminated masks, the German troops had a large metal module, “Module 2,” which was designed for decontamination in the field.

Each side of the module has a purpose. On one side, troops can put contaminated clothing into a chamber and close the door. The module steams them, and deposits them out the

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other side. Another side of the module has a vacuum compartment to clean electronic devices, and another has a grate where weapons can be cleaned.

Unlike the U.S. Army, many of Germany's troops are also trained scientists, said German Lt. Col. Dirk Veeck.

"We try to train them as soldiers and scientists," Lt. Col. Veeck said. "We like to have that expertise with us on our missions."

Overall, Lt. Col. Veeck said, their goal is to be able to operate seamlessly with other NATO forces.

"We build up a training relationship with the U.S.," he said.

Maj. Donald said training and cooperating with other nations' armies has become crucial.

"If you've seen anything since Kosovo in the 1990s — we just don't fight wars alone anymore. If we need to decontaminate, we're going to call the Germans. That's how good they are."

With discussions about nuclear and chemical warfare frequently in national news, Maj. Donald said these types of preparation will likely increase.

"The threat of CBRN (chemical, biological, radiological and nuclear weapons) and EOD (explosive ordnance disposal) is increasing," he said. "There is a lot more attention to it. We probably will see more trainings."

<http://www.eastoregonian.com/eo/local-news/20170510/soldiers-scientists-take-part-in-training-exercises-at-umatilla-army-depot>

[Return to top](#)

Washington Free Beacon (Washington, DC)

### **GOP Senator to Introduce Bill Strengthening U.S. Missile Defense Amid North Korean Threat**

By Natalie Johnson

May 10, 2017

*Legislation would nearly double number of interceptors in Alaska, California*

Sen. Dan Sullivan (R., Alaska) will introduce legislation as early as next week to authorize the deployment of dozens of additional ballistic missile interceptors in the U.S. Pacific as part of an effort to confront an increasingly aggressive North Korea.

Sullivan, a member of the Armed Services Committee, told the Washington Free Beacon on Tuesday the bill would fortify U.S. missile defense by accelerating the testing and development of new missile interceptors and approving the procurement of 28 new ground-based missile interceptors in Alaska and California, nearly doubling the current number.

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"It's become very clear that it's not a matter of 'if' anymore, but 'when' North Korea is going to have the capability to reach not just Alaska and Hawaii, but the lower 48 states with a nuclear capable ICBM [intercontinental ballistic missile]," Sullivan said in an interview.

The legislation also includes a measure that authorizes the Missile Defense Agency to begin building an integrated layer of space-based missile sensors.

Senior Pentagon officials called on Congress earlier this year to allocate funding for space-based missile tracking capabilities given developments in ICBMs that have created fissures in terrestrial missile defense. Sullivan said the new technology would integrate all components of U.S. missile defense to create an "unblinking eye" that could defend against a large-scale attack.

The bill arrives just weeks after U.S. Strategic Command initiated its missile defense posture review ordered by President Donald Trump in January. The review is the first of its kind since 2010.

The Union of Concerned Scientists, a science advocacy group, warned last year that the nation's missile defense system has no "real-world capability" to protect the U.S. against attack. The group reported that the ground-based missile defense system had only been tested nine times over a 12-year period and failed to destroy its target two-thirds of the time, according to Reuters.

The Pentagon deployed six additional interceptors to Alaska and California this year, bringing the total number to 36, and is expected to expand the program to include 44 interceptors by the end of 2017.

Sullivan said more is needed as North Korea continues to launch ballistic missile tests.

Defense officials have warned that North Korea is on the brink of producing an ICBM that could target the homeland. North Korean leader Kim Jong Un announced in January during his New Year's address that Pyongyang had "entered the final stage of preparations to test-launch" an ICBM that could reach parts of United States.

"If we know that train is approaching, we need to start working on this right now so that when the day comes and the headlines are screaming 'This unstable dictator has the ability to take out Chicago!' we can say we saw this coming and we have the capability to shoot these missiles down and retaliate on a massive scale," Sullivan said.

Sullivan said he expects the bill will receive bipartisan support and is currently pursuing Democratic co-sponsors.

<http://freebeacon.com/national-security/gop-senator-introduce-bill-strengthening-u-s-missile-defense-amid-north-korean-threat/>

[Return to top](#)

The Independent (London, UK)

## **Death from above: how David Maisel turned 'the new Area 51' into land art**

By Glen Helfand

May 5, 2017

*Dugway Proving Ground has been a testing ground for US military since the second world war, and now the mysterious site has been turned into visual art*

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While militarized landscapes may not have shifted in their general character – the Nevada Test Site, where nuclear devices have been tested since 1950, now hold monthly tours for morbid adventurers – there is a clear and present sense that global warming applies geopolitically as well as ecologically. Photographer David Maisel’s current and eerily timely body of work, titled *Proving Ground*, depicts, from the air, parts of an 800,000-acre chemical weapons testing facility in Utah’s Great Salt Lake Desert.

The Dugway Proving Ground is a classified military site, established during the second world war, which conspiracy theorists have dubbed the ‘New Area 51’ because of secrecy surrounding the site. Its primary mission was to provide development and production testing of chemical and biological weaponry and defense programs. From the sky, it appears like a massive series of geometric drawings etched into flatlands. Concentric circle targets have been mapped out to measure the distances that clouds of deadly gases will travel, and the toxicity levels of said weaponry, information that can be utilized in defensive or offensive strategies. The black and white pictures, printed on aluminum and arranged in grids, have an eerie calm, but the material strikes a more urgent, ominous tone in light of the recent horrific chemical attack in Northern Syria: Dugway has been exposed to those same toxic gases.

Working in a studio space in idyllic Sausalito, not far from now historic military outposts on the bluffs of the west coast, Maisel is readying his new pieces for upcoming exhibitions and a book, published by Steidl, both to appear this fall. It’s not the first time Maisel has focused on landscapes that bear morally and ecologically thorny human interventions. He’s done work on a US ammunitions storage facility, a Spanish borax mine, and various environmental catastrophes. His work explores destruction, reveals powerful visual aesthetic in such locations.

“Throughout multiple projects in this vein, I’ve felt that these sites reflect us, reflect back the psyche of the society that made them, and that they reveal, perhaps, something at the core of who we are,” he says.

The narrative of their making is long and labyrinthine, and speaks to ways in which art can address the contemporary condition. In 2003, he did an aerial series of photographs on a munitions storage facility, housing nearly 30 million pounds of aging mustard gas and nerve agents, just 25 miles from Salt Lake City. “It’s stored in 900 small ‘igloos’ at the facility, awaiting disposal, spread across the desert floor in a grid. From the air, they resembled a Donald Judd installation or perhaps a prototype of some kind of suburban housing. But the notion of chemical weapons and nerve agents sitting in the landscape set off alarm bells for me. Why were they here? Where were they from?”

The answer was Dugway. Maisel began seeking access to this highly regulated facility. “A friend of mine who does contract work with the Pentagon volunteered to make some inquiries on my behalf. The initial response from the Pentagon in 2004, under the administration of George W Bush, was ‘not now.’ And, in a way, this was encouraging. ‘Not now’ didn’t mean ‘never.’ It left the door open,” he says.

After a decade of patience and negotiations with officials in the US Department of Defense, Maisel was granted permission to photograph from the air, and on the ground. “Naturally, every aspect was vetted in advance, and either approved or denied. My pilot and my assistant needed to be vetted as well. When I flew over the facility to photograph enormous

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grids etched into the desert floor where weapons testing occurred, I had a representative of Dugway in the Cessna with me, to insure that I didn't vary from our permitted course. Every element of my time on site was highly controlled and choreographed."

In May 2016 details of the experiments which took place at the 800,000-acre facility were first made public. Mostly it served as a testing site for conventional weaponry – cluster bombs etc – but alongside that work was more experimental work, such as one study titled Operation Bellwether that looked into weaponizing mosquitos.

"I felt a kind of deep, implicit, if unspoken acknowledgment that this was an extremely charged environment, where there's a kind of darkness and danger to the research that happens there. However, simultaneously, I found was that the people working at Dugway were both dedicated to their work and respectful of mine."

Maisel's attraction to the site poses potent questions. Why does a place like Dugway continue to exist today? Perhaps it is necessitated by the world we live in, and by the existence of virulent toxins like anthrax and sarin gas, which can be weaponized by governments and terrorists alike. In February of this year, Kim Jong-nam, the brother of North Korean leader Kim Jong-un, was killed with VX nerve agent.

"I've been looking at sites of traumatic disturbance, primarily in the American landscape, for more than 30 years. Much of this work focuses on themes of development and destruction of the environment, examining sites of natural resource extraction and its unintended consequences or side effects. But, throughout multiple projects in this vein, I've felt that these sites reflect us, reflect back the psyche of the society that made them, and that they reveal, perhaps, something at the core of who we are."

The complexity of the site resulted in Maisel's first work in video, an amalgamation of 50,000 frames of still aerial photographs of the test grids that flash rhythmically to communicate a sense of enormity, impending doom, and existential foreboding. Titled *Kydoimos*, which translates roughly as *The Din of Battle*, the video includes a moody score by experimental musician Chris Kallmyer. "The entire piece is thrumming, insistent, and ominous. But I think there is also an element of elegy and loss conveyed as well," Maisel says.

The printed works, which are arranged in grids, and the video are ripe with a sense that that resolution is elusive and there is frightening power to the constant state of suspense. "There is certainly a kind of visceral attraction/repulsion going on with this environment," he says. "The proving ground is a disturbing place. The need for such a place is itself disturbing. We are looking at a remote setting that exists in order to test the most potent, destructive biological and chemical nerve agents known. One can't help but feel the heart of darkness at the core of its mission."

<https://www.theguardian.com/artanddesign/2017/may/05/david-maisel-photography>

[Return to top](#)

Sputnik (Moscow, Russia)

**US Approves \$75 Million Sale of CBRN Protective Gear to India By Glen Helfand**

Author Not Attributed

May 12, 2017

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*The United States will sell \$75 million worth of chemical, biological, radiological, and nuclear (CBRN) protective clothing and support equipment to India, the State Department announced on Thursday.*

The US Department of State approved the sale of chemical, biological, radiological, and nuclear (CBRN) protective clothing and support equipment to the Government of India for \$75 million, the Defense Security Cooperation Agency (DSCA) said in a press release.

"The Government of India (GoI) has requested a possible sale of 38,034 M50 general purpose masks [and] Joint Service Lightweight Integrated Suit Technology (JSLIST)," the release explained.

The order also includes nuclear, biological and chemical bags, aprons, trousers, gloves, boots, among other supplies, the release noted. The potential sale also includes training and logistics support, the release stated.

"This proposed sale will contribute to the foreign policy and national security of the United States, by helping to improve the security of a friendly country which has been, and continues to be, an important force for political stability and economic progress in South Asia," the release added.

The prime contractor on the program is Avon Protection Systems located in the US state of Michigan, the release noted.

<https://sputniknews.com/military/201705121053531851-us-india-cbrn-gear/>

[Return to top](#)

MIT News (Boston, MA)

### **Prospects for nuclear disarmament in uncertain times**

By Jonathan Mingle

May 9, 2017

*In conference on nuclear threat, former Energy Secretary Moniz and Rep. Lee call for diplomacy to defuse rising risks.*

From rising tensions on the Korean Peninsula to questions about the future of the Iran nuclear agreement, the specter of nuclear conflict has returned as a concern for policymakers and citizens alike.

Two leading voices on nuclear issues, U.S. Rep. Barbara Lee and former Secretary of Energy Ernest Moniz, discussed the prospects for disarmament during a day-long conference on "Reducing the Threat of Nuclear War" held on MIT's campus on May 6.

"Frankly, the possibility of a nuclear bomb going off is higher today than 20 years ago," said Moniz, "in terms of the various regional conflicts we are facing."

Lee, a Democrat representing California's 13th District and a prominent advocate in Congress for nuclear disarmament efforts, recently returned from a trip to South Korea and

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Japan, where she met with security officials and visited the demilitarized zone (DMZ) between North and South Korea.

“I saw how volatile the region is,” she said.

Lee is a co-sponsor of H.R. 669, a bill that would prevent the U.S. president from launching a first-use nuclear strike without authorization under a declaration of war by Congress.

“We must continue to put pressure on this president to give Congress a comprehensive strategy for deterring North Korea, that puts diplomacy and nonmilitary strategies at the forefront,” she said.

“It is incumbent on us to show this administration the value of diplomacy,” Lee said, calling on attendees to pressure their elected representatives to oppose the Trump administration’s proposed sharp increases in defense spending and planned expansion of the U.S. nuclear arsenal. “His budget puts forth a \$1.4 billion increase for the National Nuclear Security Administration (NNSA) to build more bombs, yet it doesn’t make our planet any safer, nor does it advance NNSA’s goal of nuclear nonproliferation,” she said.

“After nearly a decade of persistence, the Obama administration, together with our allies, were able to negotiate a deal that put a lid on Iran’s nuclear program and created the most extensive and intrusive nuclear verification regime ever negotiated,” she said.

Moniz described the key features of that agreement, reached in 2015 among Iran, the U.S., and five other world powers, and shared his perspective on its prospects for survival under the Trump administration.

“This was an important example of diplomacy reaching critical security goals without a shot being fired,” he said.

He reminded the audience of the long and difficult history of relations between the U.S. and Iran, stretching back to the U.S. role in a coup in 1953 and the hostage crisis of 1979. “The grounds of distrust are very, very deep,” Moniz observed. “This makes it even more remarkable this agreement could be accomplished.”

