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Feature Report

“NTI Releases Assessment of New Russian Nuclear Weapon Delivery Systems”. By Jill Hruby.
Published by NTI; Nov. 13, 2019

https://media.nti.org/documents/NTI-Hruby_FINAL.PDF

Washington, DC – The first detailed, exclusively open-source assessment of the five new nuclear weapon systems announced by Russian President Vladimir Putin was released today by the Nuclear Threat Initiative (NTI), alongside a new analysis underscoring the need to extend the New START Treaty based on the report’s findings.

Authored by Jill Hruby, NTI’s inaugural Sam Nunn Distinguished Fellow and a former director of Sandia National Laboratories, the report, *Russia’s New Nuclear Weapon Delivery Systems: An Open-Source Technical Review*, provides insight into the technical characteristics, deployment schedule, and military objectives for each of the five systems, plus one additional system that may be nuclear capable in the future.

As the strategic relationship between the United States and Russia continues to deteriorate, “understanding and following the development of the new Russian nuclear- weapon delivery systems is important for future arms control agreements and strategic stability policy decisions,” writes Hruby.

“The development of these weapons systems at this particular time, as well as some of the nuclear policies the United States is pursuing, should be a wake-up call for action on renewing dialogue and cooperation with Russia to prevent nuclear catastrophe,” NTI co-chairs Ernest J. Moniz and Sam Nunn write in the foreword to Hruby’s report.

Through extensive research, Hruby concludes that technical and safety issues associated with some of Russia’s new weapon delivery systems may delay their development and deployment beyond what has been reported to date in other open sources. The delays “may offer some additional time for U.S. and Russian leaders to re-engage and renew crucial dialogue and cooperation,” Moniz and Nunn wrote. “They should do so now. Before it’s too late.”

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NUCLEAR WEAPONS

Aiken Standard (Aiken, S.C.)

MOX Contractor, NNSA Reach Widespread \$186M Settlement

By Colin Demarest

Nov. 19, 2019

The National Nuclear Security Administration and the firms behind the shuttered Mixed Oxide Fuel Fabrication Facility at the Savannah River Site have reached a multimillion-dollar settlement agreement, smoothing over and resolving lingering contract and closeout discrepancies.

The sweeping agreement is valued at \$186 million, according to information reviewed by the Aiken Standard. An announcement from the NNSA on Tuesday did not include that figure.

The same information reviewed by the Aiken Standard describes the settlement as "the best value to the American taxpayer," among other things. A bevy of MOX-related lawsuits had been filed with the U.S. Court of Federal Claims since 2015, about three years before the incomplete project was axed.

Legal disputes, according to the afternoon announcement, impeded the federal government's pursuits.

More specifically, the NNSA said the new arrangement enables the semiautonomous agency to better follow through on plutonium pit production – a nuclear weapons mission – and plutonium disposition plans known as dilute-and-dispose.

"Now we can fully focus on our proposal to repurpose MOX for plutonium pit production – a capability the United States needs to maintain a safe, secure and reliable nuclear deterrent," NNSA chief Lisa Gordon-Hagerty said in a prepared statement.

Gordon-Hagerty is also the U.S. Department of Energy's under secretary for nuclear security.

"And while we move forward with plans to repurpose the MOX facility, NNSA remains committed to removing surplus plutonium from South Carolina using the proven dilute-and-dispose method," she continued.

Metric tons of plutonium are currently kept at the Savannah River Site, about 30 minutes south of Aiken.

Dilute-and-dispose is the MOX alternative. It involves mixing plutonium with special inert material and, in this case, sending it to the Waste Isolation Pilot Plant in New Mexico for long-term storage. Both U.S. Secretary of Energy Rick Perry and Gordon-Hagerty have described it as the better path forward – roughly half the price and more efficient, for example.

The NNSA, the Energy Department's weapons-and-nonproliferation arm, terminated the MOX project late last year following a legal back-and-forth. In the ensuing months, more than 1,000 layoff notices were issued.

Billions of dollars and more than a decade of work had been invested in the unfinished nuclear fuel facility before it was scuttled. The cost of the project had ballooned, and the timeline had bloated. The federal government has said the MOX plant would have been completed in 2048 at a cost of \$17 billion.

"The agreement represents an opportunity to move forward with solutions for surplus plutonium disposition and options for plutonium pit production that address the needs of the nation at a more reasonable cost," the information reviewed by the Aiken Standard states.

In May 2018, the NNSA and the U.S. Department of Defense recommended transforming the MOX facility into a production hub for plutonium pits – nuclear weapon cores or triggers. At least 50 pits per year would be produced there, at the Savannah River Site, and another 30 per year would be produced in New Mexico at a beefed up Los Alamos National Laboratory.

Eighty pits per year are needed by 2030, according to the 2018 Nuclear Posture Review, a leading Pentagon nuclear policy document. The pits are needed to refresh the nation's nuclear weapons, various officials have said.

MOX Services was the lead contractor at the MOX project. MOX Services and its parents are specifically named in the NNSA announcement.

https://www.aikenstandard.com/news/mox-contractor-nnsa-reach-widespread-m-settlement/article_309abdc0-0b06-11ea-be6a-27f1e08825b7.html

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Defense News (Washington, D.C.)

US Air Force Leak of Boeing's Proprietary Info Not Driving Bid Decision on ICBM Replacement

By Valerie Insinna

Nov. 17, 2019

DUBAI, United Arab Emirates — The U.S. Air Force's leak of Boeing's proprietary information to competitor Northrop Grumman was not a major factor in the company's decision to forgo the Ground Based Strategic Deterrent competition, the head of Boeing's defense business said on Nov. 16.

