USAF Center for Unconventional Weapons Studies

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Welcome to the CUWS Outreach Journal! As part of the CUWS' mission to develop Air Force, DoD, and other USG leaders to advance the state of knowledge, policy, and practices within strategic defense issues involving nuclear, biological, and chemical weapons, we offer the government and civilian community a source of contemporary discussions on unconventional weapons. These discussions include news articles, papers, and other information sources that address issues pertinent to the U.S. national security community. It is our hope that this information resources will help enhance the overall awareness of these important national security issues and lead to the further discussion of options for dealing with the potential use of unconventional weapons.

FEATURE ITEM: ***"The Future of Weapons of Mass Destruction: Their Nature and Role in 2030".*** Authored by John P. Caves, Jr. and W. Seth Carus; National Defense University's Center for the Study of Weapons of Mass Destruction; Occasional Paper 10, June 2014.
http://ndupress.ndu.edu/Portals/68/Documents/occasional/cswmd/CSWMD_OccationalPaper-10.pdf

This publication explores the impact of technological change and the evolving geopolitical environment on the future weapons of mass destruction threat. Technological advances will enable new forms of chemical and biological weapons, and may increase proliferation risks for nuclear weapons. An increasingly multipolar international system could make weapons of mass destruction more attractive, while declining Western influence could undermine regimes intended to control their proliferation and use. The authors conclude by posing answers to the question: "How should the United States prepare for such a future?"

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Huffington Post.com – U.S.

U.S. Nuclear Missile System Is Aging, Guarded by Airmen with Low Morale

By ROBERT BURNS, Associated Press (AP)
July 08, 2014

The Air Force asserts with pride that the nation's nuclear missile system, more than 40 years old and designed during the Cold War to counter the now-defunct Soviet Union, is safe and secure. None has ever been used in combat or launched accidentally.

But it also admits to fraying at the edges: time-worn command posts, corroded launch silos, failing support equipment and an emergency-response helicopter fleet so antiquated that a replacement was deemed "critical" years ago.

The Minuteman is no ordinary weapon. The business end of the missile can deliver mass destruction across the globe as quickly as you could have a pizza delivered to your doorstep.

But even as the Minuteman has been updated over the years and remains ready for launch on short notice, the items that support it have grown old. That partly explains why missile corps morale has sagged and discipline has sometimes faltered, as revealed in a series of Associated Press reports documenting leadership, training, disciplinary and other problems in the ICBM force that has prompted worry at the highest levels of the Pentagon.

The airmen who operate, maintain and guard the Minuteman force at bases in North Dakota, Montana and Wyoming came to recognize a gap between the Air Force's claim that the nuclear mission is "Job 1" and its willingness to invest in it.

"One of the reasons for the low morale is that the nuclear forces feel unimportant, and they are often treated as such, very openly," says Michelle Spencer, a defense consultant in Alabama who led a nuclear forces study for the Air Force published in 2012. She said in an interview the airmen — they're called Missileers — became disillusioned by an obvious but unacknowledged lack of interest in nuclear priorities among the most senior Air Force leaders.

Spencer's study found that Air Force leaders were "cynical about the nuclear mission, its future and its true — versus publicly stated — priority to the Air Force." Several key leadership posts have since changed hands, and while Spencer says she sees important improvements, she's worried about the Air Force's commitment to getting the nuclear forces what they need.

This is no surprise to those responsible for nuclear weapons policy. An independent advisory group, in a report to the Pentagon last year, minced no words. It said the Air Force must show a "believable commitment" to modernizing the force.

"If the practice continues to be to demand that the troops compensate for manpower and skill shortfalls, operate in inferior facilities and perform with failing support equipment, there is high risk of failure" to meet the demands of the mission, it said.

Robert Goldich, a former defense analyst at the Congressional Research Service, said the ICBM force for years got "the short end of the stick" on personnel and resources.

"I honestly don't think it's much more complicated than that," he said. "When that happened, people lost sight of how incredibly rigorous you've got to be to ensure quality control when nuclear weapons are involved."

That may be changing. Air Force leaders are making a fresh push to fix things.

When Deborah Lee James became Air Force secretary, its top civilian official, in December, she quickly made her way to each of the three ICBM bases and came away with a conviction that rhetoric was not matched by resources.

"One thing I discovered is we didn't always put our money where our mouth is when it comes to saying this is the No. 1 mission," James told reporters June 30 during a return visit to F.E. Warren Air Force Base in Wyoming.

James says the fixes will require money — and a lot more. They will take more people and a major attitude adjustment.

"I happen to think the top thing that really drives an airman is feeling like they're making a difference ... protecting America," she said earlier in June. Missileers ought to feel that way, she said, but she is not convinced they do. "And so, over time, we've got to change that around."

James said the Air Force will find $50 million in this year's budget to make urgent fixes, and will invest an additional $350 million in improvements over the coming five years. Even that, she said, is unlikely to be enough and more funds will be sought.

Her words are resonating with some, including Maj. Steve Gorman, a maintenance operations squadron commander at Minot. He already is seeing signs of change. He points to a recent decision to add 13 new maintenance positions here.

"That's a huge thing for us," Gorman said.

Since its initial deployment in 1970, the Minuteman 3 missile itself has been upgraded in all its main components. But much of the rest of the system that keeps the weapon viable and secure has fallen on hard times.

One example is the Huey helicopter fleet, which escorts road convoys that move Minuteman missiles, warheads and other key components. It also moves armed security forces into the missile fields in an emergency, even though it's too slow, too small, too vulnerable to attack and cannot fly sufficient distances.

It's also old — Vietnam War old.

The seven Hueys flown daily at Minot were built in 1969. The yearly cost of keeping them running has more than doubled over the past four years, according to Air Force statistics — from $12.9 million in 2010 to $27.8 million last year.

"Obviously we need a new helicopter, based on the mission," said Maj. Gen. Jack Weinstein, who as commander of 20th Air Force is responsible for the operation, maintenance and security of the full fleet of Minuteman missiles.

That's what the Air Force has been saying since at least 2006. A 2008 Air Force study cited a "critical need" to replace the Hueys "to mitigate missile field security vulnerabilities" and said this need had been identified two years earlier.

In an Associated Press interview June 25 while visiting Minot, Weinstein said he was trying to persuade his superiors to buy a new fleet of more capable helicopters, but he said it was unclear whether that would happen before 2020.

Weinstein is more optimistic about other opportunities to fix his missile corps. He is implementing a "force improvement program" that was developed from hundreds of recommendations by rank-and-file ICBM force members. It is intended to begin erasing the perception that the nuclear mission is not a top priority, and to give the nuclear missile corps more people, money, equipment, training, educational opportunities and financial incentives.

Lt. Col. Brian Young, deputy commander of the 91st Maintenance Group at Minot, said he senses a turning point as top brass reach out to enlisted airmen and non-commissioned officers to solicit ideas about how to fix the force.

"This feels completely different than any initiative I've been associated with in my 22 years" in the Air Force, he said.

http://www.huffingtonpost.com/2014/07/08/us-nuclear-missile-system-aging_n_5566359.html

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Global Security Newswire – Washington, D.C.

Navy: Plan to Build New Strategic Sub Requires 'Unsustainable' Funding

July 8, 2014

The U.S. Navy says that it cannot afford to simultaneously build a new strategic submarine fleet and to update the rest of its conventional ships.

In a July 1 report to Congress on its long-term shipbuilding plan, the Navy said by fiscal 2032 it would be spending in excess of $24 billion annually -- almost double the traditional average of $13 billion, Inside Defense reported. The sea service described that amount of funding as "unsustainable."

"There will be resourcing challenges outside the [fiscal 2015 - fiscal 2019 future years defense plan] largely due to investment requirements associated with the SSBN(X) requirement," wrote U.S. Deputy Defense Secretary Robert Work in the 28-page report. "SSBN(X)" refers to the planned successor class to the Ohio ballistic missile submarine.

The Navy's long-term shipbuilding plan does not factor in current defense spending caps imposed by the 2011 Budget Control Act.

Acquisition costs for the next-generation nuclear delivery vehicle are forecast in the report to boost yearly shipbuilding spending to an average of $19.7 billion yearly during the fiscal 2015 - fiscal 2019 period.

The need to modernize the U.S. strategic submarine fleet "will cause significant and noteworthy risks to the Navy's overall shipbuilding plan," the report says.

The projected cost of the lead SSBN(X) submarine also has increased, rising by about $400 million from last year's projection to $12.4 billion, according to the Navy.