Moniz outlined how the agreement has successfully halted the Iranian weapons development program, which had been “expanding very dramatically, with 20,000 centrifuges and [was] close to [finishing a reactor that would produce] one or two bombs’ worth of plutonium per year.”

Moniz also pointed to “extraordinary transparency and verification measures,” which give inspectors from the International Atomic Energy Agency (IAEA) access to suspicious sites.

“No other country has a fixed time in which to respond to inspector requests,” he said. Iran, however, must respond within weeks to IAEA requests. “This is completely novel.”

Commenting on Republican criticism of the deal, he noted that quarterly reports to Congress have confirmed that Iran is complying with its requirements.

“If the U.S. walks away from the agreement,” he said, “we get the worst of both worlds. Then Iran has no formal constraints. And some may say, ‘We’ll put sanctions back on them.’ It won’t work. It worked before because we had the entire international community on the same page enforcing those sanctions.”

He expressed doubt that other countries would support reimposing and enforcing sanctions on Iran. “There is no reason to think that if we walk away, we don’t walk away alone. And the sanctions will not be effective.”

**Issue No.1263, 12 May 2017**

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Moniz said he is “reasonably optimistic” that all parties to the Iran agreement will continue their compliance — including the U.S. He cited the support of Senator Bob Corker, the Republican chair of the Foreign Relations Committee, who recently called for the agreement’s continued enforcement.

“I can’t say that there’s no doubt that this deal will stick going forward, but I can say the logic is completely clear and compelling,” Moniz concluded. “And most people, including those who didn’t agree with the deal, have come to that [conclusion].”

If there is continued compliance with the agreement, Moniz said, the international community should go even further, to improve transparency in nuclear programs beyond Iran. “We have got to think hard about what do we want to see in Iran and elsewhere in the region and beyond, in terms of nuclear fuel cycles.”

In addition to returning to his role as a physics professor at MIT, Moniz was recently named the CEO of the Nuclear Threat Initiative (NTI), a nonpartisan organization founded by former Senator Sam Nunn and Ted Turner in 2001, dedicated to reducing the threat of attacks with weapons of mass destruction and disruption.

In that capacity, he said, he hopes to engage with members of both parties to work toward nuclear nonproliferation and increased support for the IAEA’s work.

Lee and Moniz were introduced by John Tierney, former U.S. representative from Massachusetts and executive director of Council for a Livable World, which promotes policies to reduce and eliminate nuclear weapons.

During a question and answer session, Lee and Moniz addressed a range of other issues as well, including the risks of a cyber attack interfering with the U.S. nuclear command and control systems, and Lee’s ongoing efforts to repeal the 2001 Authorization for Use of Military Force (AUMF) resolution passed by Congress.

The conference was jointly sponsored by MIT Radius, American Friends Service Committee, the Future of Life Institute and Massachusetts Peace Action, whose nuclear abolition working group is chaired by MIT professor of biology Jonathan King.

<http://news.mit.edu/2017/moniz-lee-prospects-nuclear-disarmament-0509>

[Return to top](#)

Russia Matters (Cambridge, MA)

### **A Strategy for (Modestly Increasing the Chance of) Saving the INF Treaty**

By James Acton

May 11, 2017

The Intermediate-Range Nuclear Forces (INF) Treaty is, most likely, a dead pact walking. Not only are the prospects of Russia returning to compliance with the treaty extremely bleak, but even serious discussions between Washington and Moscow about the treaty’s implementation seem like a diplomatic bridge too far right now. Without a process that

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offers at least some hope of a solution, the treaty's survival is likely to be threatened—probably sooner rather than later—by either abrogation or irrelevance.

From a U.S. perspective, this outcome would be deeply undesirable. Although the United States signed the INF Treaty almost 30 years ago in a quite different geopolitical context with a state (the Soviet Union) that no longer exists, the agreement still serves the security interests of the United States and its allies. It prohibits the development, testing or possession of ground-launched cruise and ballistic missiles with ranges of between 500km and 5,500km, whether they are armed with nuclear or nonnuclear warheads. Such weapons—including the ground-launched cruise missile that Washington has accused Russia of developing and deploying—would pose a genuine military threat to U.S. allies in both Europe and East Asia.

This threat would probably be most serious in Europe, where the United States' strategy to defend NATO's eastern flank in the event of a war with Russia relies on rapidly reinforcing the relatively modest number of alliance troops that are stationed there. By using banned missiles—most likely armed with conventional warheads—to threaten key transport nodes and pre-positioned equipment, Russia could severely undermine this strategy's viability. It is, therefore, very much in the U.S. national interest to make a concerted (if last minute) effort to preserve the treaty—by inducing Russia to come back into compliance—even if the odds of success are poor.

Recent discussions about how to achieve this aim have, to a large extent, turned into a debate about which weapons the United States should deploy in response to Russia's violation. Such deployments may well be necessary, but they are unlikely to be sufficient to induce Russia to return to compliance by themselves.

What is needed now is a strategy—comprising diplomatic, economic and military components—to create three realities that Moscow cannot ignore. First, the costs associated with continued noncompliance will outweigh any benefits. Second, these costs will be removed if Russia comes back into compliance. Third, any solution will allow Moscow to save face.

The United States has multiple options to change Moscow's cost-benefit calculation about the consequences of violating the treaty. The deployment of both offensive and defensive weapons is one approach. For starters, the United States and NATO should make a major investment in cruise missile defense. Defending large areas against cruise missiles is next to impossible. However, to help deny Russia the benefits of deploying a prohibited cruise missile, the United States and NATO need only make discrete targets—such as key transport nodes—significantly less vulnerable. This more modest goal could be accomplished—relatively quickly, affordably and without controversy—with the deployment of the existing Patriot Advanced Capability.

The United States could also impose costs on Russia by deploying offensive weapons, including heavy bombers and JASSM-ER cruise missiles. Doing so would be more controversial and increase tensions with Russia, but these risks would be worth running precisely because such deployments would create a genuine military problem for Russia, and hence an incentive to rethink the INF Treaty's value.

At the same time, economic and diplomatic approaches to imposing costs should not be ignored. Moscow has apparently developed a short-range export version of its prohibited cruise missile. The United States and its allies could launch a major diplomatic initiative to dissuade potential buyers from purchasing this missile, as a way of cutting off a source of



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income for Russia (much as the United States led a global effort to restrict sales of Iranian oil as a way of forcing Tehran to negotiate limits on its nuclear program). While the loss of revenue to Russia might be relatively modest compared to the totality of its arms exports, Moscow might worry that, if it did not return to compliance with the INF Treaty, the United States would attempt to block more sales.

Such efforts would be aided by the United States releasing more information about the Russian violation. Some senior officials within the administration of President Barack Obama wanted to do just that, but were stymied by concerns from the intelligence community about compromising the sources and methods used to collect intelligence. While such concerns are understandable and demand selectivity in any information release, it is high time for the United States to substantiate its claim of Russian noncompliance publicly.

By itself, cost imposition is unlikely to be effective, however. Moscow must also believe that if it does return to compliance, the pain will be alleviated. After all, if Moscow judged that, say, U.S. military deployments nominally intended to counter Russia's INF violation would not be rolled back under any circumstance, it would have little incentive to return to compliance.

There is no easy solution to this problem, but the United States and NATO can take steps to mitigate it. They should identify, publicly and precisely, which future force deployments are connected to Russia's INF violation and which are not. They should, publicly and repeatedly, commit to reversing the former if Russia comes back into compliance with the treaty. Such assurances would probably be somewhat more effective if they were conveyed personally to Russian President Vladimir Putin by the leaders of the European states on which the deployments occurred. The development or deployment by the United States of weapons prohibited by the treaty would undermine such efforts and should be avoided.

Finally, Washington should present Moscow with a solution that allows Russia to save face. In this regard, it may be paradoxically helpful that Russia has leveled its own charges of noncompliance with the INF Treaty against the United States.

Although two of these charges have no merit, a third claim cannot be easily dismissed. Under the so-called European Phased Adaptive Approach, the United States is deploying ground-based Standard Missile-3 interceptors in Romania and Poland for missile defense. The launchers for these systems are modified versions of the Mk-41 Vertical Launch System, which is also used for launching cruise missiles from ships. Moscow argues that, because of this capability, the deployment of these launchers on land violates the treaty. The United States counters that the land-based version has been modified in ways that prevent it from launching cruise missiles—but Moscow's ongoing concern is understandable nonetheless.

Against this background, Washington should offer Moscow a deal: Russia will be permitted to inspect ground-based missile defense launchers in Europe to verify they have been modified to ensure they cannot be used to launch cruise missiles, if the United States is permitted to inspect Russia's banned cruise missiles to verify that they have been modified to ensure compliance with the treaty's range limits. Before making this offer, the United States should consult with its NATO allies—Romania and Poland, in particular—to secure their support.

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A precedent for such an offer comes from 2007, when the administration of President George W. Bush was planning to deploy a missile-defense radar in the Czech Republic. It offered to permit Russian inspections to confirm that the radar was oriented toward Iran and not Russia. Given the deal suggested here would be based on strict reciprocity, it should be more acceptable to the U.S. body politic than the Bush administration's offer, which required Russia to do nothing in return.

Russia turned down the 2007 offer and, in the short term, it seems extremely unlikely that it would take the United States up on this one. But Washington should leave the offer on the table. If it is successful, over time, at imposing costs on Russia for its violation, Moscow just might start looking for a way out.

<https://www.russiamatters.org/analysis/strategy-modestly-increasing-chance-saving-inf-treaty>

[Return to top](#)

TASS (Moscow, Russia)

### **Moscow Points to US Systematically Violating Obligations Under INF Treaty**

Author Not Attributed

May 10, 2017

Director of the Russian Foreign Ministry's Non-proliferation and Arms Control Department, Mikhail Ulyanov, has informed the first session of the Preparatory Committee of the Non-Proliferation Treaty 2020 Review Conference that Washington systematically violates the treaty that outlawed intermediate-range and shorter-range missiles.

Today, he said, the nuclear arms race has not just been brought to a halt, but on the contrary, shifted into reverse.

"As far as nuclear disarmament talks are concerned, they have been held repeatedly to produce a package of effective agreements between Russia and the United States," Ulyanov emphasized. "As a result of their implementation over the past 30 years, as we have already noted, at least four-fifths of the way towards a non-nuclear world have been covered."

"These achievements, though, have been overshadowed by systematic violations of the INF treaty by Washington," the diplomat pointed out. "We are urging the United States to return to diligent compliance with that vital treaty."

<http://tass.com/politics/945247>

[Return to top](#)

NATO (Brussels, Belgium)

### **Deputy Secretary General discusses arms control in Vienna**

Author Not Attributed

May 9, 2017

NATO Deputy Secretary General Rose Gottemoeller began a two-day visit to Austria on Friday (5 May 2017) with a speech at the Vienna Centre for Disarmament and

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Non-Proliferation (VCDNP). Addressing a seminar on ‘NATO’s Enduring Commitment to the Non-Proliferation Treaty’, Ms. Gottemoeller outlined the Alliance’s efforts to preserve peace, limit proliferation and reduce the number of nuclear weapons.

The Deputy Secretary General stressed that nuclear and conventional arms control agreements help to keep the world a more peaceful place and will always have NATO’s support. The nuclear Non-Proliferation Treaty, for instance, bolsters Allies’ common, collective defence. In signing the NPT, non-nuclear powers agreed to refrain from acquiring nuclear weapons, and in return nuclear powers would strive to reduce and eventually eliminate their own weapons. “Without the NPT, we would have had no impetus to peacefully address the Cold War overbuild of nuclear weapons – over 70,000 at the peak of the building frenzy of the 1960s,” said Ms. Gottemoeller.

The Deputy Secretary General emphasised that all Allies are strong supporters of the strategic arms reduction process. The Intermediate-Range Nuclear Forces Treaty (INF Treaty), in particular, is a crucial element of Euro-Atlantic security, and eliminated an entire category of nuclear weapons that threatened Europe.

On Saturday (6 May), the Deputy Secretary General will participate in a panel session on NATO-Russia relations, as part of a diplomatic workshop hosted by the VCDNP and the James Martin Center for Nonproliferation Studies.

[http://www.nato.int/cps/en/natohq/news\\_143495.htm](http://www.nato.int/cps/en/natohq/news_143495.htm)

[Return to top](#)

Stars and Stripes Okinawa (Okinawa, Japan)

### **North Korea’s ICBMs have ‘important shortfalls,’ Pentagon says**

By Tony Capaccio

May 12, 2017

North Korea must still overcome “important shortfalls” in developing a nuclear-armed intercontinental ballistic missile before it can field a weapon capable of hitting the U.S., according to the Pentagon’s intelligence agency.

Kim Jong Un’s regime “continues efforts to expand its stockpile of weapons-grade fissile materials,” but “there is still a lot of development needed before” it can deploy a weapon such as a mobile ICBM able to reach the U.S. mainland, Navy Commander William Marks, a Defense Intelligence Agency spokesman, said via email.

The agency’s answers to questions about the nuclear program come as tensions on the Korean Peninsula remain high after Kim’s repeated weapons tests in violation of United Nations resolutions. In response, President Donald Trump deployed an aircraft carrier

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battle group and a nuclear submarine to reinforce defenses in the region. Trump has vowed Kim's plans to develop a nuclear weapon capable of striking the U.S. "won't happen."