"Obviously, in any procurement process, you see instances where data is disclosed. Clearly that occurred during the process," Leanne Caret, president and CEO of Boeing Defense, Space and Security, said during a news conference ahead of the Dubai Airshow. "I don't want to leave any impression though that that was the sole reason for why we did not bid. It was more to do with the structure of the source selection, and we do believe there are ways to work through that."

Boeing announced in July that it would not bid on the GBSD program's engineering and manufacturing development phase in December due to what the company believes is an unfair advantage held by Northrop Grumman, the sole company left in the running for the contract. The issue, Caret specified in letters sent to Congress this summer, is that Northrop's acquisition of Orbital ATK — one of only two potential manufacturers of solid rocket motors — could allow Northrop to offer a more competitively-priced proposal.

But Rep. Adam Smith, the Washington-state Democrat who chairs the House Armed Services Committee, revealed last week that the Air Force had accidentally shared Boeing's proprietary information with Northrop and that the incident caused Boeing not to bid on the program, according to Aviation Week.

While the transfer of proprietary data from one company to its competitor is rare, it has occurred in several high-stakes programs. For example, as Boeing and EADS — now known as Airbus — battled

for the KC-X tanker contract in 2010, an Air Force clerical error resulted in the companies receiving proprietary information from each other's bid.

Although Caret declined to comment on the nature of the breach, an industry source told Defense News that the information shared with Northrop did not raise deep concerns from Boeing leadership that the company would be disadvantaged going forward with the competition.

"This stuff happens," the source said. "Nobody likes it, whether it's the acquisition officials or the companies, but it happens. It's how you deal when it happens."

However, the source noted that after Boeing was notified that proprietary information had been accidentally sent to Northrop, the Air Force did not immediately share what data had been transferred and what had been done to mitigate the leak.

Over the past four months, Boeing has mounted a concerted effort in the hopes of persuading the Air Force to either make changes to its current GBSD acquisition strategy or to mandate a joint Boeing-Northrop bid that would allow both companies to have work on the program.

"We've continued to make certain that we've provided opportunities that if they would make those changes, would allow us to bid. It is my deepest hope that we see those changes made because there is nothing more that I would like than to be able to bid on this program," Caret said.

However, Caret acknowledged that the Air Force has thus far shown little interest in changing its acquisition plan, citing the service's recent decision to stop funding Boeing's participation in the risk-reduction portion of the GBSD program.

"I think that gives you a little insight as to where we stand," she said.

<https://www.defensenews.com/digital-show-dailies/dubai-air-show/2019/11/17/air-force-leak-of-proprietary-info-not-driving-boeings-no-bid-decision-on-gbsd/>

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Homeland Preparedness News (Washington, D.C.)

NTI Releases New Report on Russia's Nuclear Weapons Systems

By Dave Kovaleski

Nov. 15, 2019

The Nuclear Threat Initiative (NTI) released a report assessing the five new nuclear weapon systems announced by Russian President Vladimir Putin.

Based on its analysis, NTI called for an extension of the New Strategic Arms Reduction Treaty or START Treaty.

The report, called Russia's New Nuclear Weapon Delivery Systems: An Open-Source Technical Review, looks at the technical characteristics, deployment schedule, and military objectives for each of the five systems, along with one additional system that may come out in the future.

Author Jill Hruby, NTI's Sam Nunn Distinguished Fellow and a former director of Sandia National Laboratories, said the strategic relationship between the United States and Russia continues to deteriorate. Thus, an understanding of the new Russian nuclear weapon delivery systems is important for future arms control agreements and policy decisions.

"The development of these weapons systems at this particular time, as well as some of the nuclear policies the United States is pursuing, should be a wake-up call for action on renewing dialogue and

cooperation with Russia to prevent nuclear catastrophe,” NTI co-chairs Ernest Moniz and Sam Nunn wrote in the foreword to Hruby’s report.

Hruby found that technical and safety issues may delay the development of Russia’s new weapon delivery systems. Moniz and Nunn said this presents a window of opportunity to “re-engage and renew crucial dialogue and cooperation.”

The new START treaty is set to expire in 2021 but could be extended to 2026.

“Extending New START until February 2026 would preserve numerical limits on and verification of Russian strategic systems, including the two new ones expected to be deployed before 2026,” NTI experts Mark Melamed and Lynn Rusten wrote in an accompanying analysis. “It is critical to examine how the risks of technological advances can be mitigated and their benefits realized, particularly when it comes to avoiding the existential threat of nuclear war.”

<https://homelandprepnews.com/stories/39753-nti-releases-new-report-on-russias-nuclear-weapons-systems/>

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Seapower Magazine (Arlington, Va.)

Pentagon Missile Defense Chief Cites Threats from Maneuverable Missiles, Hypersonic Weapons

By Otto Kreisher

Nov. 20, 2019

ARLINGTON, Va. — With the emergence of peer military competitors, the missile threat is evolving toward the use of maneuverable ballistic and cruise missiles and hypersonic weapons — all of which “drives you into the world of high speed,” Vice Adm. Jon A. Hill, director of the Defense Department’s Missile Defense Agency (MDA), told a gathering of naval engineers on Nov. 20.

“Speed is a big deal. We are driven by the threat, and it is amazing what we’re up against. ... It is stunning. What also is stunning is how the threat is changing,” Hill added during the American Society of Naval Engineers symposium here in Arlington.

Hill noted that, when he took over MDA, the agency was focused on ballistic missiles. But new threats are emerging from air-launched ballistic and cruise missiles that can maneuver in different phases of their flight and “are capable of higher and higher speeds,” he said. “It’s a different world, and the agency will have to adjust.”

And regarding another emerging threat from hypersonic weapons, he added: “We’re working very diligently to understand everything” needed to counter these weapons.

Although MDA is responsible for defending the nation from missile threats, Hill emphasized that “everything we’re doing for the fleet today is incredibly important. ... Our mission is providing a defensive capability, taking care of our forward deployed forces, our friends and allies.”