There is a movement in both chambers of Congress to create a separate fund to pay for the new strategic submarine fleet in order to prevent the expense from swamping the Navy's shipbuilding budget. The Senate Armed Services Committee in May passed annual defense-authorization legislation that would require the establishment of a "National Sea-based Deterrence Fund." Legislation with a similar goal has already been approved by the House of Representatives.

Construction of the new submarine fleet is anticipated to begin in fiscal 2021. A total of 12 new vessels -- armed with nuclear-tipped Trident D-5 ballistic missiles -- are planned for acquisition.

http://www.nti.org/gsn/article/us-navy-says-plan-build-new-strategic-sub-requires-unsustainable-funding/

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Defense Systems.com – Vienna, VA

Air Force Seeks New ICBM Technologies

By Joey Cheng
July 09, 2014

As the Air Force's missile systems continue to age, the military is looking to upgrade intercontinental ballistic missile technologies, with an eye toward open systems, modular designs and standardized interfaces.

The Air Force released a Broad Agency Announcement this week calling for new technologies applicable to the ICBM weapon system. The BAA focuses primarily on ground-based strategic deterrence, meaning that the studies will be applicable to the creating hardware and components based on Minuteman III specifications.

U.S. nuclear forces center on what is called the "nuclear triad," which refers to the delivery method of nuclear weapons—missiles, submarines, or bombers. The Air Force's Minuteman III missiles make up the missile portion of the triad. There are about 450 of the missiles based in underground silos across North Dakota, Montana, Wyoming, Colorado and Nebraska, reports Defense One. First deployed in 1970, the Minuteman III is expected to stay in service until 2030.

The BAA is looking at 11 studies to evaluate new designs and technologies. Some highlights include:

ICBM Nuclear Command and Control Applications. The BAA calls for a 12-month study to document the current state of the ICBM command and control system, and a second study that will exploit state-of-the-art communications by identifying future technologies to meet current and future needs.

Guidance Instrumentation Flight Test Safety Systems. The Air Force is looking to upgrade its Flight Safety System/Range Tracking system by incorporating them with instrumentation and telemetry systems into the future guidance set wafer.

Strategic Thrust Vector Control System. The announcement is looking to develop an open architecture thrust vector system for a three-stage, medium-class, ICBM launch vehicle that can be used across all three stages.

Additional studies focus on developing propulsion and thermal protection systems, adapting multiple independent reentry vehicle capabilities into the Minuteman III, increasing penetration capabilities, improving battery designs, designing advanced ordnance initiation systems and safeties, examining the possible use of a Trajectory Correcting Vehicle or a Trajectory Shaping Vehicles, and improving missile stage separations.

The BAA emphasizes the use of an open systems approach to procuring new technologies for the missiles.

“As part of this program, the contractor shall define, document, and follow an open systems approach for using modular design, standards based interfaces, and widely-supported consensus-based standards,” the Air Force said. “The contractor shall develop, maintain, and use an open system management plan to support this approach and will be required to demonstrate compliance with that plan during all design reviews.”

The final response date for the announcement is Sept. 20, 2014.

A RAND report released in February found that incrementally modernizing the Minuteman III is a more cost-effective alternative to developing a new system. The study found that a new system would likely cost twice as much as incremental sustainment, meaning that the argument for developing a new alternative would primarily be the changing capabilities and threats.

http://defensesystems.com/articles/2014/07/09/air-force-icbm-technologies.aspx

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Billings Gazette – Billings, MT

Nuclear Missile Duty: 'It Weighs on Your Mind'

By Robert Burns, Associated Press (AP)
July 9, 2014

BERTHOLD, N.D. — 1st Lt. Andy Parthum spends his workday 60 feet below ground awaiting the order he hopes never arrives: to launch the most powerful weapon ever devised by man. He is a nuclear "missileer" - an airman who does his duty not in the air but in a hole in the ground.

On both counts - the possibility of firing weapons that could kill millions, and the subterranean confinement - a missileer lives with pressures few others know. It's not active combat, although the Air Force calls them combat crew members. Yet no one can exclude the possibility, remote as it may be, that one day a president will deliver the gut-wrenching order that would compel a missileer to unleash nuclear hell.

"Absolutely, it weighs on your mind," Parthum, 25, said on a recent afternoon at Juliet-01, a Minuteman 3 missile launch site on a small patch of prairie 9 miles from the village of Berthold and about 25 miles west of Minot Air Force Base, whose 91st Missile Wing controls 150 of the nation's 450 Minuteman missiles.

It may come as a surprise to some that the Air Force still operates intercontinental ballistic missiles, or ICBMs. And therein lies part of the problem for missileers, who feel underappreciated in a military that has long since shifted its main focus to fighting small wars, striking with unmanned drones and countering terrorism and cyberattacks.

Parthum, however, says he takes pride in his role.

"It's sobering. It's not something that's taken lightly by anybody," Parthum, a native of Centreville, Virginia, said as he and his crewmate, 23-year-old 2nd Lt. Oliver Parsons of Shawnee, Kansas, showed visitors around the small launch control center where they were several hours into a 24-hour watch over a group of 10 missiles.

It's a sometimes tedious duty the Air Force calls "standing alert." Some say their biggest challenge is staying alert.

Missileers, typically 22- to 27-year-old lieutenants and captains, work in pairs, with a relief crew arriving every 24 hours. A missileer generally does two "alerts" a week. It was Parthum's 118th. (He keeps track.)

It's not hard to see why some missileers find it hard to adjust to life under the prairie. An 8-ton blast door seals their launch control center from a potential incoming nuclear detonation. Twice last year launch officers were disciplined after admitting they left the blast door open while a crewmate was asleep - a security violation. That and other lapses in discipline, training and leadership were documented by The Associated Press over the past year, prompting Defense Secretary Chuck Hagel to declare that "something is wrong."

The ICBM launch control center is actually two separate structures. An outer protective shell is made of reinforced concrete lined with a steel plate. A smaller, box-like enclosure where the missileers work, eat and sleep is suspended inside the protective shell by pneumatic cylinders called "shock isolators" attached to the shell's ceiling by heavy chains; the isolators are designed to keep the space stable in the event of a nuclear blast.

These underground command posts have changed relatively little since they were built in the early 1960s, although the Air Force recently committed to refurbishing them to make a missileer's life a bit easier. Juliet-01, the command post an AP reporting team was permitted to visit, had just been repainted and spruced up to remove corrosion caused by water intrusion, giving it what one officer called "that new car smell."

The launch center is accessible only from an above-ground building that resembles a small ranch-style home. An access shaft descends from a vestibule inside the building, which is controlled by a security team and surrounded by alarms and a chain-link fence.

Nuclear weapons duty is a deadly serious business, but it's not without room for a pinch of missileer humor. A patch on the green leather seat from which Parthum monitors a computer console linked electronically to each of his 10 Minuteman 3 missiles offers these pithy phrases: "This Round's On The House," and "Party Til You Nuke."

In fact, the U.S. has never fired an ICBM, other than for flight testing. Their stated purpose is to help deter nuclear war by convincing a potential attacker that it would have more to lose than to gain.

ICBM duty is far removed from the glamor, guts and glory associated with the Air Force. It not only falls short of the derring-do image of a fighter or bomber pilot streaking across enemy skies, it requires sitting, unseen and largely unappreciated, in a stuffy capsule to baby-sit missiles.

Upward of two-thirds of missileers were "volunteered" for the job after gaining their officer commission. Once they complete basic ICBM training at Vandenberg Air Force Base in California, they are sent on four-year tours to one of three missile bases: Minot, Malmstrom Air Force Base in Montana, or F.E. Warren Air Force Base in Wyoming.

The responsibility is enormous, the cost of mistakes potentially colossal, ranging from environmental damage to inadvertently triggering a nuclear war.

That is why the Air Force has long-established rules, procedures and backup safety systems to minimize the possibility of a major error. Over time, with the passing of the Cold War, the Air Force lost focus on its nuclear mission.

It also lost a good deal of what remained of the allure of serving as a missileer.

"Even during the Cold War while facing down the Soviets, it could be difficult to convince bright young airmen that what they were doing was worthwhile," Robert W. Stanley II wrote in a research paper in 2011 before becoming vice commander of the 341st Missile Wing at Malmstrom. Last year he was promoted to commander there but resigned in March 2014 amid a scandal over exam cheating among his missileers.

In his paper, "Reviving a Culture of Disciplined Compliance in Air Force Nuclear Operations," Stanley called for missileer incentive pay.

"In trying to demonstrate that nuclear duty is not a dying career field, and one worthy of top personnel," he wrote, "no message could be more tangible than monetary reward."