The danger posed by North Korea is likely to be a key topic at an annual Senate Intelligence Committee hearing Thursday on "Worldwide Threats." In addition to Lt. Gen. Vincent Stewart, director of the Defense Intelligence Agency, officials at the hearing will include Director of National Intelligence Dan Coats, CIA chief Mike Pompeo and Andrew McCabe, the acting director of the FBI who replaced James Comey after he was fired Tuesday.

"Though we've seen North Korea accomplish some key milestones in specific short-range systems, important shortfalls remain in the development of longer range missiles," the DIA said.

The agency didn't address estimates by other analysts that North Korea will need until at least 2020 to develop an ICBM with a nuclear warhead capable of hitting the U.S. mainland. But it does suggest there's still time for diplomacy or military action to prevent that from happening.

Despite continued progress on North Korea's weapons program, missiles capable of reaching the U.S. "are extremely complex systems that require multiple flight tests to identify and correct design or manufacturing defects," so "without flight tests, the KN-08's reliability as a weapons system is low," Marks said.

The KN-08 is the Pentagon's designation for a North Korean missile that's intended to have an estimated range of more than 3,400 miles and would be mounted on mobile launchers that are hard to track and detect.

The DIA statements "illustrate that North Korea does not have that capacity today and that the technical road ahead is challenging," Steven Hildreth, a missile defense expert for the nonpartisan Congressional Research Service, said in an email.

The Trump administration has signaled it wouldn't rule out a pre-emptive strike to halt Kim's weapons programs. Secretary of State Rex Tillerson called North Korea an "imminent threat" that requires "immediate attention." The administration has said, however, that it wants China to use its leverage over North Korea to reach a diplomatic solution to the crisis.

Bruce Klingner, a former Korea deputy division chief at the CIA who is now an Asia analyst at the Heritage Foundation, said the DIA's statements don't undercut Tillerson's view of North Korea as an imminent threat "since we know" the regime's "been working for some time on an ICBM." But "one successful test can cause a dramatic reappraisal," he said.

Based on the DIA statements, "if talking about an ICBM capable of striking the continental U.S., I would say it is 'fast approaching,' or a 'near-term' threat, not 'imminent,'" Michael Elleman, a missile defense analyst for 38 North, a website that focuses on North Korea, said in an email.

But the threat to South Korea and Japan from North Korea's shorter-range weapons is imminent, added Elleman, who said he found the DIA comments "reassuring."

The DIA has based its view partly on the North Korea's inability — so far — to successfully flight-test an ICBM. The North Koreans have conducted static ground tests of ICBM engines and at least one ground-test of a re-entry vehicle that could carry a warhead, missile analyst Jeffrey Lewis said.

"We do not believe they would have success with either the booster" or re-entry vehicle that would carry a nuclear warhead "early in testing," the DIA said.

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Yet in April 2015, Adm. William Gortney, who was head of the U.S. Northern Command, said he considered the KN-08 to be operational and capable of carrying a miniaturized nuclear warhead that could be launched toward the U.S.

"DIA is clearly hanging its hat on the lack of a flight test, which Kim Jong Un signaled could occur any time this year," Lewis, director of East Asia nonproliferation at the Middlebury Institute of International Studies in Monterey, California, said in an email.

"It is also clear they expect a first test to fail," he said. "The judgment is probably analytically sound, but if the North Koreans get lucky there will be hell to pay."

<https://okinawa.stripes.com/news/north-korea%E2%80%99s-icbms-have-%E2%80%98important-shortfalls%E2%80%99-pentagon-says>

[Return to top](#)

BBC News (London, UK)

### **China presses South Korea on Thaad missile system**

Author Not Attributed

May 11, 2017

*China's president has set out his opposition to the deployment of a US missile system, in his first discussion with the new South Korean leader.*

The Thaad missile system, aimed at intercepting attacks from North Korea, was made operational in South Korea last week.

But Beijing says the system will spy on its territory and has strongly criticised its deployment.

Relations between Beijing and Seoul have deteriorated over the issue.

Liberal Moon Jae-in was elected South Korean president on Tuesday. He is facing a delicate task balancing ties with the US, Seoul's traditional ally, and China - both of whose help he needs to tackle North Korea and its nuclear ambitions.

A South Korean presidential spokesman said that the Chinese leader - who initiated the call - "explained the reasons for Beijing's strong and repeated opposition" to the deployment, Yonhap news agency reported.

"President Moon said the Thaad issue can be resolved when there is no further provocation by North Korea," spokesman Yoon Young-chan said.

Mr Moon also raised the issue of apparent economic retaliation against South Korean firms in China, he said. He will send a delegation to Beijing to discuss both North Korea and Thaad.

The Thaad deployment was agreed by Mr Moon's predecessor, conservative leader Park Guen-hye. She is currently in prison awaiting trial on corruption charges.

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Washington says the Terminal High Altitude Area Defence (Thaad) system will play a vital role in curbing the missile threat from Pyongyang, but Beijing says that the system's radar affects its security.

The deployment is also unpopular among South Koreans who live near the site that hosts the system because they believe it makes them a target.

Mr Moon's position on Thaad is not yet completely clear - his comments have been ambivalent in the past. His spokesman called a US decision to roll it out in the weeks before the election "very inappropriate", as it stripped the next government of the right to make its own decision on the system.

A Chinese foreign ministry spokesman said that the two sides expressed willingness "to bring [relations] back to a healthy and stable development track".

Both Mr Moon and Mr Xi agreed that denuclearising North Korea was a "common goal". Mr Moon has advocated dialogue with the North as well as sanctions, adopting a more conciliatory stance than his predecessor.

What is the Terminal High Altitude Area Defense System (Thaad)?

Shoots down short and medium-range ballistic missiles in the terminal phase of their flight

Uses hit-to-kill technology - where kinetic energy destroys the incoming warhead

Has a range of 200km and can reach an altitude of 150km

US has previously deployed it in Guam and Hawaii as a measure against potential attacks from North Korea

What impact will S Korea's expanded missile defence system have?

The enemy launches a missile

The Thaad radar system detects the launch, which is relayed to command and control

Thaad command and control instructs the launch of an interceptor missile

The interceptor missile is fired at the enemy projectile

The enemy projectile is destroyed in the terminal phase of flight

The launcher trucks can hold up to eight interceptor missiles.

<http://www.bbc.com/news/world-asia-39883804>

[Return to top](#)

38 North (Washington, DC)

### **Going Under Cover: Enhanced Concealment Effort Noted at the Punggye-ri Nuclear Test Site**

By Frank Pabian, Joseph Bermudez and Jack Liu

May 10, 2017

Commercial satellite imagery of the Punggye-ri Nuclear Test Site from May 2 and 3 indicates a low level of activity continues around the North Portal, the tunnel where test preparations have been observed over the past few weeks. Additionally, what appears to be disruptive



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pattern camouflage paint has been added to the roofs of the Command Center buildings, which might be an attempt to reduce foreign capabilities to observe and monitor activities at the site from overhead, as well as prevent some key buildings from being easily recognized. This type of activity has been used at the nuclear test site before, most notably at the Main Administrative Area buildings in 2011.

### **North Portal**

Satellite imagery from May 2 and 3 indicates little activity at the North Portal. Although it appears that water is still being pumped out of the portal, which helps to maintain optimal conditions for instrumentation and stemming, the rest of this area is relatively quiet compared to the past few weeks. There was one possible rail cart out on the spoil pile on May 2, but no other vehicles were present.

### **Other Areas**

In the Main Administrative Area, no personnel are present, as in previous updates; only a dark-toned vehicle is noted on May 3, which was not present on May 2, the purpose of which is unclear. No new activity is discernible at either the South or West Portals, and there are no vehicles or personnel in view on either day in those areas. There were also no vehicles observed on the road between the Portals Area and the Command Center.

### **Roofs Repainted at the Command Center**

The Command Center, located six kilometers south of the Portals Area, while relatively quiet, has undergone a noticeable transformation. Disruptive pattern camouflage paint has been newly applied to the roofs of the two larger of the three main buildings in the Center. The purpose of disruptive pattern camouflage is to break up the outlines of the buildings with a strongly contrasting pattern as a form of passive defense against overhead identification and targeting in the event of a military aerial attack.

Within the Command Center, there is now evidence that the smallest building (constructed as an extension of the middle building, which originally likely served as a VIP villa) had its roof painted with a dual-purpose disruptive pattern paint; in natural color view, it was largely bluish but the paint also incorporated spectral mimicking to help the roof blend in with surrounding vegetation when viewed on color-infrared imagery.

It should also be noted that this effort builds on previous use of camouflage at the Punggye-ri Nuclear Test Site. Disruptive pattern camouflage paint had first been applied to the roofs of all the buildings in the Main Administrative Area by 2011 as can be seen on Google Earth historical imagery, but that paint has substantially faded since then. Camouflage netting has also been observed intermittently within the Portals Area of the site dating back to the time of the first test in October 2006.



While it is perhaps too soon to determine the extent to which North Korea has, or will, change its historical pattern of activity at the test site, the renewed effort to employ disruptive pattern camouflage for passive defense at the Command Center at least suggests that North Korea is responding to a heightened sensitivity to overhead observation and monitoring and is attempting to make that more difficult (if not just to provide a new distraction).

As before, on the basis of the analysis of satellite imagery alone, it is unclear if such activity indicates that a nuclear test has been cancelled, the facility is in stand-by mode, or that a test is imminent.

<http://38north.org/2017/05/punggyeri051017/>

[Return to top](#)

Deutsche Welle (Bonn, Germany)

### **China, South Korea seek to steer North from nuclear path**

Author Not Attributed

May 11, 2017

*The presidents of China and South Korea have agreed they want North Korea to move away from its agenda of atomic antagonism. A US missile-defense system deployed on the peninsula was also a topic of conversation.*

In his first talk with Chinese President Xi Jinping since being sworn in as South Korea's president, South Korea's Moon Jae-in (pictured) sought common ground with China on North Korea's nuclear program.

"The resolution of the North Korean nuclear issue must be comprehensive and sequential, with pressure and sanctions used in parallel with negotiations," Moon's spokesman, Yoon Young-chan, said the president had told Xi. "Sanctions against North Korea are also a means to bring the North to the negotiating table."

The presidents also discussed the contentious Terminal High Altitude Area Defense (THAAD) anti-missile system the United States installed in South Korea to Beijing's chagrin.

"President Moon said he understands China's interest in the THAAD deployment and its concerns and said he hopes the two countries can swiftly get on with communication to further improve each other's understanding," Yoon said of the 40-minute phone call.

"President Moon said the THAAD issue can be resolved when there is no further provocation by North Korea."

Moon took over this week after his predecessor, Park Geun-hye, fell to a growing corruption scandal in March. Park had agreed to the deployment of the THAAD system last year after North Korea launched an object into space with a long-range rocket launch that put an object into space. During his campaign for this week's snap presidential election, Moon said he wanted to review that decision.

'Peace and stability'

China charges that the US THAAD system destabilizes security and does little to curb the threat posed by the nuclear and missile programs that North Korea has pursued in defiance



## **USAF Center for Unconventional Weapons Studies (CUWS) Outreach Journal**

of pressure by the United States and sanctions by the UN. In his first speech after Wednesday's swearing-in ceremony, Moon said he would immediately begin efforts to defuse security tensions on the Korean Peninsula and negotiate with the United States and China to ease the THAAD row. He said he would even go to Pyongyang "if the conditions are right."

According to a statement from China's Foreign Ministry released on Thursday, Xi was on board with his counterpart's suggestions.

"For a long time, China has upheld the goal of the de-nuclearization of the Korean Peninsula, protecting the peace and stability of the peninsula, and resolving the problem via dialogue and consultation," Xi said, according to the Foreign Ministry.

Despite China's unease with North Korea's repeated nuclear and missile tests - and its agreeing to UN sanctions against the isolated state - Beijing remains Pyongyang's most important economic and diplomatic backer.

Germany, too, applies sanctions to North Korea.

<http://www.dw.com/en/china-south-korea-seek-to-steer-north-from-nuclear-path/a-38794619>

[Return to top](#)

EUROPE/RUSSIA

TASS (Moscow, Russia)

### **Russian Chemists Develop Fabric Resistant to Chemical and Biological Weapons**

Author Not Attributed

May 12, 2017

*The testing of special suits made of a special membrane fabric is to be completed by the end of this year*

Chemists from Saratov State University have come up with what they say is a membrane solution capable of protecting military personnel from chemical and biological weapons while remaining air and vapor permeable, the university's president, Leonid Kossovich, told TASS in an interview, adding that the project was ordered by the Fund for Perspective Research.

"In cooperation with industrial partners, experimental suits have been made for Defense Ministry and Interior Ministry personnel to wear during a test period. When the testing is over, the possibility of batch production may be considered," Kossovich said.

The testing of special suits made of a special membrane fabric is to be completed by the end of this year. The material's certification will follow shortly afterwards.

"The authorities of the Saratov Region will join the project at the next stage. They are already working on an investment project for launching full-fledged industrial production of the membrane fabric," the university president elaborated.

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The membrane fabrics are impermeable to water, viruses, bacteria, toxins and allergens. The wearer of the suit is safe from the hazardous effects of chemical and biological agents. At the same time, the nanofiber fabric is microporous allowing for air and vapor circulation. The technical fabrics were created within the framework of a larger project of the Fund for Perspective Research for creating combat gear of the future. The research began in 2014.

"At the request of a partner in Moscow we are about to start manufacturing a large consignment of the membrane fabric, about seven kilometers in total length," Kossovich said.

The new material may come in handy for making not only military uniform, but also clothes and gear for extreme athletes and polar explorers.