And, he added, “defense itself is deterrence ... as a cost-imposing measure on the adversary.” He said adversaries are spending so much on developing cruise missiles “because we have incredible capability” against ballistic missiles. Hill emphasized that missile defense is a joint effort across

multiple U.S. military branches, citing the extensive work to integrate U.S. Air Force land and space sensors and the Army's THAAD and Patriot missile defense programs with the Navy's Aegis-based defenses.

Hill said his top priority is "sustainment, taking care of what we have now," and maintaining readiness, which consumes 60% of MDA's budget. The second priority is building missile defense capacity, citing the expansion of the ground-based interceptors in California and Alaska, new space-based and land-based sensors, including those in Japan and Korea, and future Flight III Arleigh Burke-class destroyers.

With the new missile threats, including hypersonics, Hill emphasized the need for designing and engineering space capabilities for missile defense. "There are things you can only see from space."

<https://seapowermagazine.org/pentagon-missile-defense-chief-cites-threats-from-maneuverable-missiles-hypersonic-weapons/>

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US ARMS CONTROL

Military Times (Vienna, Va.)

US to Europe: Fix Open Skies Treaty Or We Quit

By Joe Gould and Aaron Mehta

Nov. 21, 2019

WASHINGTON — NATO allies worried U.S. President Donald Trump will abandon the Open Skies Treaty have been told the administration views the arms control agreement as a danger to U.S. national security, and that unless those nations can assuage such concerns, the U.S. will likely pull out, Defense News has learned.

At a meeting in Brussels last week, Trump administration officials laid out for the first time a full suite of concerns with the treaty and made clear they were seriously considering an exit. The agreement, ratified in 2002, allows mutual reconnaissance flights over its 34 members, including the U.S. and Russia.

According to one senior administration official, the U.S. delegation presented classified intelligence to the foreign officials to explain its concerns, chiefly that Russian forces are "misusing the treaty in their targeting of critical U.S. infrastructure," and to request help from allies to address those concerns if the treaty is to be saved.

"This is a U.S. position — that we think this treaty is a danger to our national security. We get nothing out of it. Our allies get nothing out of it, and it is our intention to withdraw, similar to what we did with [the Intermediate-Range Nuclear Forces Treaty]. From our perspective, the analysis is done," the senior Trump administration official said. "The Europeans got that. It was a splash of cold water on their faces."

The NATO allies did not reach an agreement at that meeting, the official noted.

Sources with several of these allied countries told Defense News that the Trump administration has indicated over the last month that there likely won't be a final decision on the treaty before late January. In the interim, they said the U.S. sent a number of NATO nations a diplomatic

communication earlier this month about the pact, essentially asking treaty members to make the case for its survival.

The U.S. outreach comes amid unusually strong and coordinated pressure from European allies inside and outside of NATO upon both the administration and Congress to remain in the treaty — and before a planned NATO leaders summit in London next month.

Allies generally argue the treaty is a valuable channel for transparency and dialogue between Russia and the United States, the world's top two nuclear superpowers.

The meeting was meant to send a strong signal about the White House's position, as the U.S. delegation included mid-level representatives from the Defense Department, Joint Chiefs of Staff, State Department and National Security Council. Broadly speaking, the American delegation argued Russian aggression since 2014 and the proliferation of high-quality commercial satellite imagery since 2002 had rendered the treaty obsolete.

The Trump administration's efforts to solicit feedback from allies also seemed to be a response to criticism from Congress and allies that the president has a history of acting unilaterally when scrapping multilateral accords. Lawmakers and allies were caught off guard, for example, when the Wall Street Journal reported in October that Trump signed a document signaling his intent to withdraw from Open Skies. Weeks later, the administration had yet to make public its intentions.

A U.S. exit from the treaty would further erode the post-Cold War arms control architecture, after the U.S. and Russia walked away from the 1987 Intermediate-Range Nuclear Forces Treaty in August. The last remaining major nuclear arms control treaty between the U.S. and Russia, New START, expires in 2021.

European support for Open Skies so far has included a joint verbal demarche, or diplomatic protest, to the National Security Council from a number of Nordic countries, and another joint demarche from Germany, the U.K. and France; Germany's ambassador to the U.S. reportedly also made a visit to the White House to argue on the treaty's behalf.

Sweden, a particularly active participant in the fight to save Open Skies, sent a letter from its defense minister, Peter Hultqvist, to U.S. Defense Secretary Mark Esper, expressing "deep concern."

"A well-functioning Open Skies Treaty contributes to the ability to hold states, including the Russian Federation, accountable for breaches against the norms and principles that underpin the European security architecture. The Treaty is vital as one of very few remaining confidence and security building measures," Hultqvist wrote in the Oct. 24 letter, obtained by Defense News.

"One aspect of maintaining the Treaty is to work with other participants to curtail any violations. In our view, it important that violations of others not be taken as grounds for withdrawing from the Treaty altogether," Hultqvist wrote.

American and European complaints

Critics of the treaty have complained that Russia restricts flights near the Russian exclave of Kaliningrad and the Georgian border-conflict regions of South Ossetia and Abkhazia. The U.S. responded with flight restrictions over parts of Hawaii and Alaska.

However, in Brussels, Trump administration officials challenged NATO ally Germany's plan to test a new infrared sensor in a flight over the United States in 2020, arguing it would open the door for Russia to do the same. Russia's Tupolev Tu-154 already progressed from wet film to a digital electro-optical sensor in 2017, which at the time raised concerns within the Pentagon and the U.S. intelligence community.

Another U.S. concern is a claim that there's no way under the Open Skies Treaty for signatories to know if Russia is surreptitiously gathering intelligence on U.S. forces while en route to its scheduled overflights. For example, the U.S. was concerned Russia's aircraft would focus its sensors on American forces in Poland while flying to Germany. (Cameras on Open Skies aircraft are supposed to be covered during transit flights between the host nation and the area being surveilled.)