The Air Force is heeding that advice. Starting in October, it will offer entry bonuses to newly trained missileers, as well as "duty pay" for security forces, missileers and others who operate in the missile fields. A nuclear weapons service medal also will be offered as part of an intensified effort to make the career field more attractive.

Brian Weeden, who served as a missileer at Malmstrom from 2000-04, said management changes are badly needed.

"I think the high level of micromanagement by the leadership has contributed to the recent challenges the ICBM world has had," he said. "When individuals' slightest actions are scrutinized or controlled by others, that reduces the level of responsibility they feel and can lead to not caring."

http://billingsgazette.com/news/state-and-regional/montana/nuke-missile-duty-it-weighs-on-your-mind/article_bdad1a6e-b176-5204-8992-c9972312f321.html

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Belleville News Democrat – Belleville, IL

Hagel Says Nuclear Operation Has Drifted

By LOLITA C. BALDOR, Associated Press (AP)
July 9, 2014

KINGS BAY, Georgia — Defense Secretary Chuck Hagel told naval submariners on Wednesday that the U.S. has let its focus on the military's nuclear responsibilities drift a bit, but two reviews are wrapping up and he will be looking at recommendations to strengthen the health of the force.

Speaking at Naval Submarine Base Kings Bay, Hagel said more attention must be paid to the nuclear forces as key to national security.

Hagel has ordered two reviews of the nation's nuclear operations, to find the causes of leadership lapses and other problems revealed by a series of Associated Press reports, including security gaps, cheating and other systemic breaches within the force.

"We have let our focus on the nuclear deterrence aspect of our national security drift a little," Hagel said.

Many of the recent problems in the U.S. nuclear forces have occurred in the Air Force, but in February the Navy announced that dozens of senior enlisted instructors at a Navy nuclear propulsion school in South Carolina were accused of cheating on written tests that help them qualify to operate nuclear reactors. The matter is not directly related to nuclear weapons but to the nuclear power reactors that provide propulsion for Navy ships and submarines.

The Navy has not announced the results of its investigation at the Nuclear Power School near Charleston.

During his visit here, Hagel toured the USS Tennessee, an Ohio-class ballistic missile submarine. And he told the troops that the Pentagon is still committed to replacing the aging submarines. He said the steep budget cuts are making it difficult to meet spending priorities.

The stealthy subs, called "boomers," are one leg of the nation's nuclear triad, which also includes long-range bomber aircraft and land-based missiles. There are 14 Ohio-class subs, and they can carry up to 24 Trident II ballistic missiles, but the launch tubes can also be loaded with torpedoes.

The Defense Department wants to spend $1.2 billion in 2015 research and develop a replacement sub.

Plans call for detailed design work on the replacement to begin in 2017. The Pentagon hopes to buy 12 of the new subs, with the first purchase in 2021, at a projected cost of $12.4 billion. The cost includes $4.8 billion for planning and $7.6 billion for construction. The first sub would go on patrol around 2031.

While at Kings Bay, Hagel also met with a number of female submarine officers, as the Navy moves to slowly integrate them into what has long been a male-only force. The move to put female officers on subs began in 2012, and there currently are more than 60 women serving as part of 14 crews on seven submarines. Each sub has two crews.

There are 20 female submarine officers and six female submarine supply officers serving in Kings Bay, on three integrated subs. Women do not serve on the USS Tennessee, which Hagel toured on Wednesday.

Navy officials are planning to begin integrating female enlisted members into the submarine force over the next few years.

The sub base is the first stop for Hagel on a two-day trip that will also take him to the Eglin Air Force Base in Florida and the Army's Fort Rucker in Alabama.

The trip is designed to underscore some of Hagel's budget priorities, including some that have gotten slammed by Congress, as members continue to debate the spending plan.

National Security Writer Robert Burns contributed to this report.

http://www.bnd.com/2014/07/09/3294465/hagel-says-nuclear-operation-has.html

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Albuquerque Journal - Albuquerque, NM

New Supercomputer Will Test Aging Nukes

By Rick Nathanson, Journal Staff Writer
Friday, July 11, 2014

A new supercomputer to test nuclear weapons that could perform up to 50 million billion calculations per second will be built and installed at the Metropolis Computing Center at Los Alamos National Laboratory.

The National Nuclear Security Administration and Cray Inc. announced Thursday an agreement to build the next generation of supercomputer. Trinity, as it is called, will replace Los Alamos' current supercomputer, Cielo, which can perform from 1 million billion to 2 million billion calculations per second.

Like Cielo, Trinity will be used as part of the Stockpile Stewardship Program, which requires advanced calculations and simulations necessary to determine the viability, safety and security of the nation's aging nuclear weapons inventory.

Trinity is a joint effort of the New Mexico Alliance for Computing at Extreme Scale, or ACES, between Los Alamos and Sandia national labs, and is part of the NNSA's Advanced Simulation and Computing Program.

Trinity will cost about $174 million to build and install. That does not count the roughly $20 million annually for electricity to power it and water to cool it, nor does it count the cost of manpower and expertise to run and maintain the supercomputer, said Gary Grider, the High Performance Computing Division leader at Los Alamos.

"The way we do science-based stewardship of the weapons is we spend time tearing them apart, and we have to certify that they are useful and safe and will provide a deterrent," without testing them via a nuclear blast, Grider said.

The age of the nuclear weapons, some of them more than 40 years old, requires ever more complicated calculations, which cannot be performed on either Cielo or the Sequoia supercomputer at Lawrence Livermore in California.

Trinity, which is expected to come on line in phases in 2015 and 2016, will also be the first supercomputer to be cooled by an evaporative water system that uses recycled county sewer water, Grider said. The water will be cycled through the system three times before being treated and sent to a wetlands area. It will eventually work its way back to the Rio Grande.

Also a first, Grider said, is Trinity will have a "burst buffer" of three levels of memory and storage.

Not everyone is excited about this latest generation of supercomputers. Greg Mello, executive director of the Los Alamos Study Group, a nuclear policy think tank and nuclear weapons disarmament lobbying group, said the Stockpile Stewardship Program is nearly two decades old.

"We've not really changed the design of nuclear weapons, so we don't really need the extra computing power and speed, or the extra taxpayer expense," he said.

Mello said the supercomputer race is in part about "bragging rights" to see who can make the biggest and fastest computer. "More centrally, we just don't need an endless succession of supercomputers at multiple laboratories doing the exact same thing and at great expense."

Kevin Alvin, a senior manager for Advanced Simulation and Computing at Sandia, said Sandia is working on the architecture of the supercomputer.

"The science becomes extremely complex as the weapons get older," he said. "Sandia's role is to ensure the safety and reliability of the whole weapons system, and use simulations to understand all the potential safety and accident scenarios" as well as the different environments in which the weapons are stored, carried or may be used.

The primary focus for scientists at Los Alamos is understanding the nuclear performance of the weapons, Alvin said.

http://www.abqjournal.com/427751/news/new-supercomputer-will-test-aging-nukes.html

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RT (Russia Today) – Moscow, Russia

Radioactive Load from Hijacked Truck Found in Mexico

July 4, 2014

Mexican authorities have recovered dangerous iridium-192 material stolen from a truck on Thursday in Tlalnepantla, north of the capital. The container had no leakage and radioactive material did not cause harm to the population, the authorities announced.

"We located the radioactive source" the National Coordinator of Civil Protection of the Ministry of Interior Luis Felipe Puente said via his twitter. All of the material appears to be accounted for, he later added in an interview with Milenio television.

The container *"was not violated, it contains the material, which was measured,"* he said. *"As it wasn't manipulated, there was surely no risk to people,"* Puente added.

In the morning, the government of Mexico issued an alert warning after a truck containing radioactive material was stolen. The government urged the thieves not to open up the contents of the protective container.

The substance *"can be dangerous for human health if removed from its container,"* the federal civil defense office said in a statement, confirming that deadly iridium-192, a radioactive matter used in making industrial products, was stolen.

Puente later announced that the vehicle was found in Tlalnepantla, and is now guarded by the authorities, but the radioactive substance has not been recovered.

The Interior Ministry said that the Iridium 192 can cause permanent or serious injury to anyone who is handling it or comes into contact with it for a short time period.

It is the third theft of radioactive material in Mexico since December, when thieves hijacked a truck containing dangerous radioactive medical material Cobalt-60. The truck was later discovered with the safety container holding the cargo found empty, and the material abandoned nearby.

http://rt.com/news/170576-radioactive-material-mexico-truck/

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Los Angeles Times – Los Angeles, CA

Oops: Forgotten Smallpox Discovered in Old Storage Room Near D.C.