"The properties of the Russian product surpass those of its foreign counterparts. Also, the membrane fabric is less costly, with the entire production chain located in Russia. So far all membrane water-tight air permeable materials have had to be imported. Our product will surely be in great demand on the domestic market. Several major manufacturers have already stated they are interested," Kossovich said.

<http://tass.com/defense/945593>

[Return to top](#)

The National Interest (Washington, DC)

## **Nukes, Subs and Missiles: How Russia Plans to Challenge America's Military Dominance**

By Dave Majumdar

May 11, 2017

Russia has modernized its tactical nuclear forces—which include short-range ballistic missiles, gravity bombs, cruise missiles and even nuclear-tipped surface-to-air missiles. “In short, Russia’s programmes focusing on rearmament of the nuclear forces are progressing into advanced stages,” the authors wrote. “Russia already has a significant advantage over the U.S. in terms of the quality and variety of its delivery systems, and can reasonably ensure the strategic effectiveness of its nuclear forces in the near future.”

But Russia has not given up on conventional armaments and is researching many of the same technologies as the United States in its response to the Third Offset Strategy—but on a smaller scale, due to the Kremlin’s limited resources. “Russian technologies are at the early stages in some areas,” the authors wrote. “However, in other areas such as directed energy weapons, rail gun, hypersonic vehicle; unmanned underwater vehicle programmes are progressing into advanced stages.”

The Russian response to the Pentagon’s Third Offset Strategy has been to prioritize the development of tactical and strategic nuclear weapons argues a new report from the Institute of Defence and Strategic Studies (IDSS) at the Singapore-based S. Rajaratnam School of International Studies. But while the Kremlin is prioritizing the development of new nuclear weapons as competition in the conventional arms race speeds up, Moscow is also pursuing its own military innovations albeit on a smaller scale.

“Russian responses to counter these initiatives consist of two major elements: The first one is ‘countering the Third Offset Strategy with the First Offset Strategy’, which means





## ***USAF Center for Unconventional Weapons Studies (CUWS) Outreach Journal***

prioritising the development of a wide array of both strategic and tactical nuclear weapons systems,” wrote Michael Raska, a professor at IDSS, and Vasily Kashin, a senior research fellow in the Institute of Far Eastern Studies in the Russian Academy of Sciences [3]. “For Russia, maintaining a sophisticated arsenal of nuclear weapons can effectively offset conventional military innovations of the U.S., NATO, and China. The second element of the response strategy is more ambitious, and carries greater technological risks. Russia began to counter many U.S. technological initiatives via similar indigenous programs, although more narrowly focused and smaller in scale.”

Russian nuclear modernization has been extensive, with multiple programs designed to counter the nascent U.S. missile shield that is being erected in Europe. “Russia has been deploying the new RS-24 Yars (SS-27 Mod 2) ICBMs, and the new Borei class SSBNs armed with RSM-56 Bulava (SS-N-32) missile systems,” the authors write. “Simultaneously, however, Russia has been developing at least two additional ICBM families: a heavy liquid fuel Sarmat ICBM (RS-28) and a mobile solid fuel Rubezh (RS-26) system, specifically designed to defeat future U.S. missile defence shields in Europe. The development of a rail-based ICBM system utilising one of the existing ICBM types (most likely RS-24) has also started. Furthermore, Russia is working on the hypersonic reentry vehicles for its ICBMs. Another extensive programme is the development of a significantly upgraded version of Tu-160 Blackjack strategic bomber, which will be produced in Kazan. Moscow takes any possible threat to the effectiveness of Russian nuclear forces very seriously, and immediately embarks on planning countermeasures.”

Additionally, Russia has modernized its tactical nuclear forces—which include short-range ballistic missiles, gravity bombs, cruise missiles and even nuclear-tipped surface-to-air missiles. “In short, Russia’s programmes focusing on rearmament of the nuclear forces are progressing into advanced stages,” the authors wrote. “Russia already has a significant advantage over the U.S. in terms of the quality and variety of its delivery systems, and can reasonably ensure the strategic effectiveness of its nuclear forces in the near future.”

But Russia has not given up on conventional armaments and is researching many of the same technologies as the United States in its response to the Third Offset Strategy—but on a smaller scale, due to the Kremlin’s limited resources. “Russian technologies are at the early stages in some areas,” the authors wrote. “However, in other areas such as directed energy weapons, rail gun, hypersonic vehicle; unmanned underwater vehicle programmes are progressing into advanced stages.”

Long-term, the Russians are likely to focus on the following technologies:

Robotic and remotely controlled systems, including UAVs, as well as ground vehicles—combat, reconnaissance, logistical, which are currently undergoing vigorous testing

New generation of electronic warfare systems and expanded capabilities in cyber-warfare

Introduction of the advanced command and control systems, including battlefield internet

Advanced long-range and ultra-long-range air defence and missile defence systems with ASAT capabilities, which will be used not just for air defence, but for gaining air superiority, offsetting the advantages of the Western adversaries



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New generation of well-protected armored vehicles that will dramatically reduce losses in the local conflicts

Advanced fighter aircraft capable of engaging the 5th generation Western fighters

Hypersonic weapons as the main way to defeat future developments in foreign anti-air and missile defence systems

Directed energy weapons programmes designed to establish foundations for the future weapons development

Notably, project like the gargantuan Lider-class nuclear-powered destroyer or new aircraft carriers are not on the list. That is because while the Kremlin's state-owned media often focuses on outlandish propaganda, the authors note that Russian professional journals provide accurate information about Moscow's strategies. Meanwhile, Western analysts and media generally ignore such information—possibly due to the language gap.

“It is important to understand the differences between the Russian defence policies as portrayed in the Russian mainstream media, the Russian defence policy described in the West, and the real Russian defence policy,” wrote the authors. “These three phenomena largely exist in three different universes, and are barely related to each other. The defence technology and military build-up programmes, which in reality will define the future Russian military and shape the strategic balance in the areas surrounding Russia, are almost never secret; they are well described in the statements by Russian defence industry officials and professional publications of the Russian defence experts. These programmes, however, are rarely given attention and consideration in the publications of the Russian mainstream media, which tends to focus on the high profile, but mostly unrealistic weapons concepts. These are mostly ignored in the West, where the prevailing perceptions portray Moscow as a resurgent global power that will challenge the United States and the West on all fronts worldwide.”

Ultimately, the Kremlin seems to be pursuing a relatively sensible strategy, given Russia's technical and material resources.

<http://nationalinterest.org/blog/the-buzz/nukes-subs-missiles-how-russia-plans-challenge-americas-20622>

[Return to top](#)

The Telegraph (London, UK)

## **Jeremy Corbyn casts doubt over Labour pledge to renew Trident**

By Jack Maidment

May 12, 2017

Jeremy Corbyn could abandon a manifesto pledge to replace the UK's Trident nuclear submarines within weeks of being elected as Prime Minister.

Labour is committing to the renewal of the nuclear deterrent in the party's General Election manifesto.

But Mr Corbyn today refused to commit to a like-for-like replacement of the UK's existing complement of four submarines needed to sustain a continuous at sea deterrent as he said the system would be renewed.

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He said: "The decision of Parliament was to endorse the government's proposal for the replacement of Trident.

"That is the decision we will inherit as a Labour government and that is what the position is.

"We will also undertake a strategic defence review (SDR) as all incoming governments do looking at all aspects of our defence priorities for the future.

"But we cannot obviously decide what a review would decide otherwise you wouldn't have a review."

Mr Corbyn's comments are likely to be put him on a collision course with Nia Griffith, the shadow defence secretary, who is an ardent supporter of Trident.

Mr Corbyn made his comments during a question and answer session after he delivered a speech on defence and foreign policy at Chatham House in London.

Ms Griffith was not in attendance.

A Labour spokesman moved to clarify Mr Corbyn's comments and said that "Trident is part of the SDR but it's renewal is not in question".

He said: "SDRs cover all areas of defence and how they fit into wider policy to keep Britain safe."

The same spokesman later backed away from Mr Corbyn's comments and said: "We will deliver continuous at sea deterrent with the four submarines."

However, the language used by the Labour leader raises questions about whether a government under his leadership would commit to like-for-like renewal.

Mr Corbyn used the speech to try and bolster his defence credentials but he failed to cleanly deliver pre-briefed comments that he is "not a pacifist".

He said: "If elected Prime Minister, I will do everything necessary to protect the safety and security of our people and our country.

"That is our first duty and to achieve it I know we would have to work with other countries to solve problems, diffuse tensions and build collective security.

"The best defence for Britain is a government actively engaged in seeking political solutions to the world's problems.

"It doesn't make me a pacifist. I accept that military action, under international law and as a genuine last resort, is in some circumstances necessary.

"But that is very far from the kind of unilateral wars and interventions that have almost become routine in recent times."

The pre-briefed comments attracted criticism from members of his own party with one former Labour MP who is standing for election on June 8 telling The Telegraph: "It is absolutely true to Jeremy Corbyn's core beliefs over 30 years, it's true that he's not a pacifist.

"He supports Russian actions and he supported the IRA through the 1980s. He's just anti-western military interventions."

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Mr Corbyn also took a swipe at Theresa May in his speech as he said a Labour government would not act on the “whims of the Trump White House”.

He said he would “maintain” GCHQ, the Government’s listening post, and ruled out talks with Isil.

He also questioned the legitimacy of the First World War.

He said: "If you think back at our history, nobody in this room was around at the time of the First World War, but I'm sure many would have questioned its legitimacy and its whole approach.

"I doubt many, if any, in this room would have questioned the legitimacy ultimately of the Second World War because of the catastrophe that had approached by the rise of the Nazis all across Europe at that point."

<http://www.telegraph.co.uk/news/2017/05/12/jeremy-corbyn-casts-doubt-labour-pledge-renew-trident/>

[Return to top](#)

The Independent Barents Observer (Kirkenes, Norway)

## **Russia Rearms Strategic Forces: Satellite Images Show Expansion of Nuclear Weapons Sites on Kola**

By Thomas Nilsen

May 8, 2017

*The reverse gear seems to hang up for continuing disarmament of nuclear weapons in the Arctic. Barents Observer has made a comprehensive review of satellite images from naval base-level storage facilities that confirms heavy construction works.*

The New START Treaty says USA and Russia must limit the numbers of deployed strategic nuclear warheads to 1,550 by February 5, 2018. Over the last two years, Russia has increased the number of deployed warheads and is now 215 over the max limit to be reached.

There are extensive construction work at two of the Northern Fleet’s facilities for storage of warheads and ballistic missiles for submarines (SLBM) on the coast of to the Barents Sea. The Barents Observer has studied satellite images of the Kola Peninsula open available via Google Earth, combined with open-source data on numbers of nuclear warheads in Russia. The results are frightening.

Expansion of the two base-level storages in Okolnaya Bay near Severomorsk and Yagelnaya Bay in Gadzhiyevo are clearly visible. At both locations, new reinforced bunkers, auxiliary buildings and infrastructure partly finished and partly still under construction can be seen.

The satellite images, however, only reveal what is visible on the surface. Most of the actual warheads are underground.

What now takes place in regard to submarine-launched ballistic missiles’ facilities hasn’t been seen at the naval bases on Kola since the large-scale infrastructure construction to support the Typhoon submarines at the Nerpichya base in Zapadnaya Lista happened in the 1980s.

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There are four storages for nuclear weapons on Kola. From satellite images, these storages are not too difficult to find. All are surrounded by double or triple layer barrier of barbed wire fences with extraordinary security at the single entry-exit checkpoints. Also inside the outer fences, the different sections of the facilities are separated with similar security fence barriers. Comparing satellite images with photos posted on internet by naval officers or their family members makes it possible to get a pretty good impression of the current situation.

Several of the storage locations are visible on photos, although mainly in distance, available by searching Yandex, Russia's own search engine. Also, Wikimapia, an online editable map where people can mark and describe places, has been a good source to information when writing this article.

Zaozersk is the nuclear weapons storage nearest to Norway in a distance of 65 kilometers to the border in Grense Jakobselv. The Norwegian town of Kirkenes is 94 kilometers away. Distance to Finland is 120 kilometers. All four storage sites on Kola are within a radius of 190 kilometers from Norway and 180 kilometers from the Finnish border.

### **Gadzhiyevo submarine base**

The image below shows Yegelnaya Bay, better known as Gadzhiyevo naval base. This is likely Russia's most important location for naval strategic nuclear forces. The base is homeport to the fleet of six Delta-IV submarines and the «Yury Dolgoruky» of the Borei-class. Soon, at least three more Borei-class submarines will get Gadzhiyevo as homeport.

It is possible to date the image to late summer 2016 by counting the 81 reactor compartments stored in the nearby Saida Bay where also the «Itarus» transport barge can be seen. This barge was transferred from Italy to the Kola Peninsula last spring.

At the jetty in the bay, a Delta-IV class submarine is visible dockside the crane for loading and unloading ballistic missiles. The missiles are driven to the jetty from the storage in the valley behind where both the original storage and the new under construction are visible. The nuclear warheads are, for the most, stored inside the mountain to the left.

Three new reinforced bunkers and five similar bunkers under construction are visible. In the end of the valley, the entrance to an underground storage can be seen. The entrance to another underground storage is visible also at the first nuclear weapon storage facility. A nuclear missile transit hangar is located on the road towards the loading jetty.

How many missiles and warheads that are stored in Gadzhiyevo is not available information to be found in open sources.

Senior Researcher Kristian Åtland with the Norwegian Defence Research Establishment confirms to the Barents Observer that modern ballistic missiles can carry more warheads than older ones.