Following the meeting in Brussels, it was unclear how NATO allies might work to address the administration's concerns. Several sources from treaty nations told Defense News this week they believe the administration's efforts to solicit feedback from Europe offer a chance to convince the White House to remain a signatory to the treaty.

Others were more skeptical. One senior European official said the "big question" is whether the administration's outreach represents a good faith effort, or whether it's laying the groundwork to blame allies for not meeting the administration's demands.

"We heard at one point they had already made up their mind, and at one point there was word they had signed a withdrawal. So it's hard to say if it's for show or not," the European official said.

One of the main arguments in favor of Open Skies is that it helps maintain Europe-wide security and serves as a rare communications channel between Russia and other signatories. But because arguments based on maintaining global norms and respecting arms control pacts are seen as ineffective with the Trump administration, the Europeans are likely to push on a different lever.

"It's an arms control treaty, and we don't have too many of those left. [A U.S. exit] would give a propaganda victory to Russia," the European official said. "There's really only one argument that we think might work with the administration, and that's the benefits we get from the treaty from an intel perspective."

Yet, the intelligence benefits are under debate. Opponents argue that commercial imaging satellites are readily available as a superior alternative to flyovers, and that allied militaries can always share more advanced intelligence as they fit.

Advocates see value in airborne assets that can fly quickly and below cloud level; they question how efficiently America or the U.K. can share intelligence with all Open Skies signatories, which includes a number of non-NATO nations.

Jim Townsend, a former Pentagon official now with the Center for a New American Security think tank, was skeptical that, even if the intel is valuable, this argument would work on the Trump administration.

"If they tell the administration they need it because they need the intel, the administration will say: 'So you're freeloading on us again with Open Skies. Buy your own damn satellites or aircraft,'" Townsend said. "That's a losing argument with these guys."

Shifting battleground

With future U.S. participation in the treaty an open question, Congress is weighing in, though members of Trump's own political party have been split over the issue.

For flights by the United States, the Air Force uses two deteriorating Boeing OC-135B aircraft, which are assigned to Offutt Air Force Base, Nebraska. Congress has debated whether to recapitalize those planes, but Trump's 2019 budget request included \$125 million for two new aircraft, with the Air Force eyeing two new commercial airliners that could be outfitted with the existing Digital Visual Imaging System used by Open Skies aircraft.

Democratic Rep. Emanuel Cleaver, a Helsinki Commission member, said Tuesday at a House hearing on Open Skies that Congress ought to devote more robust funding to support the treaty. "It's a little bit frightening that the U.S. is flying some hoopties in 2019," the Missouri congressman said.

Senate Strategic Forces Subcommittee Chairman Deb Fischer as well as Rep. Don Bacon, both Nebraska Republicans, support Open Skies. Last year, then-Defense Secretary Jim Mattis said in a letter to Fischer that the overflights were particularly useful after Russia's annexation of Crimea, adding that it is in America's "best interest" to stick with the pact because of information gathered about Russian activity in Ukraine.

"I have personally communicated to the White House my opposition [to ending the treaty], I'm on record about it," Bacon, a retired one-star general who commanded Offutt's 55th Wing from 2011-2012, told Defense News. "The problem is the administration has not said why it wants to pull out of it. If it merits, if it's a budget discussion, I want to hear where they're coming from."

On Monday, Bacon and Rep. Jeff Fortenberry, R-Neb., introduced bipartisan legislation that would "require the administration certify to Congress that exiting the treaty is in the best interests of U.S. national security, and develop a comprehensive strategy to mitigate against reduced military capability." The co-sponsors included Reps. Jimmy Panetta, D-Calif., and Alcee Hastings, D-Fla., who chairs the Helsinki Commission.

Meanwhile, Senate AirLand Subcommittee Chairman Tom Cotton, R-Ark., and Sen. Ted Cruz, R-Texas, last month introduced legislation to withdraw from Open Skies and to declassify to the maximum extent possible U.S. intelligence about how Russia exploits the treaty to undermine American national security. Cotton, a longtime opponent of the treaty, has said the money would be better spent on more urgent Air Force projects.

The House-passed version of the 2020 National Defense Authorization Act included language to support the treaty and prohibit a withdrawal, unless the administration certifies Russia has breached it, or that an exit is in America's best interest and other parties were consulted.

The White House has objected to the provision for impinging on the president's treaty authorities, but the Senate version did not include a similar provision. The House and Senate were still in negotiations this week to reach a final version of the bill.

<https://www.militarytimes.com/pentagon/2019/11/21/us-to-europe-fix-open-skies-treaty-or-we-quit/>

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The Hill (Washington, D.C.)

North Korea: We Won't 'Gift' Trump with Summit before Concessions

By Zack Budryk

Nov. 18, 2019

North Korean officials on Monday said that the nation will not agree to another sit-down between the country's leader, Kim Jong Un, and President Trump without something in return, according to The Associated Press.

The statement from North Korean Foreign Ministry adviser Kim Kye Gwan comes a day after Trump tweeted "You should act quickly, get the deal done. See you soon!" in a tweet addressing Kim.

“Three rounds of DPRK-U.S. summit meetings and talks were held since June last year, but no particular improvement has been achieved in the DPRK-U.S. relations ... the U.S. only seeks to earn time, pretending it has made progress in settling the issue of the Korean Peninsula,” Kim Kye Gwan said in a statement carried by the official Korean Central News Agency, using the acronym for North Korea’s official name.

The statement goes on to suggest North Korea will only meet with Trump if it is satisfied the meeting will offer more than a political win for the president.

“We are no longer interested in such talks that bring nothing to us. As we have got nothing in return, we will no longer gift the U.S. president with something he can boast of, but get compensation for the successes that President Trump is proud of as his administrative achievements,” Kim Kye Gwan said, according to the AP.