By Lauren Raab and Rebecca Bratek, Reporting from Washington
July 8, 2014

National Institutes of Health workers preparing to move a lab in Bethesda, Md., found an unwelcome surprise in a storage room this month: six vials of smallpox.

There is no evidence that any of the vials was breached, and no lab workers or members of the public were exposed to the infectious and potentially deadly virus, the federal Centers for Disease Control and Prevention said in its announcement Tuesday.

The vials labeled *variola* — a name for the smallpox virus — were found July 1 "in an unused portion of a storage room" and seem to date to the 1950s, the CDC said. They were freeze-dried, intact and sealed, forgotten and packed away in a cardboard box, officials said.

The vials were "immediately secured" in a containment lab, then transported via government aircraft Monday to the CDC's containment facility in Atlanta, it said.

The samples are being tested to see whether any of them are viable – that is, can grow – and will then be destroyed, the CDC said.

No documentation was found to explain how or why the virus was left in the Maryland facility, though it appears the vials might have been retained inadvertently when the laboratories were transferred to the Food and Drug Administration from the National Institutes of Health in 1972, according to the CDC.

Dr. Michael Osterholm, a biosecurity expert, said the samples didn't pose much of a threat as they sat for decades in a government storage room.

"Some vials in a freezer by themselves aren't going to pose a huge risk," said Osterholm, who is director of University of Minnesota's Center for Infectious Disease Research and Policy.

Officials say this is the first time unaccounted-for smallpox was discovered, but Osterholm said it shouldn't come as a shock.

"We have freezers like this in the world," he said. "The likelihood of finding more smallpox virus is real."

NIH workers also found 10 other vials labeled with unidentified contents. Only the six marked "variola" tested positive for smallpox DNA.

The most common type of smallpox is serious, contagious and frequently fatal, with about 30% of cases resulting in death, according to the CDC. Luckily, the disease was declared eradicated in 1980 after a worldwide vaccination program.

The last U.S. case of smallpox was in 1949, and the last naturally occurring case anywhere in the world was in Somalia in 1977, according to the CDC. Since then, according to the World Health Organization, the only known cases stemmed from a 1978 lab accident in England.

Only two labs – one at the CDC in Atlanta and another near Novosibirsk, Russia – are "designated repositories" for smallpox. All other labs in the world were required to destroy their smallpox strains or transfer them to the two laboratories, according to an international agreement reached in 1979.

A debate has been taking place in recent years over whether (or when) to destroy the last living strains of the virus. Some argue that the disease could reemerge, so virus samples are needed to conduct research that would protect the public. Others argue that keeping live samples is the very thing ensuring smallpox is not fully wiped out.

The World Health Organization decided in May to postpone a decision on whether to destroy remaining stocks.

http://www.latimes.com/science/sciencenow/la-sci-sn-smallpox-20140708-story.html

The Korea Herald – Seoul, South Korea

'N.K.'s Nuclear Stockpile Could Rise Sharply'

July 7, 2014

WASHINGTON (Yonhap) — North Korea can significantly increase its nuclear stockpile if a light water reactor under construction at its Yongbyon nuclear complex goes into operation, a U.S. nuclear scientist warned, urging Washington to restart negotiations with Pyongyang.

North Korea has so far used a 5-megawatt reactor at Yongbyon to make plutonium for nuclear weapons, roughly at a speed of one bomb worth of plutonium a year. But since a few years ago, the North has been building a larger-scale light water nuclear reactor that experts say could give Pyongyang enough plutonium to make about five or six weapons a year.

"From the bigger light water reactor they're making, what I'm arguing is that in principle, if that can operate effectively and at high power over every year, they could probably make 30-40 kilograms just from that reactor," Charles Ferguson, president of the Federation of American Scientists, said in an interview with Yonhap News Agency.

About 6-7 kilograms of plutonium is necessary to make one nuclear bomb, according to experts.

Ferguson said the North could use its uranium enrichment facility to make low enriched uranium as fuel for the light water reactor, rather than directly producing weapons-grade highly enriched uranium, because it can make plutonium out of spent fuel from the light water reactor.

"It depends on how frequently they refuel the reactor. They can take spent, radiated fuel out of the reactor quickly within a couple of months, then the plutonium coming out is more weapons grade. That's one option for them. They can use this kind of smaller light water reactor," he said.

The North could double its plutonium stockpile within just one year of operating the reactor, he said.

"Within a few years, they could have, they could start getting to the level of a state like Pakistan or India in terms of their plutonium production," he said. "That's why it is so important not to neglect North Korea but to re-engage on the political problem or to see if we can head off this production of more and more plutonium."

Six-nation negotiations to end the North's nuclear program have been stalled since the last round of talks in late 2008. Since then, the North conducted two more nuclear tests, one in 2009 and the other in 2013, and restarted the 5-megawatt reactor that had been shut down in 2007.

South Korean officials have warned the North could carry out its fourth nuclear test at any time.

North Korea has called for the unconditional resumption of nuclear negotiations. But South Korea and the U.S. have demanded the North first demonstrate through action it stands by its own commitment to abandon its nuclear program before any negotiations reopen.

On civilian nuclear energy cooperation talks between the U.S. and South Korea, Ferguson said there are a few options the U.S. government can take with regard to Seoul's demand to use the so-called "pyroprocessing" technology, a reprocessing technology considered posing less proliferation risks because it leaves separated plutonium mixed with other elements.

Seoul wants Washington to allow it to use the technology because it can reduce the headache of disposing of nuclear waste in a nation with a small territory. But Washington has been reluctant to allow South Korea to do that due to proliferation concerns.

The 1974 nuclear cooperation pact, known as the 123 agreement, had been scheduled to expire in March. But the two countries extended it by two years to March 2016 as they failed to find a compromise. Negotiations to revise the pact have been under way, with the last round taking place in Washington last month.

In 2010, the two sides also launched a joint 10-year study to see if the pyroprocessing technology is feasible.

“If it works — we don’t know if it works, we‘re testing — if it works, it might allow the reduction of the volume of the waste to be stored and it can reduce the time required to store the waste,” Ferguson said of how effective the technology can be.

Ferguson said the U.S. could give Seoul temporary permission to use the technology pending on the results of the study or give permission to do certain types of activities based on what the sides have learned so far from the joint study.

“Another option could be we’ll give you advanced consent to do these activities,” Ferguson said. “You can do it for a period of time, 10 years, 20 years, 30 years. That‘s what the Korean negotiators want. That’s their preferred option ... and it‘s very similar to the agreement Japan, the U.S. agreed to in 1988.”

http://www.koreaherald.com/view.php?ud=20140707000533

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The Chosun Ilbo – Seoul, South Korea
July 9, 2014

N.Koreans Say Their Country's Nukes Are a Real Threat

Many North Koreans believe that their country's nuclear weapons present a real threat to South Korea and that its conventional military capacity is vastly superior.

The impression comes from a survey by the Chosun Ilbo and Center for Cultural Unification Studies among 100 North Koreans living in the Chinese border areas of Dandong and Yanji from January until May.

When asked how threatening the North's nuclear weapons are to the South, 53 of the 100 said "very threatening," and 13 "somewhat threatening."

Nine said "not so threatening" and 21 "no threat at all." Four were noncommittal.

One man from South Pyongan Province faithfully repeated Pyongyang's propaganda that it can turn Seoul into a "sea of fire" at the push of a button.

A respondent in his 40s speculated that the North would use nuclear weapons. Another said, "It would be dangerous because there would be a large number of casualties if nuclear bombs fell in densely populated parts of South Korea with many buildings and facilities."

But others believe their regime's threats are hot air. "There's just a lot of talk, but there are no nuclear weapons," one said.

Fifty-five of the 100 respondents believe the North's military capacity is greater than the South's, especially in terms of morale.

"Many people are saying they would give up their lives for the fatherland, the people, and the leader," a man from South Pyongan Province said.

"North Koreans have no choice but to obey their leader because they've lived under the socialist system for so long," another respondent said. "They'll fight in the war if Kim orders them to." He added, "If the Americans should provoke war with the North, even children would fight because we know how to handle rifles."

Another North Korean said, "Many people are frankly hoping that a war will break out because it's so difficult for them to make a living."

But others admitted that while the North is heavily militarized, it would succumb to combined American and South Korean forces. Others went further. "South Korea would overwhelm the North because it has imported many weapons from foreign countries," said one.

Another said, "How could North Korea possibly start a war? We're economically backward and the least developed country in the world."

http://english.chosun.com/site/data/html_dir/2014/07/09/2014070901702.html

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Channel NewsAsia – Singapore

Architect of N Korea Nuclear Weapons Programme Dies

North Korea announced on Wednesday the death of retired General Jon Pyong-ho, a chief architect of Pyongyang's ballistic missile and nuclear weapons programmes
Agence France-Presse (AFP)
July 9, 2014

SEOUL: North Korea announced on Wednesday the death of retired General Jon Pyong-ho, a chief architect of Pyongyang's ballistic missile and nuclear weapons programmes.