«In recent years, there has been a slight but steady increase in the number of nuclear warheads deployed on Russian intercontinental ballistic missiles (ICBMs), submarine-launched ballistic missiles (SLBMs) and missiles carried by long-range bomber aircraft. The number of delivery vehicles, ballistic missiles and heavy bombers, has remained fairly constant since 2011, but the new and modernized Russian ICBMs and SLBMs can carry



more warheads per missile than the missiles that they replace, hence the increase in the total number of deployed warheads.»

A report from last year written by Steinar Høibråten and Hanne Breivik with the Norwegian Defense Research Establishment says the Delta-IV class submarines are likely to carry the R-29RMU Sineva missile that can hold six nuclear warheads, but it is believed to hold four, each with an explosive yield of 100 kt. An upgraded version of the Sineva missile, named R-29RMU2, is also likely on board the Delta-IV submarines, together with the older version. These missiles can carry up to 10 smaller warheads, or four larger. It is unclear how many of the new Bulava missile, to be carried by the Borei-class submarines, that will be stored in Gadzhiyevo.

The main Bulava storage is under construction in Okolnaya Bay near Severomorsk, a three hour sailing from Gadzhiyevo.

### Okolnaya Bay

In 2013, construction of the first storage for 100 Bulava missiles started at the Northern Fleet's main munition depot in Okolnaya Bay across the waters from Severomorsk north of Murmansk. Quoting Izvestia, the Barents Observer reported that the new storages would cost 450 million rubles. When all Borei-class submarines that carries the Bulava are put in service around 2020, three Bulava storages would be in place with 200 missiles. It is Russia's Federal Agency for Special Constructions (Spetsstroy) that is responsible for the construction work.

Satellite images show the cliff with the entrances to the underground storage for nuclear weapons. Also, the new bunkers further up the valley are visible. A jetty where nuclear ballistic missiles can be loaded or unloaded to submarines is located by the end of the road in the upper right corner of the image. A new jetty under construction can be seen in just across the bay from Severomorsk. The Northern Fleet recently got a new transport vessel for the new Bulava-missiles. The vessel «Akademik Kovelyov» can also sail Bulava-missiles to and from Okolnaya Bay and the naval yards in Severodvinsk by the White Sea.

When a ballistic missile submarine is on patrol mission, the on board launchers are normally loaded with both missiles holding real nuclear warheads, but also dummy missiles aimed for test-launching. In between patrols, the submarines can change missiles, replace dummy missiles with real ones or vice-versa. Also, missiles are supposed to be taken out when a submarine is to be docked for repair or maintenance. When missiles are taken out from the launchers they are brought from the jetty to the storage facilities like in Okolnaya Bay.

### Naval nukes more important

With more Borei-class submarines put in operation, in addition to prolonging the life-time of the six Delta-IV submarines, a larger portion of Russia's ballistic missiles will be sailing out into the Barents Sea. Later this year, the first of the upgraded Borei-class submarines, the «Knyaz Vladimir» will be floated out from the yard in Severodvinsk, the Barents Observer recently reported. In difference from the first three Borei-class submarines already in service that are armed with 16 missiles, the following five submarines under construction are to be armed with 20 ballistic missiles each. One missile carries six nuclear warheads.

With a total of up to 120 warheads on each vessel, the Russian navy hasn't seen anything like since the giant Typhoon submarines sailed the Arctic waters during the Cold War. A



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new American report now suggests that even more than the known eight Borei-class vessels are to be built. «Expectations are emerging that Russia will order another four Borei SSBNs for a total fleet of 12 boats, the same number of SSBNs planned by the US Navy,» writes the two nuclear weapons experts Hans M. Kristensen and Robert S. Norris in the report published in the Bulletin of the Atomic Scientists.

Kristensen and Norris are known to be some of the best analysts on Russian nuclear weapon stockpiles outside the military and intelligence structures. Four additional Borei-class subs will add up to 480 more warheads to the fleet, and given that Russia and the US stay firm with the New START agreement, the implication is that the strategic importance of the ballistic missile submarine fleet will increase and make it more significant to Russia's adversaries.

In late 2015, President Vladimir Putin said in a speech to the expanded meeting of the collegium of the Defense Ministry in Moscow that «new nuclear weapons should go to all parts of the nuclear triad; air, sea and land forces.» The president continued «Particular attention should be paid to strengthening the combat potential of the strategic nuclear forces.»

The Borei-class will in the longer run replace today's fleet of Delta-III (Pacific fleet) and Delta-IV (Northern fleet). With eight Borei submarines, the number of strategic warheads will be a maximum of 888; three with 16 missiles and five with 20 missiles. Given that the information about additional four Borei subs with 480 warheads is correct, the total number would then be as much as 1,388. In practice, not all Borei's will be deployed at the same time due to maintenance and repair work. Also, some of the missiles are likely to carry dummy warheads for test-launchings.

However, as least 1,000 of Russia's strategic nuclear warheads could theoretically be deployed at sea at any time.

Today, Kristian Åtland estimates that around 60 percent of Russia's more than 700 sea-based strategic nuclear warheads are concentrated on the Kola Peninsula, whereas the remaining 40 percent is based with the Pacific Fleet at Kamchatka.

«The numerical increase in Russia's strategic nuclear arsenal, including the part of it that is based on submarines operating from the Kola Peninsula, is neither dramatic nor unexpected. The increase is to be understood in the context of Russia's long-standing and still on-going defense modernization. The modernization of Russia's strategic nuclear forces has been a key priority in the State Armaments Program for the period up to 2020 ("GPV-2020"), which was launched in 2010. In addition, the general deterioration of Russia's relationship with the West, particularly since 2014, seems to have led to a renewed focus on the issue of nuclear deterrence, in Russia as well as in the United States,» Åtland elaborates.

Gorbachev called for nuclear-free zone

2017 marks the 30-years anniversary since Michael Gorbachev's famous Murmansk-speech on October 1st 1987 where he called for a nuclear-free zone in Northern Europe. Since then, the numbers of nuclear warheads based on the Kola Peninsula saw a continuing decrease until 2015, five years after Barack Obama and Dmitry Medvedev signed the New START Treaty in Prague. In July 2015, Russia reportedly had less deployed strategic nuclear

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warheads than the United States, 1,582 versus 1,597, the Bureau of Arms Control with the U.S. Department of State reported.

### 215 over New START Treaty limit

Latest exchange and verification numbers from the same bureau dated April 1, 2017 shows that Russia now has 1,765 versus the United State's 1,411. In other words; Russia has 215 warheads more than the maximum set to be achieved nine months ahead. The questions is whether Moscow is likely to dismantle over 200 warheads in less than a year.

Katarzyna Zysk, Associate Professor with the Norwegian Defense University College, says to the Barents Observer that Russia has a vested interest in maintaining the New START agreement. «Russia has a vested interest in maintaining the New START given that it keeps the development of the US strategic nuclear capabilities under control, provides Russia transparency measures and valued insight into to the US nuclear forces, thus increasing predictability,» she says, but underscore that the numbers must down.

«In order to meet the New START Treaty limits when it enters into effect in February 2018, Russia will have to decrease the numbers. However, Russia has been moving toward meeting the obligations as the number of Russia's deployed strategic warheads has been decreasing compared with 2016. The US is now below the treaty limit and is in fact increasing the number of strategic deployed warheads,» Zysk explains.

Åtland agrees and underscores that today's numbers do not constitute a treaty violation.

«The fact that Russia is now above the maximum warhead limits of the new START Treaty, which entered into force in 2011, does not in itself constitute a treaty violation. The treaty does not mandate any particular schedule for reductions other than that the agreed-upon limits must be met by February 2018, which is in nine months from now. Reductions in the number of deployed warheads are fairly easy to achieve once the political will is there, either by phasing out old delivery platforms or by removing deployed warheads to central storage. Thus, the identified "peak" may be temporary,» Åtland says. He hopes both the United States and Russia will work towards an extension of the Treaty.

«Hopefully, Russia will stand by its commitments under the current START Treaty regime. In any event, it is important that Russia and the U.S. continue to exchange data about the status of their nuclear arsenals and that they provide for mutual inspections and other transparency measures outlined in the START Treaty and other documents. The parties should also work towards an extension or replacement of the Treaty when it expires in February 2021.»

«Just another bad deal...»

In his first phone talk as president with Russia's Vladimir Putin, Donald Trump in February denounced the treaty, Reuters reported two U.S. officials with knowledge of the call saying. In another interview with Reuters, President Trump said the New START Treaty is «a one-sided deal.» «Just another bad deal that the country made, whether it's START, whether it's the Iran deal... We're going to start making good deals,» the American president said.

Additional to the deployed strategic warheads are the warheads in reserve and in centralized stockpiles. Kristensen and Norris with the Federation of American Scientists estimate that Russia has a a reserve of 2,390 non deployed warheads and another 4,300 in centralized stockpile, including an estimated 2,700 retired warheads awaiting dismantlement. In total, that is around 7,000 nuclear warheads deployed or stored at different locations in Russia.





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Katarzyna Zysk explains why nuclear weapons are so important for Russia.

«The main mission of nuclear weapons in military strategy is to deter and defeat potential enemies that are military superior to Russia, such as the US/NATO or China. Russia differentiates between three types of conflict: local, regional and large-scale, and nuclear weapons are intended to play a role in each of them. For instance, in a local conflict, such as Ukraine, the nuclear weapons are to deter potential opponents from intervening in the conflict; in a regional war with NATO or China, with the threat to use nuclear weapons, Russia intends to keep the war from expanding, also by employing nuclear weapons at an early stage in a conflict - “the escalate to de-escalate” - although to what extent it is credible and realistic is debatable,» Zysk says.

She also estimates Russia’s full stockpile of nuclear warheads to be around 7,000.

Post-post Cold War geopolitics

Professor Rasmus Gjedssø Bertelsen with the Department of Sociology, Political Science and Community Planning with UiT – The Arctic University of Norway says the Kola Peninsula remains crucial for Russian submarines’ access to open seas. He explains how the Arctic for centuries has been an integrated part of the international political, economic and security system.

«Today the Arctic is defined by globalization and post-post-Cold War geopolitics between Russia and the West. And strategic nuclear weapons remain a crucial aspect to great power geopolitics. Russia’s great power status is greatly based on its nuclear capabilities and the nuclear strategic balance between the USA and Russia. Nothing has changed concerning this strategic nuclear balance. And the geo-strategic position of the Arctic has not changed either. So the Kola Peninsula remains crucial for Russian open sea access for strategic nuclear submarine forces and the air and surface assets to protect these strategic nuclear submarines,» Gjedssø Bertelsen says to the Barents Observer.

Russia’s great power status is greatly based on its nuclear capabilities and the nuclear strategic balance between the USA and Russia. Nothing has changed concerning this strategic nuclear balance.

He calls on the younger generation to understand the mechanism of nuclear deterrence established during the Cold War and the Arctic’s important role.

«The public, media, academia, governments and politicians must be aware of this geo-strategic constancy, which deeply affects the Arctic, but is not determined by the Arctic. As a professor of Arctic international politics, I notice that younger colleagues and students often do not have the Cold War nuclear interest, knowledge or skill set. I am just old enough (42) and lived in Iceland in the 1980s experiencing the Cold War Keflavik base to remember that history. Managing the potentially cataclysmic technology of nuclear weapons in stable relationships of deterrence and arms control is a supremely intellectual challenge. It is therefore very important that we maintain and develop that knowledge and skillset among students, young researchers, politicians, officials and others although it may seem obsolete. The silent service continues, although we may not hear it,» Rasmus Gjedssø Bertelsen elaborates.

«Our policies are totally inadequate»

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Former US Secretary of Defense, William J. Perry, wrote an opinion published by The Hill in late April where he called on the current administration to give the highest priority to develop policies that recognize the new reality.

«A chilling return to Cold War nuclear dangers in addition to the more recent possibilities of nuclear terrorism and regional nuclear conflicts lead me to conclude that the likelihood of a nuclear catastrophe today is greater than it was during the Cold War. One thing is very clear: our policies are totally inadequate for dealing with these existential dangers,» Perry writes.

#### Zaozersk - Zapadnaya Litsa

During the last decade of the Cold War, a huge ballistic missile depot was built inside the mountain as part of the Nerpichya submarine base in the Zapadnaya Litsa fjord. This is the westernmost of the naval bases on the Kola Peninsula and was dedicated to the six giant Typhoon submarines, each capable of carrying 200 nuclear warheads.

There are no more Typhoon submarines in the Litsa fjord, but the nuclear weapons storage remains.

Satellite images clearly show that the storages are still in use. More than 30 cars are parked downside from the entrance to the facilities. At the pier in Nerpichya, one Delta-IV submarine and one Oscar-II submarine are visible at the pier with a floating crane (see image below). As seen from the double barbed wire fences, the storage site are divided into two, each with a separate entrance-exit checkpoint. The two checkpoints have roofs similar to checkpoints at the naval storages in Okolnaya Bay and Gadzhiyevo and the national storage site in Bolshoye Ramozero.

What the differences are between the two storages in Zaozersk is not known. Both have individual entrances to tunnels in the mountain. Judging from the rock dumps by the seaside, downhill from the facilities, the mountain tunnels are likely very big.