The statement comes shortly after Defense Secretary Mark Esper announced the cancellation of joint military exercises by South Korea and the U.S. in what he said was a gesture of “goodwill” toward the North.

North Korea received the announcement of the cancellation coolly, saying it would not return to the negotiating table unless the U.S. offered to end “hostile” policies toward the nation, citing a recent United Nations resolution condemning North Korean human rights violations as evidence of a U.S.-led attempt to isolate the nation.

Last week, North Korean negotiator Kim Myong Gil said the nation will not agree to a deal involving “matters of secondary importance” such as a potential formal declaration ending the Korean War, according to the AP.

<https://thehill.com/policy/international/asia-pacific/470882-north-korea-we-wont-gift-trump-with-summit-before>

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The Hill (Washington, D.C.)

Pompeo: US Ending Sanctions Waiver for Site Where Iran Resumed Uranium Enrichment

By Rebecca Kheel

Nov. 18, 2019

The United States is ending a sanctions waiver for civil-nuclear work at a site where Iran recently announced it was enriching uranium, Secretary of State Mike Pompeo announced Monday.

“The United States will terminate the sanctions waiver related to the nuclear facility at Fordow effective Dec. 15, 2019,” Pompeo told reporters at the State Department. “The right amount of uranium enrichment for the world’s largest state sponsor of terror is zero. Iran originally constructed Fordow as a fortified underground bunker to conduct secret uranium enrichment work, and there is no legitimate reason for Iran to resume enrichment at this previously clandestine site.”

“Iran should reverse its activity there immediately,” he added.

Pompeo’s announcement comes after Iran announced, and the International Atomic Energy Agency confirmed, that it had resumed uranium enrichment at its underground Fordow site in its latest breach of the 2015 nuclear deal.

The deal between Iran and other world powers allowed Fordow, a long-secret facility, to maintain centrifuges for research purposes, but banned enrichment activities there.

Iran has been steadily increasing its violations of the nuclear deal, which President Trump withdrew the United States from in 2018, in an effort to pressure the United States and Europe for sanctions relief. Iranian officials have maintained the violations are reversible should the relief come.

On Monday, Pompeo accused Iranian Supreme Leader Ayatollah Ali Khamenei of using “nuclear brinksmanship to extort the international community.”

“The United States rejects this approach completely, and call on all nations to do the same,” Pompeo said. “The only viable way forward is through comprehensive negotiations that address the full range of Iran’s threats in their entirety.”

Though Trump withdrew from the deal and reimposed sanctions that had been lifted under it, the administration granted sanctions waivers to allow Europe, China and Russia to cooperate with Iran on converting nuclear facilities to nonmilitary purposes. In addition to Fordow, the administration granted waivers for projects at Bushehr and Arak.

The administration renewed all three waivers at the end of October.

The administration has argued the waivers were necessary to maintain oversight over Iran’s nuclear work.

But Iran hard-liners in Congress have been increasingly pressuring the administration to revoke the waivers. Sens. Ted Cruz (R-Texas) and Lindsey Graham (R-S.C.) and Rep. Liz Cheney (R-Wyo.) introduced a bill last week to revoke the waivers.

“Iran is exploiting the civil-nuclear waivers from the Obama-Iran deal, which the Trump administration has continued to issue, to build up their nuclear program and buy time until the nuclear deal expires, leaving them with a full-blown unlimited civilian nuclear program,” Cruz said in a statement last week reissued hours before Pompeo’s Monday announcement. “Enough is enough. Now is the time to end the deal once and for all.”

<https://thehill.com/policy/defense/470962-pompeo-us-ending-sanctions-waiver-for-site-where-iran-resumed-uranium>

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COMMENTARY

The Strategist (Canberra, Australia)

The Coming Nuclear Crises

By Richard N. Haass

Nov. 19, 2019

Until just a few years ago, it looked as if the problem posed by nuclear weapons had been successfully managed, if not solved. American and Russian nuclear stockpiles had been reduced substantially from their Cold War highs, and arms-control agreements were in place that limited both intermediate- and long-range systems. But all of that could now come undone.

Progress over the last generation wasn't limited to the United States and Russia. Libya was persuaded to abandon its nuclear ambitions, Israel thwarted Iraqi and Syrian nuclear development, and South Africa relinquished its small nuclear arsenal. Iran signed the Joint Comprehensive Plan of Action, which constrained its ability to acquire many of the essential prerequisites of nuclear weapons. Most recently, the UN Security Council imposed tough sanctions aimed at persuading North Korea to give up its still modest and comparatively primitive nuclear-weapons program, clearing the way for high-level talks between North Korean and US officials. And, of course, no nuclear weapon has been used in combat for three-quarters of a century, since the US dropped two nuclear bombs on Japan to hasten the end of World War II.

This past summer, however, the US withdrew from the 1987 Intermediate-Range Nuclear Forces Treaty after it concluded Russia had violated the INF's terms. The treaty limiting longer-range US and Russian nuclear weapons will expire in 2021 unless it is extended, and it's not clear that it will be: both countries are committing substantial resources to modernise their arsenals.

Moreover, by exiting the JCPOA the US has heightened the risks stemming from Iran. The accord, concluded in 2015, was imperfect. In particular, many of its most significant constraints would last only 10 to 15 years, and the agreement didn't limit Iran's ballistic-missile development. But it did place a ceiling on Iranian nuclear activity and allowed for international inspections. By all accounts, Iran was honouring its provisions.

Now, however, Iran has begun a slow but steady process of getting out from under many of the agreement's limits. It may be doing this to persuade the US and Europe to ease economic sanctions. It may also be calculating that these steps could dramatically reduce the time it would need to produce nuclear weapons without being attacked. But it's at least as likely that Iran's actions will lead the US, or more probably Israel, to undertake a preventive strike designed to destroy a significant part of its program.