Jon, who retired from public life in 2011, died of a heart attack on Tuesday, the official KCNA news agency reported. He was 88.

He will be given a state funeral, with North Korean leader Kim Jong-un leading the funeral committee, said KCNA, which noted that Jon had "devoted all his life to the defence industry".

A close adviser of former leader Kim Jong-il, Jon was credited with directly managing North Korea's first nuclear test in October 2006.

According to the NK Leadership Watch website, Jon supervised the development of medium-range ballistic missiles in the 1990s, and offered the designs to Pakistan in exchange for detailed information on gas centrifuge technology and uranium enrichment.

In 2008 and 2009, Jon supervised the North's second major long-range missile test and its second nuclear test.

According to US intelligence reports, he was a key figure in the North's international weapons trade that involved shipping components for long-range missiles, nuclear reactors and conventional arms to countries including Iran, Syria and Myanmar.

Over the years, he was individually named in sanctions imposed on North Korea by the United Nations, United States and European Union.

In its tribute, KCNA noted Jon's "special contribution" to turning North Korea into a "satellite producer and launcher and a nuclear weapons state".

The announcement of his death coincided with the North test firing two short-range ballistic missiles into the Sea of Japan (East Sea).

http://www.channelnewsasia.com/news/asiapacific/architect-of-n-korea/1248008.html

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Want China Times – Taipei, Taiwan

Three Nuclear Subs Spotted Near PLA Navy's Hainan Base

Staff Reporter
July 10, 2014

The People's Liberation Army Navy has deployed three nuclear-powered ballistic missile submarines to its South Sea Fleet base on the southern island province of Hainan, according to the Manila-based InterAksyon news website in a report published July 8.

The Chinese navy displayed a photo on the internet which suggested that three Type 094 Jin-class ballistic missile submarines are currently stationed at the Yulin naval base in Hainan, according to the report. The paper surmised that the three submarines are there to enhance the power projection of the Chinese navy in any potential conflict against Vietnam or the Philippines in the South China Sea.

This may indicate the launch of regular sea patrols by Chinese missile submarines in the South China Sea from Hainan, according to the Washington Free Beacon. Samuel Locklear, US Pacific Command chief, told the website China's submarine force is large and very capable. Locklear told the US House Armed Services Committee this March that the PLA Navy will likely have a credible sea-based nuclear deterrent by the end of 2014.

China also has two Type 056 Jiangdao-class guided missile corvettes stationed in Hainan. The vessels, equipped with surface-to-air and surface-to-surface missiles, as well as a 76mm main gun and two 30mm cannon will begin to patrol the disputed waters as well, posing a threat to the operations of the Vietnamese and Philippine navies in waters near the disputed Spratly Islands.

http://www.wantchinatimes.com/news-subclass-cnt.aspx?id=20140710000149&cid=1101

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The Korea Herald – Seoul, South Korea

Kerry: U.S., China Agree on 'Urgency' of Denuclearizing N.K.

July 11, 2014

U.S. Secretary of State John Kerry said Thursday that Washington and Beijing agreed on the "important urgency" of swiftly curbing North Korea's nuclear weapons program, adding that they discussed "specific ways" to advance the goal of denuclearizing North Korea.

"The United States and China agreed on an important urgency of achieving a denuclearized, stable and prosperous Korean Peninsula, and we discussed specific ways in which we think can advance that goal," Kerry told reporters as the two nations ended a two-day U.S.-China dialogue in Beijing.

North Korea is one of the topics that were discussed at the sixth U.S.-China Strategic and Economic Dialogue, along with a broad range of diplomatic, economic and international issues concerning the two countries.

"China shares the same strategic goal, and we discussed the importance of enforcing U.N. Security Council resolutions that impose sanctions on North Korea's weapons of mass destruction and ballistic missile program," Kerry said.

However, Kerry said China needs to do more to reign in its unruly ally North Korea.

Kerry said China must play its "unique role" in persuading North Korea to give up its nuclear weapons program.

"We both understand that there's more we can do in order to bring North Korea into compliance with its obligations to denuclearize," Kerry said.

China's top foreign-policy maker, State Councilor Yang Jiechi, said Washington and Beijing affirmed the "importance of realizing the denuclearization of the Korean Peninsula through consultations."

North Korea, which has conducted three nuclear tests since 2006 and threatened to conduct a "new form of nuclear test," has repeatedly expressed willingness to reopen the six-party talks "without preconditions."

Although South Korea and the U.S. have called on China to play a greater role in leading North Korea to demonstrate its commitment to denuclearize before any resumption of the nuclear talks, Beijing's efforts have still been more accommodating toward North Korea. (Yonhap)

http://www.koreaherald.com/view.php?ud=20140711000830

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Want China Times – Taipei, Taiwan

China Developing New Hypersonic Missile: Report

Staff Reporter
July 11, 2014

The People's Liberation Army is developing a new jet-powered hypersonic cruise missile with the ability to carry out nuclear strikes against the continental United States, according to US defense expert Bill Gertz in a piece for the Washington Free Beacon on July 9.

Gertz said a line drawing of the scramjet-powered vehicle shows China's new hypersonic missile is identical to NASA's experimental X-43. Publications from China also indicate that the nation is pursuing a second type of ultra-fast maneuvering missile capable of traveling at speeds of up to Mach 10 or 8,000 miles per hour, after the Wu-14 high-speed glide vehicle tested earlier this year.

Gertz wrote in his article that the United States is developing both scramjet-powered and glide-hypersonic missiles while the Russian government has made development of hypersonic missiles a priority. China therefore needs to design its own scramjet-powered cruise vehicle capable of speeds greater than Mach 5 to meet this new challenge. Quoting from Chinese studies, Gertz said the strike vehicle can be used in an Anti-Access and Area Denial strategy against US aircraft carriers.

Such weapon systems may present an even greater threat to the national security of United States, however. Richard Fisher, an American expert on Chinese military development, said the scramjet-powered vehicle is better than the Wu-14 at complicating efforts by US missile defenses to intercept it. Fisher said China has identified hypersonics as a critical future military technology and invested heavily in it.

Fisher wrote, "The old Bush administration concept of Prompt Global Strike using hypersonic non-nuclear warheads may be dormant in Washington, but it is very much alive and flourishing in Beijing."

Meanwhile Lee Fuell, a technical intelligence specialist at the Air Force National Air and Space Intelligence Center, told a congressional hearing that hypersonic strike vehicles may be used for conventional precision-guided strikes as well as nuclear attacks.

http://www.wantchinatimes.com/news-subclass-cnt.aspx?id=20140711000027&cid=1101

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Russia Beyond the Headlines (RBTH) – Moscow, Russia

Russia to Upgrade Missile Attack Warning System

The Oko-1 ballistic missile early detection system, which formed part of Russia's missile attack warning system (MAWS), is to be superseded by a new unified outer space system capable of tracking tactical missiles as well as ballistic ones.
Tatyana Rusakova, RBTH
July 4, 2014

It came to light recently that the last geostationary satellite of the Oko-1 ballistic missile early detection system had gone out of commission. The 71H6 apparatus, put into orbit in March 2012, was operational for only a third of its expected working life.

The loss of the satellite weakened the outer space segment of the missile attack warning system (MAWS), which is one of the main elements of the country's strategic defense system.

Igor Lisov of trade magazine Cosmonautics News told RBTH that MAWS is still fully operational. Despite the fact that the geostationary satellites have been lost, the Cosmos-2422 and Cosmos-2446 satellites, which operate in high orbits, are still running.

According to Lisov, geostationary satellites and high-orbit satellites can typically compensate for one another, but under the current circumstances, it is difficult to confirm that this is the case here. Only two of the four satellites are in normal operation, which is the bare minimum necessary to do the job. The remaining satellites are struggling to cope with the workload.

Oko loss leads to launch of a unified outer space system

According to an RBTH source close to the Ministry of Defense, the lack of geostationary satellites is being compensated for by new horizon radar systems known as Voronezh-M and Voronezh-DM.

Located in the Kaliningrad, Leningrad, Irkutsk, and Krasnodar regions, these stations operate in two frequency ranges: the meter range (Voronezh-M) and the decimeter range (Voronezh-DM). They create a radar field, which makes it possible to easily detect space objects and effectively prevent missile attacks.