#### Norway pays for nuclear safety

While nuclear weapons are stored inside the mountain on the east side of the Litsa fjord, huge amounts of nuclear waste are stored just two kilometers away, across the fjord in the infamous Andreeva Bay. Thousands of cubic meters of solid radioactive waste and nearly 22,000 spent nuclear fuel elements from submarine reactors are stored here. Neighbouring Norway, along with other donor countries, have spent hundreds of millions kroner (tens of millions euros), on nuclear safety projects aimed at upgrading the infrastructure in Andreeva Bay.

On June 27, Norway's Minister of Foreign Affairs, Børge Brende, travels to Andreeva Bay to mark the first shipping of spent nuclear fuel out of the area, a job that is likely to continue for more than five years. Meanwhile, Russia continues to spend huge amounts of money on new nuclear weapons in the border areas.

#### Bolshoye Ramozero - the most secret

The most secret of all secret nuclear weapons storages on the Kola Peninsula is located some 20 kilometers to the northeast of the mining town Olenegorsk, on a side road towards Lovozero. The location, difficult to find references to on the internet, has several names; Katalya is one, Bolshoye Ramozero is another (the nearby lake). Like other secret towns in the Soviet Union, also this one had a post-code name; Olenegorsk-2. The nickname is Tsar City, allegedly because of the privileges the inhabitants had. The town is also simply known as Military Unit 62834 or Object 956.

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While it is easy to find selfies and blogposts from most Russian military garrisons and bases, few can be found from this town. Not too strange; the town is under full supervision of the 12th Chief Directorate of the Ministry of Defense. This directorate is responsible for all of Russia's nuclear weapons, including storages, technical maintenance and transportation.

The 12th Chief Directorate is probably the most secretive organization in the Russian Armed Forces, even more than the foreign military intelligence agency GRU and the strategic missile forces, according to Wikipedia.

Bolshoye Ramozero serves a national-level nuclear weapons facility, one of 12 such storages across Russia, according to a recent report written by Pavel Podvig and Javier Serrat. The report, focusing on non-strategic nuclear weapons in Europe, is published by the United Nations Institute for Disarmament Research (UNIDIR).

It is believed that all non-strategic nuclear warheads possible aimed for naval, air force and army weapons for the Kola area, and maybe even more, are stored at the central national level storage in Bolshaya Ramozero. According to the UNIDIR report, the 12th Chief Directorate is responsible for providing the nuclear warheads to the different military units "when deemed necessary." If a threatening situation occurs, warheads can be transported by trucks from this site to the different military units on the Kola Peninsula which holds weapons systems that could be armed with tactical nuclear weapons, like naval cruise missiles or torpedoes, or cruise missiles carried by aircrafts.

The nearest airbase to the central storage on Kola is Olenogorsk where Tu-22 bombers are stationed.

Inside the underground storage bunkers in Bolshaya Ramozero are only the warheads stored.

Satellite images show that there are two storage areas just north of the town. The first area has three internal sites, of which only two seems to be actively used. The second area is located another kilometer further north.

<https://thebarentsobserver.com/en/content/satellite-images-show-expansion-nuclear-weapons-sites-kola>

[Return to top](#)

Enab Baladi (Damascus, Syria)

### **Who Issued an Order to Use Chemical Weapons in Syria, And What does He have to do with the Fairytale Wedding?**

Author Not Attributed

May 6, 2017

Western intelligence reports located three locations for the manufacturing of chemical and biological weapons in Syria that belong to for the Scientific Studies and Research Center. These reports held Brigadier General Bassam Hassan to be responsible for issuing orders to use chemical weapons.

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In an intelligence document published by the BBC website, the locations are: the city of Masyaf in the Governorate of Hama, and the two suburbs of Barzeh and Dummar (Jamraya) around the capital Damascus.

The two factories of Masyaf and Barzeh are specialized in the assemblage of chemical weapons and long-range missiles and artillery shells.

#### Who Issued an Order to Use Chemical Weapons?

The document accused the government of the Syrian regime of “falsely” claiming that the work in one of these research branches was aimed at defensive purposes, while the work in fact continued to develop offensive capabilities.

The document also named a high-ranking official, Bassam al-Hassan, who played a key role in giving orders to use chemical weapons.

He has been listed in the 2014 list of US sanctions as President Bashar Al-Assad’s representative at the Scientific Studies and Research Center; he has a rank of brigadier general.

Enab Baladi referred back to Brigadier General al-Hassan’s file in the US Sanctions list. The file clarifies that he is the president of the Syrian regime’s strategic affairs counselor. He carries out several chief responsibilities in the Syrian regime, most notably, working as Al-Assad’s representative at the Scientific Studies and Research Center, a governmental agency responsible for the manufacture of non-conventional weapons.

Hassan is a commander in the Republican Guard. He is accused by US sanctions of being involved in arranging arms deals for the Syrian regime, and coordinating with representatives of foreign governments.

He was born in 1961 in the village of Shin in Homs. He is the successor of Brigadier General Muhammad Suleiman in the presidential palace, who was assassinated by Israel at the beginning of 2008.

It is believed that the operation of training the “Popular Committees” and redistributing them in an organized structure was coordinated between Tehran and Brigadier General Al-Hassan.

#### A “Fairytale” Ceremony is to be Organized Soon

Despite his multiple tasks, and perhaps because of them, rarely did the brigadier general appear publicly or on camera, except at the wedding of his daughter Bushra with the son of Palestinian businessman and merchant Naim Al-Jarrah.

The ceremony aroused then heated reactions, according to a previous report of Enab Baladi. The ceremony was held at Up Town Complex in Project Dummar in the capital Damascus. The lighting and the decor that were prepared by the company for the occasion showed that the wedding organizers paid a lot of money.

Up Town Complex was established in the eighth island of the Dummar Project (not far from the research center). This project is considered to be one of the most expensive areas of Syria, where a very large number of officials and officers reside.

#### The Center was Subject to Sanctions

The United States imposed sanctions on 271 employees at Jamraya Research Center (Dummar) in Damascus on the 24th of last April.

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The United States Treasury Secretary Steven Mnuchin claimed that “the extensive sanctions are targeting the center that has scientifically supported the horrific chemical attack of the Syrian dictator Bashar Al-Assad against innocent men, women and innocent civilian children”

Doubts were revolving around the existence of an additional Syrian chemical weapons stock. However, several reports proved that it was still manufacturing toxic gases in secret locations.

The chemical weapons case reemerged again after the chemical attack on Khan Shaykhun, which killed at least 85 civilians, according to Idlib Health Directorate.

<https://english.enabbaladi.net/archives/2017/05/issued-order-use-chemical-weapons-syria-fairytale-wedding/>

[Return to top](#)

Arab News (Jeddah, Saudi Arabia)

### **Iran-North Korea: Weapons and Nuclear Connections**

By Majid Rafizadeh

May 12, 2017

They appear to be two odd bedfellows. Iran is a Shiite theocracy while North Korea is mainly non-religious, and they do not share commonalities regarding ethnicity or geographic location. But for Iran, building alliances is not based on these commonalities. Although it views itself as the sole protector of Islam, religion is not the only factor in Iran’s establishment of alliances with states and non-state actors.

The critical concern for Tehran is commonalities in geopolitical and strategic objectives. The end game is key, and whatever means exist will be used to that end. As a result, for instance, even if a state or non-state actor disrespects Muslims or Islam, Tehran will still ally with it if it helps advance its regional hegemonic ambitions and nuclear development, and as long as they share the same values, such as anti-Americanism and disregard for international norms.

Iranian-North Korean cooperation is mutual and multifaceted. Iran desperately needs North Korea’s technological advancement for its nuclear program. There have long been official agreements to establish joint laboratories and exchange information. These deals are directly linked to nuclear activities.

Tehran has repeatedly bought weapons from North Korea, giving Pyongyang needed cash. Iran has also helped North Korea expand its influence and arms sales among state and non-state actors in the Middle East. The two countries enjoy sophisticated cooperation regarding their rogue missile programs. Their short-, medium- and long-range missiles are identical.

Iran desperately needs North Korea’s technological advancement for its nuclear program. There have long been official agreements to establish joint laboratories and exchange information. These deals are directly linked to nuclear activities.

**Issue No.1263, 12 May 2017**

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Only two nations in the world use the Yono-class submarine, which is hard to detect because it can hide in shallow water and operate on battery. The Pentagon says Iran recently test-fired missiles from one of these submarines, which was designed by North Korea. Iran regularly uses these submarines in the Gulf. This creates significant regional instability, and poses a security threat to the Gulf states and the US.

Iran and North Korea take advantage of the fact that they are not signatories to the Intermediate Range Nuclear Forces (INF), which prohibits the development of short-, medium- or long-range missiles. They share the same values of disregarding international law, creating insecurity for their neighbors, pursuing the development of nuclear weapons regardless of the Non-Proliferation Treaty (NPT), and threatening to destroy other countries.

Detecting the nuances of cooperation, financial transactions, and illicit arms or nuclear exchanges has become very challenging since four rounds of UN Security Council sanctions were lifted from Iran due to the nuclear deal, thanks to former US President Barack Obama.

The sophisticated relationship between North Korea and Iran has grave repercussions for the international community, as well as regional security and stability. If the international community is determined to counter North Korea, one effective approach would be to restrict or cut off its ties with Tehran.

This can be done by closely monitoring illicit weaponry and technological and nuclear cooperation. Ending such cooperation would significantly reduce the risk of Iran becoming a nuclear state, and would restrict its military adventurism.

<http://www.arabnews.com/node/1098101#>

[Return to top](#)

The Washington Times (Washington, DC)

## **Trump Extends National Emergency Order On Syria, Condemns 'Brutal' Regime**

By Dave Boyer

May 9, 2017

President Trump notified Congress Tuesday that he is extending U.S. sanctions and other national-security actions against Syria due to the government's use of chemical and biological weapons in its long-running civil war.

"The regime's brutality and repression of the Syrian people, who have been calling for freedom and a representative government, not only endangers the Syrian people themselves, but also generates instability throughout the region," Mr. Trump said.

He added that the actions of President Bashar Assad's government "continue to foster the rise of extremism and sectarianism and pose an unusual and extraordinary threat to the national security, foreign policy, and economy of the United States."

Mr. Trump ordered a series of missile strikes against a Syrian military base last month in response to Mr. Assad's forces launching a chemical-weapons attack against civilians.

The U.S. national-emergency sanctions against Syria have been in place since 2004.

Mr. Trump said the U.S. "condemns the Assad regime's use of brutal violence and human rights abuses and calls on the Assad regime to stop its violence against the Syrian people,"

**Issue No.1263, 12 May 2017**

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uphold a ceasefire to enable the delivery of humanitarian assistance, and “allow a political transition in Syria that will forge a credible path to a future of greater freedom, democracy, opportunity, and justice.”

<http://www.washingtontimes.com/news/2017/may/9/donald-trump-extends-national-emergency-order-syri/>

[Return to top](#)

Jewish Press (Brooklyn, NY)

### **Chutzpa News: Iran Says Israel ‘Main Obstacle’ to Nuclear-Free Middle East**

By Davis Israel

May 10, 2017

Reza Najafi, Iran’s Ambassador and permanent representative in International Atomic Energy Agency (IAEA), on Tuesday told a meeting of Preparatory Committee for 2020 Non-Proliferation Treaty (NPT) Review Conference in Vienna that the “Israeli regime,” with “blind support” from the US, is the main obstacle to creating a Middle East free of nuclear weapons.

Najafi said the “nuclear arsenal of the Israeli regime” has caused concerns for being a serious threat against peace and regional security.

Of course, while Israel has been rumored to possess a nuclear bomb since the 1960s, regional states such as Saudi Arabia have only begun urgent programs to attain their own nuclear weapons only after Iran had signed the deal with the Obama Administration and Western Powers freeing it to develop its own nukes in less than ten years.

Najafi pointed to several UN General Assembly resolutions, as well as NPT Review Conference, seeking a nuclear-free region in the Middle East, arguing that only the “stubborn opposition of the Israeli regime” with the “blind support of the US government” prevent this dream from becoming a reality.

In a blatant example of the pot calling the kettle black, Najafi called on Israel to destroy all its nuclear arsenals, thus giving up its “main instrument for blackmailing, aggression, suppression and continuation of its expansionist policies in the region.”

He called on the international community to force Israel to join the NPT and submit all its nuclear installations to the full supervision of IAEA safeguards.

<http://www.jewishpress.com/news/us-news/chutzpa-news-iran-says-israel-main-obstacle-to-nuclear-free-middle-east/2017/05/10/>

[Return to top](#)

**Issue No.1263, 12 May 2017**

United States Air Force Center for Unconventional Weapons Studies | Maxwell AFB, Alabama

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Hindustan Times (New Delhi, India)

## **India-Pakistan Ties to Worsen Unless Islamabad Cleans Up Act, Says US Threat Report**

By Yashwant Raj

May 11, 2017

*The US intelligence community's first worldwide threat assessment report under the Trump administration says India-Pakistan ties could worsen unless there is a significant reduction in cross-border terror attacks.*

Relations between India and Pakistan could worsen in 2017 unless there is a “sharp and sustained” drop in cross-border terror attacks from Pakistan, the US intelligence said on Thursday in its first report on worldwide threat assessment under the Trump administration, putting the onus of improving ties on Islamabad.

The report warned of Pakistan’s tactical nuclear weapons being captured by non-state actors, and of “persistent but diffuse” threats from Pakistan-based terrorist groups to the US and the West.

Plots against the US homeland, it said, will be “conducted on a more opportunistic basis or driven by individual members within these groups”.

The US intelligence gives Congress a report every year called “Worldwide Threat Assessment of the US Intelligence Community” with inputs from all 17 entities that comprise the community. It covers an entire range of threats from cyber to terrorism to weapons of mass destruction and new emerging challenges, such as artificial intelligence.