Such a strike could lead several other regional powers, including Turkey, Saudi Arabia and Egypt, to develop or acquire nuclear weapons of their own. Turkey, increasingly estranged from many of its allies, has suggested that it may choose to develop nuclear weapons regardless of what Iran does.

North Korea is far ahead of Iran: it already has several dozen nuclear weapons and missiles, has tested missiles that can reach the US, and is developing submarine-launched nuclear weapons. The notion that North Korea will agree to give up its weapons and 'denuclearise' is fanciful. Its leader, Kim Jong-un, believes that only nuclear weapons can ensure his regime's survival, a belief understandably strengthened by the experience of Ukraine, which accepted security guarantees in exchange for giving up the nuclear weapons it inherited from the Soviet Union, only to be invaded by Russia 25 years later.

One risk is that North Korea will over the next few years come to possess a significant arsenal that will pose a meaningful threat to the US. Another is that North Korea's neighbours, including South Korea and Japan, will determine that they, too, need nuclear weapons given the North Korean threat and their diminished confidence in the reliability of the US and its guarantees to protect them with its nuclear forces.

The danger in both regions is that a race to acquire nuclear weapons could trigger a preventive war. Even if such a war were avoided, the presence of multiple nuclear arsenals would increase the temptation for one or more countries to strike first in a crisis. 'Use them or lose them' has the potential to become a recipe for instability and conflict when capabilities aren't sufficiently robust to absorb an attack and still be able to mete out the sort of devastating retaliation essential for effective deterrence.

As if all this were not enough, India and Pakistan, two countries with a long history of bilateral conflict, are both nuclear powers. Nuclear deterrence cannot be assumed. It is all too easy to imagine a Pakistani-supported terrorist attack leading to Indian retaliation, which in turn could prompt Pakistan to threaten using nuclear weapons, because its conventional military forces cannot compete with those of India. There is also the possibility that the command and control of weapons will break down and one or more devices will find their way into the hands of terrorists.

It is close to 60 years since a young presidential candidate named John F. Kennedy predicted that as many as 20 countries could achieve nuclear-weapons capability by the end of 1964. Fortunately, Kennedy was proved wrong, and the number of countries with nuclear weapons is still nine. The 1968 Nuclear Non-Proliferation Treaty has proved to be quite robust, in part because it is buttressed by efforts to prevent the export of critical technologies and by arms control, sanctions and the strength of alliances, which reduces the need for countries to become self-reliant.

But with nuclear technology increasingly available, arms control unravelling amid renewed great-power rivalry, weakened alliances as the US pulls back from the world, and fading memories of Hiroshima and Nagasaki, we are entering a new and dangerous period. Nuclear competition or even use of nuclear weapons could again become the greatest threat to global stability. Less certain is whether today's leaders are up to meeting this emerging challenge.

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Bulletin of the Atomic Scientists (Chicago, Illinois)

The Biological Weapons Convention Protocol Should Be Revisited

By Lynn C. Klotz

Nov. 15, 2019

After its enactment in 1975, one criticism of the major international treaty banning biological weapons, the Biological Weapons Convention, was that it had no provisions to monitor whether countries were complying with it. Being, as it was, the middle of the Cold War, it was unlikely that the Soviet Union would allow international inspectors to visit its biodefense facilities. But as representatives from dozens of countries prepare to discuss the convention in Geneva this December, it would be worth their while to revisit a long-abandoned protocol that would address flaws in a treaty that some have even derided as a gentleman's agreement.

After the Soviet Union collapsed, countries sought to address this perceived weakness in the convention by pushing measures to enforce its terms by enacting a so-called protocol to the convention that provided procedures for randomly selected site visits and a rapid means to investigate weapons development, stockpiling, and use. But supporters of the proposal had their hopes dashed in 2001 when the United States pulled out of a UN ad hoc group tasked with drafting the protocol, meaning the proposed provisions never were enacted into international law. US officials were concerned that biological weapons development couldn't be verified.

Undeterred, protocol supporters held out hopes that under President Barack Obama the United States would change course. But Obama officials also refused to support the protocol—for the same reasons the previous Bush administration had cited in 2001: The legally binding additions to the convention would not achieve meaningful verification or greater security. This claim by both US presidential administrations about inability to verify misses the important point that the main goal of the protocol was transparency, not verification.

But recent events serve to underscore that a protocol to the convention to address the treaty's shortcomings is an idea that should be revisited. Unfounded Russian allegations about biological weapons development in former Soviet countries are threatening the effectiveness of the convention. This concern along with strong arguments for the high importance of transparency in international treaties calls for revisiting the protocol, which had provisions for both transparency and for dealing with allegations like Russia's.

The Russian allegations. Moscow made waves ahead of a meeting of countries in the convention in late 2018 when it alleged, without evidence, that former Soviet states harbor biological weapons laboratories. To paraphrase biosecurity researcher Filippa Lentzos: The unfounded allegations about biological weapons development carried with them dangerous consequences. Accusations like these could help sow distrust and political dissent that could even lead to a military response. They could also erode the convention by making countries more likely to develop their own biological weapons. A coalition of nongovernmental groups that work on issues related to the convention echoed these concerns in a joint statement in December, 2018. These are reasons enough to revisit the protocol.

The main focus of Russia's allegations was the biosafety-level-three laboratory built in the country of Georgia to research pathogens that cause serious human disease. Biosafety-level-three laboratories have many features designed to protect laboratory workers from infection and to reduce the probability of a release of pathogens into the surrounding community. In an attempt to dispel the Russian allegations, a group of international experts visited the Georgia facility. They concluded that it demonstrated significant transparency, and they saw nothing that would not be expected in a legitimate facility.