According to the source, Oko-1 will not be reinstated at any point. The system was hopelessly outdated, having been created during the Soviet era. Now the Ministry of Defense has tasked itself with creating a unified outer space system.

The new system will perform at a higher level, and will track not only ballistic missiles, but tactical ones as well. The new system's first satellite will be launched later this year, but the exact date has not yet been announced.

Anytime, anyplace

MAWS is one of the most important deterrents to missile attacks. It contains a radar station, horizon detection, a group of artificial earth satellites, and radar horizon detection. The first part of the MAWS system, which went operational in 1971, could launch ballistic missiles at any time in just a matter of seconds, in real time, and with high reliability.

Its mission was to inform the state's leadership of the launch of ballistic missiles from anywhere in the world. The early warning detection system was the last word in the retaliatory decision-making process.

Initially, MAWS worked from radar stations, which were based far away from major residential areas. Erected around the perimeter of a country, the surveillance zone stations monitored areas from which missiles could be launched.

However, by virtue of its design, the horizon radar "saw" intercontinental ballistic missiles launched from United States territory, as well as missiles launched from submarines in the ocean, only as they were on the downward leg of their flight trajectory.

This meant that missile radar warnings could only be issued rather late within a territory, which did not allow for much time in the decision-making process.

This design flaw led radar groups to add a set of tools that would make it possible to immediately detect missiles at the beginning of the launch phase, regardless of location.

MAWS space echelon

In the early 1970s, the idea originated for a missile warning system that was space-based and designed according to a tier system. By 1979, the system was launched, and in 1982, the first of four generations of 74D6 (US-K or Oko) satellites for high orbits was placed on alert.

The satellite was only able to track missile launches from within the U.S. In addition to the satellites that have been in operation since 1984, a US-KS (Oko-S) satellite has also been in geostationary orbit.

In 1991 a second-generation system went into parallel development: the Oko-1 (US-KMO) and 71X6 geostationary satellites. The upgraded Oko-1 system was also able to record sea-based missile launches and determine their flight trajectory. The complete system was to include up to seven devices, but the last one was put out of commission in June 2014 due to a technical failure.

http://rbth.com/defence/2014/07/04/russia_to_upgrade_missile_attack_warning_system_37961.html

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ITAR-TASS News Agency – Moscow, Russia

Rearmament of Russia's Strategic Missile Forces to be completed by 2020

The budget of the Russian Defense Ministry's state armaments program for the period up to 2020 is estimated at $17.5 billion
July 04, 2014

MOSCOW, July 04. /ITAR-TASS/. Russia's Defense Ministry plans to complete the rearmament of Strategic Missile Forces within six years.

"By 2016, the share of new missile systems will reach nearly 60%, and by 2021 their share will increase to 98%. At the same time the troop and weapon command systems, combat equipment will be qualitatively improved, first of all — their capabilities for the suppression of antimissile defense will be built up," Defense Ministry's RVSN spokesman Colonel Igor Yegorov told ITAR-TASS on Friday.

The delivery of new armaments, including the Yars systems, continues this year to the Novosibirsk, Tagil and Kozelsk missile formations. "At this stage, operations for their acceptance and commissioning are underway," Yegorov said. He noted that more than 100 units of equipment had been delivered to these formations last year. "The work for the creation of new infrastructure of positioning areas of missile regiments continues, it will ensure better conditions for the use of armaments and training of the alert forces," Yegorov said.

The budget of the Russian Defense Ministry's state armaments program for the period up to 2020 is estimated at $600 billion. Russia's Deputy Defense Minister Yuri Borisov said on Thursday that "about 80% of the funds are planned for the purchase of modern and advanced samples of armaments and military equipment." By 2020, the share of modern samples of armaments and equipment in the army will reach 70%

In late 2013, Chief of the Russian General Staff Valery Gerasimov said that the share of modern armaments and military equipment had reached 62% in the Aerospace Defense Forces, 45% — in the Strategic Nuclear Forces, 52% — in the Navy and 42% — in the Air Force. In the Ground Forces it had been equal to 21% then.

http://en.itar-tass.com/russia/739004

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ITAR-TASS News Agency – Moscow, Russia

Russia Successfully Test-Launches Long-Range Interceptor Missile for Defense System S-500

Air defense missile system S-500 combat capabilities are planned to surpass air defense missile system S-400 Triumf currently in combat service
July 07, 2014

MOSCOW, July 07. /ITAR-TASS/. Russia has successfully test-launched a long-range interceptor missile which will be brought into service of a promising air defense missile system S-500, a source in the defense and industrial complex told ITAR-TASS on Monday.

"Test-launches were made in late June. All goals and tasks set within this event were fulfilled completely," the source noted.

He noted that air defense system-producing concern Almaz-Antey was developing an air defense missile system of new generation S-500 fully in line with the deadlines set in the state-funded armament program until 2020.

According to open sources, S-500 will be able to detect and hit simultaneously up to ten ballistic targets flying with a speed of up to seven kilometres per second and warheads of hypersound cruise missiles. Air defense missile system S-500 combat capabilities are planned to surpass air defense missile system S-400 Triumf currently in combat service and its US rival - a defense missile system RAS-3, the latest model of air defense missile system Patriot.

http://en.itar-tass.com/russia/739278

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RIA Novosti – Russian Information Agency

Russia's Iskander-E Missile System Ready for Deliveries to Other Countries

10 July 2014

MINSK, July 10 (RIA Novosti) – Iskander-E mobile theater ballistic missile systems are ready for export, awaiting a decision by state authorities, the head of the Russian delegation to arms and military exhibition MILEX-2014 Valery Varlamov said Thursday.

"Iskander-E [NATO reporting name: SS-26 Stone] is ready for deliveries to other countries, as well as S-400 Triumf [NATO reporting name: SA-21 Growler], but the state authorities need to approve it first," Varlamov said.

The representative said that Russia "will deliver [the systems] to any country, if there is such a decision of the president and the government."

A few years ago, the Russian Defense Ministry announced that S-400 will be produced only in the interests of Russia. Even partners such as Belarus and Kazakhstan will receive them only after the Russian missile defense system is fully equipped, the ministry said.

No such statements have been made about Iskander in public, but in practice the situation is the same, a source in the Russian military-industrial complex told RIA Novosti.

Iskander is one of the country's most powerful missile strike systems used in the nation's ground forces. Iskander missiles are nuclear-capable and can make use of different types of reentry vehicles to engage a wide range of targets, from enemy military units to underground command centers.

Iskander systems were successfully tested in 2007. The Russian Army currently uses its Iskander-M and Iskander-K variants. Iskander-E is an export version, with just one rocket on the ballistic missile launcher instead of two, and a range of up to 174 miles.

http://en.ria.ru/military_news/20140710/190874446/Russias-Iskander-E-Missile-System-Ready-for-Deliveries-to-Other.html

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Daily Sabah – Istanbul, Turkey

Two Abandoned Cylinders Seized in Syria Contained Sarin: UN

Reuters
July 07, 2014

UNITED NATIONS – Two cylinders reportedly seized by Syrian government troops in an area controlled by armed opposition groups contained deadly sarin, U.N. Secretary-General Ban Ki-moon said in a letter to the U.N. Security Council published on Monday.

Ban said that on June 14, the Organisation for the Prohibition of Chemical Weapons (OPCW) United Nations Joint Mission overseeing the destruction of Syria's chemical stockpile analyzed the contents of the cylinders.

"The Joint Mission confirmed that these contained sarin," said Ban's letter. The letter said the cylinders were "reportedly seized by the armed forces of the Syrian Arab Republic in August 2013 in an area reportedly under the control of armed opposition groups."

OPCW chief Ahmet Uzumcu said in a report attached to Ban's letter that the Syrian government declared the cylinders "as abandoned chemical weapons," but neither Uzumcu nor Ban stated when they were handed over to the joint mission.

Uzumcu said the Syrian government told the OPCW "the items did not belong to it." Ban said the joint mission was discussing with the Syrian government how to destroy the cylinders and their contents. It was unclear if they had yet been destroyed.

An OPCW report in October mentioned Syrian authorities had found two cylinders, but it was not clear if the cylinders had been handed over to the joint mission at that time.

Syria agreed last September to destroy its entire chemical weapons programme under a deal negotiated with the United States and Russia after hundreds of people were killed in a sarin gas attack in August on the outskirts of the capital, Damascus.

The agreement averted U.S. military strikes in response to the worst chemical weapons attack in decades, which Washington and its European allies blamed on the government of President Bashar al-Assad. Assad blamed the chemical attack on rebels fighting to oust him.

Syria's civil war, now in its fourth year, has killed more than 150,000 people. The United Nations says 10.8 million people need help, while three million others have fled.