The warning that India-Pakistan relations “might deteriorate further in 2017” was premised on “the event of another high-profile terrorist attack in India that New Delhi attributes to originating in or receiving assistance from Pakistan”.

The report put the responsibility for improving relations squarely on Pakistan, arguing, “Easing of heightened Indo-Pakistani tension, including negotiations to renew official dialogue, will probably hinge in 2017 on a sharp and sustained reduction of cross-border attacks by terrorist groups based in Pakistan and progress in the Pathankot investigation.”

The report echoed India’s long-held position that Pakistan had failed to curb its support to anti-India terrorists and said New Delhi’s “growing intolerance of this policy, coupled with a perceived lack of progress in Pakistan’s investigations into the January 2016 Pathankot cross-border attack” caused a deterioration of relations last year.

Terrorists belonging to Pakistan-based Jaish-e-Mohammad attacked an Indian Air Force base in Pathankot on January 2, 2016, killing six soldiers. The attackers were killed in an operation lasting three days.

US intelligence also worries about Pakistan’s tactical nuclear weapons, the existence of which has been officially confirmed by Islamabad, saying its “pursuit (of these weapons) potentially lowers the threshold for their use”.

Pakistan’s stated willingness to deploy such weapons “early...during a crisis”, the report warned US lawmakers, “would increase the amount of time that systems would be outside the relative security of a storage site, increasing the risk that a coordinated attack by non-state actors might succeed in capturing a complete nuclear weapon”.

Pakistan has the world’s fastest growing nuclear arsenal, according to multiple reports and assessments, and has publicly owned up to the existence of tactical nuclear weapons, which

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are smaller and designed for use on the battlefield, aimed at offsetting India's heavy superiority in conventional weapons.

Concerns about these smaller weapons being more prone to theft were raised publicly by former president Barack Obama in April 2016, at the conclusion of a nuclear summit in Washington attended by Prime Minister Narendra Modi. He had said, without naming countries, "nuclear arsenals are expanding in some countries, with more small tactical nuclear weapons which could be at greater risk of theft".

<http://www.hindustantimes.com/world-news/india-pakistan-ties-to-worsen-unless-islamabad-cleans-up-act-says-us-threat-report/story-nbYsZnEKLjg2i4Cjy2WUll.html>

[Return to top](#)

Indian Express (New Delhi, India)

### **19 years of Pokhran-II tests: Where does Indian nuclear Arsenal stand now**

Author Not Attributed

May 11, 2017

*In 1998, India conducted Pokhran-II tests where five nuclear explosives were tested. The tests took place between May 11 and May 13. India has gone on to develop what is called a nuclear triad--nuclear strike capabilities from land, air, sea/undersea.*

It has been 19 years since India conducted its second nuclear test at Pokhran, Rajasthan. May 11 is now commemorated as National Technology Day for India's successful foray into nuclear weapons development.

Here is how the Indian nuclear weapons programme has travelled so far.

In 1998, India conducted Pokhran-II tests where five nuclear explosives were tested. The tests took place between May 11 and May 13. The first explosive was a fusion device while the rest four were fission devices. According to Armscontrol.org, as of January 2017, India had 100-120 nuclear warheads.

India has gone on to develop what is called a nuclear triad--nuclear strike capabilities from land, air, sea/undersea.

The Indian Army is in-charge of the land-based nuclear weapons. Launching platforms are both from launch vehicles and silos. The main nuclear weapons ballistic missiles are of the Agni family. Agni-I, Agni-II and Agni-III and Agni-VI have already been inducted. The Agni-V is in development/testing stages and has undergone at least four successful tests. It is expected to be inducted into full service soon. While Agni-VI Inter-Continental Ballistic Missile is in the pipeline.

Agni-I is a short-medium range missile with a range of 700-1250 km. Agni-II is the medium range ballistic missile with a range of 2,000-3,000 km. The intermediate range missiles are Agni-III and Agni-IV. Agni-III can strike targets at a distance of at least 3,000 km. Agni-IV has a range of 4,000 km. Agni V which is of the intermediate to intercontinental range can strike anywhere between 5,000 and 5,500 km.

**Issue No.1263, 12 May 2017**

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Prithvi missiles are short-range tactical missiles that are equipped for use with all the three service forces. Prithvi 1 class is a surface-to-surface missile. It is a tactical missile and primary use is for striking targets on the battlefield. These missiles are to be upgraded to the more accurate Prahaar system. Prithvi II missile has a range of up to 250 km. The missile was developed keeping in mind the primary user-Indian Air Force. Though, it was later inducted by the Army as well. The upgraded missiles have an extended range of around 350 km.

Prithvi III can carry a half a ton warhead up to 600 km. If its warhead is replaced with a 250 kg one, the extended range of the Prithvi -III goes up to 750 km. A customised version of this system was made into Dhanush for sea-based attacks.

#### Air Force nuclear weapons prowess

Air-based deployment via Indian Air Force aircraft is still in a nascent stage. Jaguar and Mirage 2000 aircraft are modelled to have the capability to carry nuclear warheads. Guided attacks, however, may not be possible with these and the option would be free dropping bombs. The soon to be inducted Rafales will have the capability to deploy guided nuclear weapons.

#### Naval nuclear weapon strike capability

India is awaiting the induction of the four nuclear powered Arihant class submarines with capabilities of launching ballistic missiles. The first of the four, INS Arihant, has been launched. It is the crown of the Indian Naval nuclear program. The submarine will be equipped with Sagarika (K-15) class ballistic missiles. Sagarika missile system has submarine launch capability and can be launched through the vessel's torpedo hold. It has a range of around 700 km. It can carry a payload of half a ton and weighs seven tonnes itself. The missile was tested via an undersea pontoon. But for extensive testings, India may look to request assistance from the Russian Navy.

Another system available with the Navy is the Dhanush ballistic missile system. It is a variant of the Prithvi missile and can strike targets up to 300 km. This is a ship- based system.

<http://indianexpress.com/article/india/agni-prithvi-missiles-nuclear-bombs-19-years-of-pokhran-ii-tests-where-does-indian-nuclear-arsenal-stand-now-4651178/>

[Return to top](#)

IAEA (Vienna, Austria)

### **Signing of a Safeguards Agreement with Pakistan**

Author Not Attributed

May 3, 2017

An Agreement between the IAEA and the Government of the Islamic Republic of Pakistan for the Application of Safeguards in Connection with the Supply of Two Nuclear Power Stations from the People's Republic of China – Karachi Units 2 & 3 – was signed today in Vienna by IAEA Director Yukiya Amano and Ambassador Ayesha Riyaz of Pakistan.

The safeguards agreement was approved by the IAEA Board of Governors in March 2017. The agreement entered into force upon its signature on 3 May 2017.



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The IAEA currently applies safeguards to a number of nuclear reactors in Pakistan under safeguards agreements concluded between 1962 and 2017.

<https://www.iaea.org/newscenter/news/signing-of-a-safeguards-agreement-with-pakistan>

[Return to top](#)

The Diplomat (Tokyo, Japan)

### **An Indian Nuclear-Capable Ballistic Missile Test Failed Shortly After Launch. What Happened?**

By Ankit Panda

May 5, 2017

*India will be looking to get to the bottom of what caused an Agni-2 MRBM to fail early in flight in user-testing.*

On Thursday, India sought to test one of its Agni-II nuclear-capable medium-range ballistic missiles. The user-trial, which took place on Abdul Kalam Island off India's eastern coast on Thursday, failed, according to sources who spoke to the Press Trust of India. "The two-stage, solid-fueled missile was just half a kilometer into its initial flight trajectory when things went awry. The mission had to be aborted," one source noted. The Agni-II, first tested by India's Defense Research and Development Organisation, has been a cornerstone of India's strategic nuclear forces since the mid-2000s.

India has seen its fair share of missile tests recently, most notably with the Nirbhay cruise missile program as my colleague Franz-Stefan Gady has explained, but an Agni-II failing a user-trial may be a source of concern. At this point, with neither the Indian Department of Defense or the Defense Research and Development Organisation having made any comment or released any further information, there's little to go on but the anonymously sourced comment. Still, given what little we know about this test and the Agni-II, there are a few possible explanations for what went wrong.

If it is true that the missile "went awry" just 500 meters or so into its boost phase, that would represent a fairly significant failure. The Agni-II's range is thought to be in the range of 2,000 to 3,000 kilometers, putting it at the higher end of what the United States Department of Defense would classify as a medium-range ballistic missile. It is a two-stage system that uses solid propellant. India's Agni-II inventory has seen iterative improvements over the years, focusing mostly on improving the system's guidance and accuracy. A user-trial failure at a later phase in the flight would suggest perhaps some sort of guidance failure.

A failure early in the missile's boost phase could also suggest that the particular unit chosen for testing suffered from cracks or gaps in the solid propellant grain, which would allow for a build-up of pressure upon ignition and, ultimately, failure. Scanning for these sorts of deficiencies requires equipment, including industrial x-ray scanners, that India only recently developed indigenously after being unable to import scanners from abroad. Various conditions — ranging from sharp temperature changes to stress in transportation

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— could have affected the propellant grain of this Agni-II, which could have been in storage for more than a decade.

It's worth recalling that the Agni-II has seen failures before, though in developmental testing, and some critics have noted that the missile was inducted into India's nuclear forces after insufficient testing. A failed nighttime test of the system in 2009 saw its successful boost, ascent, and separation of the second stage, with the failure ultimately coming down to guidance. Given the system's age, however, if the problem that caused the latest test comes down to poor propellant casting early on in India's missile development, New Delhi will no doubt be looking to discover what portion of its existing solid fuel missiles may suffer from similar issues.

Ultimately, this latest failure could have come down to a fluke, but that's likely not an assumption India's Strategic Forces Command will adopt willingly. Even if the remainder of India's stockpile may stand in good stead, the SFC will be looking for assurance that these missiles can perform when needed. The public perception of the failed test will also be worth watching; a successive failure could raise wider concern about the health of India's strategic deterrent. One need only look at the United Kingdom's public debate surrounding a Trident II D5 test failure for a reminder of how things can spiral. It turns out that aggregate failure rates for the Trident over decades remain within acceptable ranges. Given the comparatively younger lifespan of the Agni-II, India will no doubt be looking to get to the bottom of this matter.

<http://thediplomat.com/2017/05/an-indian-nuclear-capable-ballistic-missile-test-failed-shortly-after-launch-what-happened/>

[Return to top](#)

AFRICA

Zambia Daily Mail Limited (Lusaka, Zambia)

### **Zambia wary of mass destruction weapons**

Author Not Attributed

May 9, 2017

Minister of Defence Davis Chama says Zambia will always co-operate with other countries in ensuring that weapons of mass destruction do not find themselves in the hands of terrorists.

And Mr Chama said Zambia has demonstrated full commitment to supporting the work of the Organisation for the Prohibition of Chemical Weapons (OPCW) by clearing its arrears to the establishment in full.

Mr Chama said he is aware that most countries in the Southern Africa region, Zambia inclusive, have faced challenges in implementing and adhering to provisions of the Chemical Weapon Convention.

He was speaking in Lusaka yesterday when he officially opened a five-day planning and coordination meeting for the project to strengthen assistance and protection of Southern African Development Community (SADC) member states against chemical incidences.



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“In order to demonstrate Government’s commitment to support the work of the OPCW, I am glad to announce that Zambia has now fully cleared all its arrears to the OPCW. In line with our obligations under the Convention, Zambia will in future ensure that it pays its assessed contributions on time,” Mr Chama said.

Mr Chama is pleased that the programme for the meeting will include a public lecture at the University of Zambia to sensitise people on the threats of chemical weapons in Africa.

He said like many other countries in the SADC region, Zambia does not develop, manufacture, stockpile, transfer or transport chemical weapons.

Mr Chama, however, said threats of chemical weapons finding themselves on the region’s soils are real.

The minister also commended OPCW director general Ahmet Üzümcü for his tireless efforts in fostering peace and security under the general framework of international disarmament and non-proliferation of weapons of mass destruction around the world over the last 20 years.

SADC secretariat representative Ricardo Afonso said the meeting will endeavour to come up with a project which will ensure that the region is protected against chemical incidences.

<https://www.daily-mail.co.zm/zambia-wary-of-mass-destruction-weapons/>

[Return to top](#)

The Hill (Washington, DC)

### **Nuclear Weapons Have Saved Millions Of Lives, But That Could Easily Change**

By Peter Pry

May 10, 2017

Americans hate nuclear weapons, and those who think about them. This I know from a professional lifetime as one who thinks about nuclear weapons, strategy, and warfare.

Philosophically, weapons of mass destruction are antithetical to the ethos of democratic societies deriving their legitimacy from the people, where government exists to serve the people, where the most precious jewel is the lives of the people. Nuclear weapons, that threaten mass destruction of the people, is so noxious in our society that almost no one wants to think about them—and very few do.

In contrast, totalitarian and authoritarian states are proud of their nuclear firepower and celebrate nuclear weapons. Russia, China, and North Korea parade nuclear missiles in their streets. They broadcast TV documentaries about winning nuclear wars, almost always against the United States.

Military dictatorships and societies ruled by iron-fisted elites, where the dictators or their ideology is the most precious jewel, where the people are considered expendable—such societies love nuclear weapons. Even their peoples love The Bomb. They never seem to tire of nuclear missile parades and civil defense drills.