It is surprising that Russia would take such a disruptive position and put the convention at risk. The Soviet Union was one of three countries leading support for the convention (depository states) and Russia had been active in and supportive of the protocol negotiations. But under President Vladimir Putin, the country's position has changed; It may now be trying to undermine the convention.

Two of the abandoned protocol's major provisions were randomly selected transparency visits and investigations of alleged breaches. Had the protocol been enacted, these measures would have provided means to either deter or dispel unfounded accusations. During the intense debate 20 years ago over the protocol, it seems that no one argued, at least loudly, for its value as a tool to address allegations like Russia's that undermine the convention's effectiveness. The argument for the high importance of transparency lays the foundation for revisiting the protocol.

The protocol. The main purpose of randomly selected transparency visits is to help build confidence in the convention by increasing transparency at facilities. A visit by an inspection team to a randomly selected site in a country would not imply any accusation of wrongdoing and would serve solely to increase confidence in a country's activities. While the United Nations has in place a mechanism to investigate alleged use of chemical and biological weapons—it can dispatch a fact-finding team to the site of an alleged incident—its investigatory power doesn't apply to cases where a country may be developing or stockpiling weapons. In addition to the transparency visits, the protocol describes a mechanism for launching investigations that would include cases of alleged use, development, and stockpiling.

Under the protocol, all on-site activities, such as visits and investigations, would be conducted under so-called managed-access rules. The visiting team and the country in control of the site would negotiate the level of access to areas within a given facility. Importantly, a country would be able to take any measures it deems necessary to protect confidentiality, according to the draft protocol. And while the inspection team has to respect those wishes, the visited country has to "make every reasonable effort to provide alternative means to answer questions or concerns of the inspection team."

Managed access has a long history in inspections related to international treaties. As John Gilbert, a member of the Scientists Working Group on Biological and Chemical Security at the Center for Arms Control and Non-Proliferation, points out, it's part of the Nuclear Non-Proliferation Treaty and the Comprehensive Test Ban Treaty. It's also the model for inspections under the Chemical Weapons Convention. "In the nearly 22 years since the Chemical Weapons Convention entered into force, managed access has proven to be an effective tool for conducting successful inspections, and its procedures have become routine for both inspectors and facility managers," Gilbert wrote in an email.

If the United Nations were to once again take up something like the protocol, negotiators should take into account several developments over the last 20 years that call for changes in its text, including in how it would handle enforcement and monitoring. For instance, new technologies should be monitored for their potential role in biological weapons development. Additionally, online databases have made it easier to monitor new research as it gets published, and a new protocol should include surveillance of these publications. Drone technology also has the potential to aid with off-site (and on-site) monitoring and negotiators should consider its value as a tool to further the aims of the protocol.

Why the protocol was abandoned in 2001. Much of the debate over the value of the protocol occurred years ago. Ahead of the collapse of the protocol negotiations, officials in the US State Department were split between those for and against it. The main argument that detractors made was that the protocol couldn't be used to verify whether a country was in compliance with the convention. Offensive biological weapons development can be easily hidden. A biological weapon

could be developed in many innocent-appearing laboratories and then brought into large-scale production shortly before it was to be employed. For instance, pharmaceutical fermentation facilities could be converted to biological weapons manufacture. This manufacturing capability is the reason that the international pharmaceutical industry was a major focus of the protocol.

In the United States, the pharmaceutical industry was adamantly against visits to their facilities, some of which manufactured antibiotics using proprietary strains of bacteria. Some in the industry felt that stealing a microbe was akin to stealing a whole factory's operation. There were also concerns that visitors would demand to see rooms with proprietary manufacturing processes or that employees would inadvertently give out proprietary information. Furthermore, the industry was concerned about damage to its good-will from misunderstandings about the purpose of random transparency visits or from false accusations of bioweapons development. But as experience with the Chemical Weapons Convention shows, the concepts of managed access have eased some of industry's concerns.

There were US government concerns as well. Some officials argued that convention-sanctioned international teams visiting biodefense facilities posed a risk to classified information and materials, especially if the delegations included foreign intelligence agents. But the United States has already agreed to intrusive inspections under managed access for at least three other international treaties.

John Bolton, appointed early in the George W. Bush administration as undersecretary of state for arms control, pulled the United States from the protocol and pressured the UN ad hoc group to abandon it as well. Even without this overt pressure, supporters of the protocol would have been hard-pressed to enact it without US support. The United States withdrew at a very late stage; the ad hoc group's chairman's text was completed and was ready to be submitted to the United Nations for potential approval.

When Obama was elected in 2008, there was hope among protocol supporters that it would finally be enacted, especially since its sister treaty, the Chemical Weapons Convention, was enacted in 1997. This was a false hope. In 2009, Under Secretary of State Ellen Tauscher told a meeting of convention members that the Obama administration would not seek enactment of the protocol. The administration had "determined that a legally binding protocol would not achieve meaningful verification or greater security. It is extraordinarily difficult to verify compliance."

Subsequently, US Ambassador Laura Kennedy and Secretary of State Hillary Clinton made almost identical arguments about the inability to verify. The US government under Obama had become ensnared in the verification trap. Even though discovery of hidden offensive biological weapons activities is difficult, other aspects of compliance with the convention are verifiable. Unfortunately, the word "verification" leads people into drawing false parallels to nuclear arms control where weapons development is often possible to verify.

Although it actually focused on transparency, the 2001 protocol was viewed by some as a verification mechanism, a misguided view that helped lead to its collapse. The word "verification" does not appear even once in the draft of the protocol and the word "transparency" appears perhaps a hundred times. The protocol collapsed in part due to this misunderstanding (or misrepresentation).

As the Bioweapons Monitor eloquently argued in 2011, "Compliance with the (bioweapons) prohibition is about more than verifying the absence of biological weapons. Perhaps more importantly, it is also about verifying the peaceful nature of activities that could contribute to biological weapons development efforts."