Sigrid Kaag, head of the joint mission, briefed the U.N. Security Council behind closed doors on Monday. Syria handed over the final consignment of its declared 1,300 tonnes of chemicals on June 23. The toxins have been removed from Syria for destruction at sea or in other countries.

But Ban's June 26 letter listed tasks still to be completed for the full elimination of the chemical weapons programme, including "the conclusion of ongoing consultations regarding any possible remaining discrepancies in the original declaration."

Kaag's mission has asked Assad's government to clarify these disparities in its initial declaration of toxic materials.

"It is now essential that every effort be made to achieve the full elimination of the chemical weapons programme of the Syrian Arab Republic at the very earliest opportunity, including the destruction of remaining production facilities and the resolution of any possible remaining technical discrepancies in the original declaration," Ban wrote in the letter.

http://www.dailysabah.com/mideast/2014/07/07/two-abandoned-cylinders-seized-in-syria-contained-sarin-un

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The London Daily Guardian – London, U.K.

Iran Needs Greater Uranium Enrichment Capacity, Says Ayatollah Ali Khamenei

Iran's supreme leader seeks right to carry out industrial-scale enrichment in order to meet its long-term energy needs

By Saeed Kamali Dehghan and Julian Borger
Tuesday, 8 July 2014

Iran's supreme leader said late on Monday that his country would need to significantly increase its capacity to enrich uranium if it was to meet its long-term energy needs, in an unusually detailed speech highlighting the obstacles to a deal on its nuclear programme.

Ayatollah Ali Khamenei conceded that Iran would not need to immediately increase its capacity but made clear that his government sought the right to carry out industrial-scale enrichment in order to be self-sufficient in nuclear fuel for its research reactors and a Russian-built power station at Bushehr.

Enrichment capacity is the main obstacle to a comprehensive agreement between Iran and six major powers taking part in talks in Vienna. Western negotiators want Iran to be restricted to a research-scale capability to minimise the risk it could build a nuclear weapon at short notice but by publicly stating Iran's position, Khamenei could have made it harder for his negotiators to compromise.

"It is very unhelpful to say that in public," said Mark Fitzpatrick, a former US state department non-proliferation expert now at the International Institute for Strategic Studies in London. "It's nothing different from what the Iranian negotiators have said privately, but to say it publicly boxes in the negotiators and makes it harder to climb down."

"The silver lining is that he says Iran doesn't need this capacity immediately but that doesn't help much. The six powers will argue Iran doesn't need industrial-scale enrichment. It would be terribly unsafe for Iran to use domestically-fabricated fuel in Bushehr. Khamenei has just made it harder to get a deal."

Iran currently has 19,000 centrifuges installed at its enrichment plants in Natanz and Fordow, but only about 10,000 are operational. The negotiating states in Vienna – the US, UK, France, Germany, China and Russia – have hitherto insisted on fewer than 10,000 in total so it would take Iran more than six months to change its civilian programme to a military one and build a warhead.

In the remarks made to senior Iranian officials including the country's president, Hassan Rouhani, Khamenei did not talk about Iran's needs in terms of numbers of centrifuges but overall enrichment capacity, expressed in a specialist term, "separative work units" or SWU, measured in kg per year.

"On the issue of enrichment capacity, their [the west's] aim is make Iran accept 10,000 SWU," Khamenei said. "Our officials say we need 190,000 SWU. We might not need this [capacity] this year or in the next two or five years but this is our absolute need and we need to meet this need."

The old centrifuges Iran is currently using, known as IR-1s, are currently running on a capacity of below one SWU a year, so Khamenei's target would require more than 200,000 of them, over 20 times the proposed limit. However, the head of Iran's atomic energy organisation, Ali Akbar Salehi, pointed out that Iran was working on much more sophisticated centrifuges, including IR-6s which he claimed would have a capacity of 24 SWU, comparable with modern western machines. In that case, Iran would only need 7,000 of them.

However, nuclear experts say that Salehi's ambitions sound far-fetched. Iranian technicians have been struggling for years to perfect a second generation machine, the IR-2m, with a theoretical capacity below seven SWU. Furthermore, if such powerful centrifuges were used, the west would insist they be used in far smaller numbers.

"The fight over centrifuge capacity is mirroring the full 35-year clash between the US and Iran: The US wants Iran to back down and accept American preeminence," Trita Parsi, the head of the National Iranian American Council, an advocacy group in Washington, said.

"Iran wants to reclaim its dignity by standing firm in face of what it sees as bullying. In that sense, the centrifuge numbers have taken on a much deeper and more worrisome meaning."

However, Parsi pointed out there could be some room for flexibility reflected in Khamenei's remarks. "It's interesting that he refers to what the experts say, rather than coming down hard with his own firm stance. Also, he keeps the timeline undetermined, which can open the way for compromise."

http://www.theguardian.com/world/2014/jul/08/iran-increase-uranium-enrichment-capacity-supreme-leader-ali-khamenei

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Chicago Tribune – Chicago, IL

Kerry, Ministers May Join Struggling Iran Nuclear Talks: Diplomats

By Louis Charbonneau and John Irish, Reuters
July 8, 2014

PRAGUE/PARIS (Reuters) - U.S. Secretary of State John Kerry and other foreign ministers from the six powers negotiating with Iran on its nuclear program may travel to Vienna soon to join the talks, which have failed so far to produce a deal, diplomats said on Tuesday.

The possible arrival of the ministers ahead of a July 20 deadline for an agreement should not be seen as proof that negotiators from Iran, the United States, Britain, France, Germany, Russia and China are on the cusp of a deal, the diplomats cautioned.

"The ministers can help negotiate an extension of the negotiations, if that's deemed useful, and they could help generate momentum to get a deal by July 20, which remains our goal," a Western close to the talks diplomat told Reuters on condition of anonymity.

"Of course, the ministers could also sign an agreement but we're far from signing anything at the moment," the diplomat added. "There are significant gaps in positions."

The goal of the negotiations is to reach a long-term agreement under which Iran would curb its nuclear program in exchange for the gradual lifting of international sanctions, which have hobbled Iran's oil-dependent economy.

A preliminary deal struck in Geneva between Iran and the six last November gave Tehran limited sanctions relief to buy time for negotiating a comprehensive agreement in exchange for suspending some of its most sensitive atomic work.

Ministers from the six powers came to Geneva twice during the two months of negotiations with Iran last year and secured a preliminary agreement on their second trip. But Western diplomats said expectations that the ministers would be able to secure a deal now in Vienna are low.

Iran rejects allegations from Western powers and their allies that it is pursuing the capability to produce atomic weapons under cover of a civilian nuclear energy program. It has refused to halt enrichment as demanded in numerous U.N. Security Council resolutions, resulting in crippling sanctions.

It was not clear when the ministers would come to the Austrian capital, if they decide to do so, though some diplomats suggested it could be as early as the end of this week. Others said a later date was more likely.

"We're still far from a deal," a Western diplomat said. "The deadline is July 20 and that's what we're working towards. If the ministers go I would envisage it being closer to then than in mid July."

Iran's Supreme Leader Ayatollah Ali Khamenei said on Tuesday Iran would need to significantly increase its uranium enrichment capacity over the long term, underlining a gap in positions between Tehran and world powers but also potentially signaling some flexibility in the short term.

Iran and the six have less than two weeks to bridge wide differences on the future scope of Iran's enrichment program and other issues if they are to meet a self-imposed July 20 deadline for a deal.

They resumed talks in Vienna last week and their negotiators continued meetings in Vienna on Tuesday, but there was no immediate sign of any substantive progress on the main sticking points, which include uranium enrichment, the length of any agreement and the speed at which sanctions would be lifted.

The preliminary agreement reached in Geneva in November included the possibility of extending the negotiations for up to six months. Western diplomats say that negotiating an extension could be complicated but may be necessary given the wide gaps in positions between Iran and the six powers.

Additional reporting by Fredrik Dahl in Vienna and Lesley Wroughton in Beijing; editing by Ralph Boulton

http://my.chicagotribune.com/#section/-1/article/p2p-80744208/

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Tehran Times – Tehran, Iran

Leader: There's Mechanism to Guarantee No Diversion to Nuclear Weapons

Wednesday, July 09, 2014

TEHRAN – The Supreme Leader of the Islamic Revolution said on Monday that the West wants Iran to close the Fordo nuclear enrichment site because this facility is safe from any attack, calling the demand "comical".

Fordo, dug into a mountain near the city of Qom, is safe from air attack.

"On the Fordo facility they say since this facility is not accessible and cannot be harmed it should be closed and this statement is comical," Ayatollah Seyyed Ali Khamenei told a gathering of senior and mid-ranking Iranian officials.