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Refusing to think about nuclear weapons and warfare will not make the threat go away. Pretending to abolish nuclear weapons through arms control, as the West has been trying to do since 1945, is just another way of not thinking.

We should have learned by now nuclear weapons are here to stay, a permanent fact of international life. The bad guys do not want to ban their bomb. They will encourage us to ban our bombs, but keep theirs.

Pretending that nuclear strategy is Strangelovian, an evil necessity to be tolerated among a small group of bespectacled weirdos like myself—but not central to national security and real statesmanship—is yet another way of not thinking.

In fact, nuclear weapons are the most formidable military technology existing in the modern world. They are the most powerful piece on the geopolitical chess board.

Nuclear weapons are central to, and the foundation of, our national security.

Colin S. Gray correctly observed, during the height of the Cold War, that nuclear weapons are so important they overshadow everything in war, peace, and diplomacy. Gray understood then, as we must now, that nuclear weapons are so powerful they shape the mental geography of international relations, and influence war, diplomacy, and peace—merely by existing.

Thus, since 1945, every war fought involving a nuclear-armed power or their allies has been a nuclear war. All diplomacy involving nuclear-armed powers or their allies has been nuclear diplomacy. Since 1945, when there has been peace, it has been nuclear peace.

Since 1945, the greatest U.S. victories and greatest U.S. defeats have been nuclear victories, and nuclear defeats:

Nuclear victory looks like the 200,000 casualties of Hiroshima and Nagasaki. But also like Japan surrendering on the deck of the USS Missouri, sparing over 1,000,000 casualties expected from invading their home islands, and ending World War II.

Nuclear victory looks like President Dwight Eisenhower threatening to use the U.S. advantage in tactical nuclear weapons to end the Korean War with an Armistice.

Nuclear victory looks like President John F. Kennedy, armed with a 5-to-1 advantage in ICBMs, going eyeball to eyeball with Soviet Premier Nikita Khrushchev, forcing the USSR into a humiliating retreat during the Cuban missile crisis.

Nuclear defeat looks like President Nixon's retreat from South Vietnam. According to presidential advisor Rodger Swearingen, President Lyndon Johnson was afraid to invade, occupy, and liberate North Vietnam—the only way to win the conflict—fearing a nuclear war with China.

Nuclear victory looks like deterring a Soviet invasion of Western Europe—despite the USSR's vast numerical advantages in tanks, aircraft, artillery, and troops—and keeping the peace for 45 years.

Nuclear victory looks like winning the Cold War with the disintegration of the Warsaw Pact and the collapse of the USSR without a thermonuclear World War III, defeating the most powerful totalitarian empire in history—peacefully.

Nuclear defeat looks like Russia annexing the Crimea without firing a shot and torturing Ukraine for three years to undermine NATO. Under President Clinton's Bucharest Agreement, Ukraine surrendered hundreds of nuclear weapons on its territory to Moscow,

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in exchange for security guarantees from Washington and London, that have proven worthless.

Nuclear defeat looks like President Obama's nuclear deal with Iran, and eight years of appeasement of Iranian aggression against U.S. allies in the Middle East.

Nuclear defeat will look like a North Korean electromagnetic pulse (EMP) attack that blacks-out America and ends our civilization. Or terrorists nuking a city. Or Russian or China rolling the dice on a nuclear first strike.

These or other nuclear nightmares are more likely to happen if we do not think—and act.

Vice Admiral Robert Monroe has called for reviving the U.S. Defense Nuclear Agency to resume serious work on understanding and mitigating nuclear weapon effects.

The Congressional EMP Commission has called for hardening the U.S. electric grid and other life-sustaining critical infrastructures against EMP and cyber-attack.

President Trump wants to modernize the U.S. nuclear deterrent.

Do it.

<http://www.knoxnews.com/story/opinion/editorials/2017/05/02/editorial-y-12-dog-firm-lost-explosives-trust/100844428/>

[Return to top](#)

The Livermore Independent (Livermore, CA)

### **Nuclear weapons are a threatening reality**

Author Not Attributed

May 11, 2017

Robert Gallucci spoke at Livermore's Bankhead Theater last month, reminding us of the all-too-real dangers of a world in which nuclear powers are run by inexperienced and aggressive leaders.

Much attention has been given to the antics of North Korean leader Kim Jong Un, but as Ambassador Gallucci pointed out, that country has only about a dozen nuclear weapons while Russia has aimed thousands at us for decades.

Today, Russia and America have far fewer nuclear weapons than they did during the Cold War. However, Russia is far more aggressive than it has been in years and even embraces a nuclear first strike strategy against the U.S. mainland. As for the U.S., it can no longer be viewed as a reliably stabilizing force.

The administration goes back and forth, first threatening Kim Jong Un and then praising him. Japan, South Korea and Germany are treated as if they were cheating business partners rather than supportive allies, raising the question of whether they should develop their own nuclear weapons instead of relying on our nuclear "umbrella."

It is an unhappy sign of the times that the relationship between the U.S. and the old Soviet Union, when the two antagonists engaged in arms control and confidence-building military

Issue No.1263, 12 May 2017

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exchanges, now seems almost quaintly stable. It is a hard truth, but one we must face, that the world today is more dangerous than it has been in many years.

[http://www.independentnews.com/editorials/nuclear-weapons-are-a-threatening-reality/article\\_8cccf75e-35d7-11e7-899b-9bdf8d64e176.html](http://www.independentnews.com/editorials/nuclear-weapons-are-a-threatening-reality/article_8cccf75e-35d7-11e7-899b-9bdf8d64e176.html)

[Return to top](#)

The Straits Times (Singapore)

## **US Military Action Against Pyongyang Could Undermine Trust**

By Bilhari Kausikan

May 11, 2017

*Options for dealing with North Korea are limited. US military action to stop Pyongyang's nuclear advance is unconscionable. Could North-east Asia descend into a nuclear arms race instead? This is an edited excerpt of a speech by Ambassador-at-large Bilahari Kausikan at a conference on United States policy towards China and the region, at Victoria University in Wellington, New Zealand, last Thursday.*

United States-China relations are complex and encompass both cooperative as well as competitive elements. It is not a simple zero-sum game. The issue that best illustrates the complexities is North Korea.

US President Donald Trump has justified the easing of his approach towards China by the need to enlist Beijing's help to stop Pyongyang's nuclear and missile programmes. China certainly has an important role to play, but while American and Chinese interests overlap, I do not think their interests are similar and neither has sufficient leverage to stop North Korea.

Pyongyang has the initiative and has no reason to relinquish it. We are on the cusp of a very significant shift in the North-east Asian strategic equation.

North Korea does not yet have nuclear-armed missiles capable of reaching the continental US; it has probably not yet weaponised its nuclear devices to make them deliverable by missiles. But Pyongyang is determined to acquire survivable, nuclear-armed ICBMs (intercontinental ballistic missiles).

While electronic interventions such as those that then US President Barack Obama reportedly ordered three years ago may delay missile development, I do not think they will deflect Pyongyang from its goal.

Pyongyang is convinced that the Democratic People's Republic of Korea (DPRK) and the current regime will not survive unless it acquires survivable ICBMs. Dissuading a state from proceeding with a course of action it considers existential is impossible.

Pyongyang must be persuaded that the cost of proceeding is higher than the cost of not proceeding. But if you believe that the cost of not proceeding is the end of your state and regime, then you might as well go ahead because the cost of proceeding will always be lower.

The failure rate of North Korean missile tests seems higher since these interventions were said to have begun. But it has also conducted successful tests.





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Pyongyang will persist and it will eventually succeed - unless the US and its North-east Asian allies are willing to fight a full-scale war to stop it.

I do not think they are prepared to pay the price. China certainly does not want war. Since the DPRK already has nuclear devices, all it has to do is detonate them on its own territory near the demilitarised zone, which is only about 60km from the South Korean capital Seoul, to raise the cost of war to unacceptable levels. It could conceivably also do so on the border with China. Even if such extreme contingencies could be pre-empted, Pyongyang will certainly retaliate in any way it can, and there is no way of ensuring that all of its retaliatory capabilities can be simultaneously neutralised.

Seoul is within range of conventional artillery, and South Korea and Japan are within range of North Korea's existing missiles. Japanese Prime Minister Shinzo Abe has warned that North Korean missiles could be armed with sarin, a nerve agent. Unilateral military action by Washington would thus impose serious direct risks on its allies at a time when the US itself does not yet face a direct threat.

If the US acts unilaterally, it will, in effect, force its allies to immediately bear the very heavy costs of mitigating threats to itself that are still theoretical or putative as far as the US is concerned. This would cause grievous political damage and could permanently undermine trust in America well beyond North-east Asia.

Only if North Korea already had nuclear-capable ICBMs and there was credible intelligence that a launch targeted at the US was imminent, would unilateral action be politically justifiable or at least understandable.

But the point is to prevent North Korea from acquiring such a capability in the first place. Sanctions do not work. North Korea is already one of the most heavily sanctioned countries in the world. Yet, the speed of its advances in missile and nuclear technology has surprised experts. There is room for additional sanctions and for tightening the implementation of existing sanctions. But this will, at best, only buy time.

### **WHEN PYONGYANG CAN HIT SAN FRANCISCO**

Time for what? North Korea is a brutal but functioning state. Repeated predictions of its demise have proven premature. We cannot assume that it will conveniently collapse before it achieves its goal.

China cannot stop North Korea.

Beijing is certainly very angry with Pyongyang, whose nuclear and missile development programmes have created new risks for China, for example, through the deployment of the US missile shield Thaad (Terminal High Altitude Area Defence) in South Korea. Beijing has signalled its displeasure by stopping coal imports and allowing an unprecedented public debate on whether it should continue with its present approach towards North Korea.

But these are only symbolic actions. China may well go along with further sanctions, but I think Beijing's actions will always fall short of being effective because anything Beijing does that would inflict enough pain to change Pyongyang's behaviour would also jeopardise the stability of the regime.

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At a time when the Chinese Communist Party (CCP) is itself feeling insecure, can Beijing be complicit in the destruction of another and neighbouring Leninist system without giving the Chinese people inconvenient thoughts about their own system? This is an unacceptable risk. The most vital of all the CCP's interests is its own survival. From this perspective, a nuclear North Korea is the less bad option.

Foreign policy professionals in the Trump administration know this. But statements by US Secretary of State Rex Tillerson and Mr Trump himself nevertheless seem to display a level of expectation that China is bound to disappoint. How the administration will react when disillusionment dawns is unclear.

### NO GOOD OPTIONS

So, what is to be done? There are no good options. Denuclearisation is a pipe dream. Any realistic approach must accept that the DPRK is here to stay and will eventually have a nuclear-capable ICBM.

One approach is to give Pyongyang what it essentially wants - an assurance of regime survival. This could be done by negotiating a US-DPRK peace treaty in return for a verifiable freeze on warhead and missile development. China will, I think, go along with such an approach.

This approach, however, carries two major uncertainties.

First, at what level of warhead and missile development would Pyongyang feel secure enough to agree to a freeze with robust verification measures?

Second, would such a deal be politically saleable in Washington, Tokyo and Seoul? Unfortunately, the two factors contradict each other: What makes Pyongyang feel secure would probably be politically unacceptable.

What is left is the means by which every nuclear-weapon state has hitherto been dealt with: deterrence. North Korea may be very bad, but it is not mad. It is rational. Once it has acquired the survivable ICBMs it believes are needed for regime survival, it can be deterred since Pyongyang will then have no reason to court destruction.

However, deterrence has its own complications. When North Korea has nuclear-capable ICBMs able to threaten the US, the question is bound to be asked - will San Francisco be sacrificed to save Tokyo?

Since the answer is obviously "no", Tokyo will have to seriously consider its own nuclear options. Japan has the capability to develop an independent nuclear deterrent very quickly and has, in fact, been quietly developing this capability - with American aid and acquiescence - for 30 years or so.

North Korea nevertheless is more a catalyst than a cause. China is modernising its own nuclear forces and will sooner or later acquire credible second-strike capability vis-a-vis the US. Thailand may make this even more urgent. When China has credible second-strike capability, the same harsh logic will operate and may do so even before North Korea acquires nuclear-capable ICBMs. One way or another, therefore, American extended deterrence in North-east Asia will eventually be eroded.

The decision will be politically very difficult. But Japanese public opinion has changed very abruptly several times in modern Japanese history, and since the alternative is to accept subordination to China, I believe it is only a question of when and not whether Japan will become a nuclear-weapon state.

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I do not think the US is eager to see Japan become a nuclear-weapon state. Neither do I think that Japan is keen to become a nuclear-weapon state.

But, for both, this will eventually be the least bad option. Where Japan goes, South Korea must follow since Seoul is bound to wonder whether it will be sacrificed to save Tokyo.

A balance of mutually assured destruction in North-east Asia will not be a satisfactory situation for anyone. But it will not necessarily be unstable - in fact, it may well be more stable than the current situation - and it may be of some small consolation to Washington, Tokyo and Seoul that the implications for Beijing are somewhat worse.

A balance of mutually assured destruction will freeze the status quo and is an absolute obstacle to Beijing's goal - which is implicit in the essentially revanchist narrative of the "Great Rejuvenation" of China by which the CCP legitimates its rule - of recreating an East Asian order with China at its apex.

If the "American Century" must eventually end, neither will its successor be unambiguously an "Asian Century" or a "Chinese Century". There will be no clear denouement, and we will all have to learn to adapt to structural uncertainty and navigate it for the foreseeable future.

<http://www.straitstimes.com/opinion/us-military-action-against-pyongyang-could-undermine-trust>

[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.

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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.

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