The Monitor argued that political scientists and diplomats have consistently stressed that multilateral arms control regimes rely on transparency to be effective. Transparency serves to reassure countries that others are not conducting illicit work. “Excessive secrecy of activities in the biological field, particularly if carried out in military facilities, is likely to lead to misinterpretation and suspicion, and may result in a new biological arms race.”

A revised protocol could help counter destabilizing efforts like those of Russia, whose unfounded allegations threatened to undermine confidence in the convention. By dramatically increasing transparency around biological work, a new protocol could bolster the broader convention and help stave off the potential for a biological weapons arms race.

<https://thebulletin.org/2019/11/the-biological-weapons-convention-protocol-should-be-revisited/>

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Breaking Defense (Washington, D.C.)

We Must Rebuild American Uranium, Rare Earths Infrastructure

By Andy Keiser

Nov. 19, 2019

Rare earths are 17 chemical elements used in military equipment as varied as missile guidance systems to lasers. China controls much of the world’s rare earth production, which has made them a concern of the Pentagon and the White House. Uranium is another critical military material largely controlled today by foreign sources. What should be done? Read on! The Editor.

One way China and Russia are successfully undermining American leadership is by flooding the global market with state-subsided rare earths, including the nuclear materials that power critical American aircraft carriers and submarines.

Immediate, direct federal purchases of uranium is one key way that we can counter the malign influence of China and Russia by securing the U.S. nuclear supply chain for national security. Utilizing his newly-created Nuclear Fuel Working Group, President Trump can strengthen America’s position in the world and restore a finite and diminishing American uranium supply with direct federal uranium purchases.

China has made production of rare earths a strategic priority. Roughly 80 percent of the rare earths imported by the U.S. come from China. Just 30 years ago, the U.S. was the world’s largest producer of rare earths. Today, only one rare earth mine remains in America and its ore is processed where? In China.

As for uranium specifically, the core material for U.S. military and civilian nuclear technology, the U.S. imports 93 percent of its uranium needs, and that number is expected to worsen to 99 percent by the end of 2019. Although the U.S. has some of the largest and highest-grade uranium deposits in the world, imported uranium costs less.

In fact, nearly half of our uranium comes from Russia or other former Soviet Union states, whose state-owned companies are flooding the global market and driving free-market companies out of business. This is a strategic vulnerability, because as a result of losing a domestic nuclear fuel industry to replace that stockpile, the commercial nuclear fleet in the United States is now almost entirely dependent on imports of nuclear fuel.

In Iran, the government has been challenging its obligations under the Joint Comprehensive Plan of Action (JCPOA). The White House had approved additional Iran sanctions waivers to allow nuclear material from Russia to continue entering the U.S. Despite the role it plays in supporting Iranian nuclear activity, Russian state-owned Rosatom subsidiaries continued receiving waivers to sell uranium to commercial reactors in the United States, including those that enjoy federal, state or ratepayer subsidies. Thankfully, this week Secretary of State Pompeo announced it would no longer receive those waivers declaring that: "The right amount of uranium enrichment for the world's largest state sponsor of terror is zero."

As for domestic action, the president previously declined the recommendation from a nine-month Department of Commerce study to implement a quota for domestic material equal to the amount entering the U.S. market from state-subsidized Russian production. Instead, the president established the Nuclear Fuel Working Group to develop recommendations to save the failing nuclear fuel cycle, which are due out later this month.

International treaties mandate that the uranium used for national security, including to fuel the reactors that power naval vessels, be entirely of domestic origin. The national security supply chain generally relies upon commercial demand to maintain critical capabilities until needed. In the case of uranium, that supply chain is atrophying due to a lack of domestic commercial demand that is exacerbated by the strategic oversupply of the global market by Russia and China. The United States has world-class reserves, production techniques and environmental performance, yet our nuclear supply chain to fuel national security needs and clean energy languishes because state-subsidized uranium has overrun the market.

Rebuilding that nuclear infrastructure is necessary now and waiting any longer weakens America's national and economic security. A robust domestic nuclear fuel cycle will replace America's dependence on our primary adversaries and diminish the global chokehold on the world's nuclear energy industry. Fewer things are more important to get right to maintain America's military and economic edge in the world.

Andy Keiser is a former senior advisor to the House Intelligence Committee and a deputy national security advisor to the Trump transition team. Keiser is currently a principal at Navigators Global and a senior advisor to the Center for the Study of the Presidency and Congress. He conducts consulting and federal lobbying for several companies, including in the energy and defense sectors, though he does not work for any firms directly involved in rare earths or uranium. Follow him on Twitter @AndyKeiser

<https://breakingdefense.com/2019/11/we-must-rebuild-american-uranium-rare-earths-infrastructure/>

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ABOUT THE USAF CSDS

The USAF Counterproliferation Center (CPC) 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's Director for Nuclear and Counterproliferation (then AF/XON) and Air War College commandant established the initial personnel 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.

In 2008, the Secretary of Defense's Task Force on Nuclear Weapons Management 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." This led to the addition of three teaching positions to the CPC in 2011 to enhance nuclear PME efforts. At the same time, 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 professional continuing education (PCE) through the careers of those Air Force personnel working in or supporting the nuclear enterprise. This mission was transferred to the CPC in 2012, broadening its mandate to providing education and research on not just countering WMD but also nuclear operations issues. In April 2016, the nuclear PCE courses were transferred from the Air War College to the U.S. Air Force Institute for Technology.

In February 2014, the Center's name was changed to the Center for Unconventional Weapons Studies (CUWS) 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. In May 2018, the name changed again to the Center for Strategic Deterrence Studies (CSDS) in recognition of senior Air Force interest in focusing on this vital national security topic.

The Center'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. The Latin inscription "Armis Bella Venenis Geri" stands for "weapons of war involving poisons."

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