The remarks by the Leader came as nuclear negotiations between Iran and the major powers (the five permanent members of the UN Security Council and Germany) are underway in Vienna. The talks, which started last Wednesday, are aimed at ending more than ten years of nuclear dispute between Iran and the West.

The main sticking points in the talks are the number of centrifuges that Iran can have operating, installation of advanced centrifuges by Iran to refine uranium, and the Fordo enrichment site which the West wants turn to another use.

The United States' strongest backers at the negotiating table are Britain, France, and Germany, with Russia and China leaning to agreeing on any deal acceptable to Tehran and Washington.

No limit to enrichment capacity

The Leader said the West wants Iran to consent to 10,000 centrifuges while these numbers of centrifuges, which are old, are already in operation and the concerned nuclear officials say that Iran "surely" needs about 190,000 centrifuges.

Ayatollah Khamenei went on to say that the United States' opposition to Iran's uranium enrichment capacity is "illogical" because there are mechanisms which "guarantee" no diversion toward nuclear weapons.

"There are transparent ways as well as responsible bodies (the UN nuclear watchdog) which guarantee no access to nuclear weapons and the Islamic Republic of Iran sees no problem in this regard."

The Leader also said Iran "trusts" its nuclear negotiators and it is sure that they will not allow the country's nuclear rights to be compromised.

He also said Iran's right to nuclear research and development is something which should be "seriously" observed in the nuclear negotiations.

http://tehrantimes.com/component/content/article/94-headline/116865-leader-theres-mechanism-to-guarantee-no-diversion-to-nuclear-weapons

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FARS News Agency – Tehran, Iran
Wednesday, July 09, 2014

Iraq: ISIL Seizes Former Chemical Weapons Complex

TEHRAN (FNA) - Iraq warned that the ISIL Takfiri terrorists have taken control of a huge former chemical weapons facility Northwest of the capital Baghdad.

In a letter distributed on Tuesday at the United Nations, Iraq said remnants of 2,500 chemical rockets filled with the deadly nerve agent sarin are kept along with other chemical warfare agents in the facility. On June 12, the site's surveillance system showed that some equipment was looted, press tv reported.

Iraq's Ambassador to the UN Mohamed Ali Alhakim told UN Secretary General Ban Ki-moon in the letter that "armed terrorist groups" penetrated the Muthanna site on June 11, and detained officers and soldiers from the protection force guarding the facilities.

He said that his country is not capable of fulfilling "its obligations to destroy chemical weapons" due to the deteriorating security situation in the complex.

"The government will resume its efforts with regards to its obligations as soon as the security situation has improved and control of the facility has been regained," Alhakim added.

He singled out the capture of bunkers 13 and 41 in the compound 35 miles (56 kilometers) Northwest of the capital. Based on the last report by UN inspectors, bunker 13 contained 2,500 sarin-filled 122-mm chemical rockets along with about 180 tons of sodium cyanide, which is "a very toxic chemical and a precursor for the warfare agent tabun".

Bunker 41 also held 2,000 empty 155-mm artillery shells contaminated with the chemical warfare agent mustard, 605 one-ton mustard containers with residues, and heavily contaminated construction material.

Violence in Iraq escalated after the ISIL terrorists took control of Mosul, in a lightning advance on June 10, which was followed by the fall of Tikrit, located 140 kilometers (87 miles) Northwest of Baghdad.

An estimated 1.2 million people have been displaced in Iraq so far this year, according to estimates by the UN.

The ISIL terrorists have vowed to continue their raid towards Baghdad. Iraqi Prime Minister Nouri al-Maliki has said that the country's security forces would confront the terrorists, calling the seizure of Mosul a "conspiracy".

Soldiers of the Iraqi army have been engaged in heavy fighting with the terrorists in different fronts and have so far been able to push them back in several areas.

http://english.farsnews.com/newstext.aspx?nn=13930418000576

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The Jordan Times – Amman, Jordan

Iran Says It Offers Ways to Ease Impasse over Underground Nuclear Plant

Reuters
July 10, 2014

DUBAI — Iran said on Wednesday it had offered ways to address foreign concerns over its underground Fordow uranium enrichment plant, hinting at flexibility on a serious obstacle to a nuclear deal with big powers as a self-imposed July 20 deadline nears.

It was not immediately clear whether the Iranian suggestions were far reaching enough to bridge the gap over Fordow, one of a handful blocking progress towards a long-term agreement that would improve stability in a Middle East riven by conflicts.

France, one of the powers, had said on Tuesday that none of the main outstanding issues in the talks, including Fordow, had been settled and that the United States wanted foreign ministers to join in to help overcome deadlocks.

The United States, Russia, France, Germany, China and Britain want to cap Iran's capacity to enrich uranium to ensure Iran cannot accumulate potential fuel for atomic bombs. In return, Iran would be rid of sanctions crippling its economy.

Iran denies any intention to derive bomb material from enriched uranium or that it is seeking the technical know-how and means to assemble a nuclear weapon. It says it wants to refine uranium only for civilian energy purposes.

Western powers have in the past called on Iran to shut down Fordow, regarding the plant — built in a fortified bunker deep underground and protected by anti-aircraft batteries — as ideally suited to enriching uranium to weapons-grade.

Iran also has a larger, older enrichment site at Natanz that is better known to UN nuclear inspectors, although the powers seek curbs on the numbers of centrifuges — now an estimated 9,000 — enriching uranium at Natanz as well.

"One proposal is changing the Fordow site into a research and development and back-up site for Natanz," said Ali Akbar Salehi, head of Iran's Atomic Energy Organisation, according to comments carried by IRNA.

Research site as compromise?

Some Western experts have suggested that turning Fordow into some kind of research facility could be a possible compromise, but that may not be enough for hawks in the United States and Israel, Iran's two arch-adversaries.

Iran used Fordow to enrich uranium to 20 per cent fissile purity — ostensibly to fuel a Tehran medical research reactor but also just a short technical step away from bomb-grade material — but halted that activity in January under an interim nuclear deal struck with the powers in Geneva last November.

Tehran is now producing low-enriched — or 5 per cent — material usable for nuclear power plant fuel at Fordow, running some 700 of 2,700 centrifuges it has installed there.

In the past, Iran had ruled out closing any of its nuclear sites, which include a planned heavy-water reactor at Arak with the potential to yield plutonium — another primary fissile ingredient in atomic bombs — along with highly enriched uranium.

Another idea, Salehi was quoted by IRNA as saying, was to convert Fordow into a physics and space radiation laboratory offering services to other countries.

"Agreeing to its conversion into a research and development facility is a concession," said Ali Vaez, Iran expert at the International Crisis Group. He noted that both sides have shown flexibility on issues such as Arak and Fordow in the past.

But he cautioned: "The problem right now is that they simply can't bridge the gap on the [main] contentious issues like [levels of] enrichment and sanctions relief."

Western experts say Iran could now produce enough highly enriched uranium for a bomb in two to three months, a timeline they say should be extended to at least a year. Iran says that even if it wanted such weapons, which it denies, it would take much longer.

http://jordantimes.com/iran-says-it-offers-ways-to-ease-impasse-over-underground-nuclear-plant

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The Sydney Morning Herald – Sydney, Australia

Iraq Tells UN that 'Terrorist Groups' Have Seized Nuclear Materials

July 10, 2014
By Michelle Nichols, Reuters

New York**:** ISIL insurgents in Iraq have seized nuclear materials used for scientific research at a university in the country's north, Iraq has told the United Nations in a letter appealing for help to "stave off the threat of their use by terrorists in Iraq or abroad".

Nearly 40 kilograms of uranium compounds were kept at Mosul University, Iraq's UN Ambassador Mohamed Ali Alhakim told UN Secretary-General Ban Ki-moon in a letter this week.

"Terrorist groups have seized control of nuclear material at the sites that came out of the control of the state," Mr Alhakim wrote, adding that such materials "can be used in manufacturing weapons of mass destruction". However, US security sources said it would be difficult to make weapons from the material.

"These nuclear materials, despite the limited amounts mentioned, can enable terrorist groups, with the availability of the required expertise, to use it separate or in combination with other materials in its terrorist acts," Mr Alhakim said.

He warned that they could also be smuggled out of Iraq.

A US government source familiar with the matter said the materials were not believed to be enriched uranium and therefore would be difficult to use to manufacture into a weapon. Another US official familiar with security matters said he was unaware of this development raising any alarm among US authorities.

The Islamic State in Iraq and the Levant, a Sunni Muslim group that has declared itself the Islamic State, is spearheading a patchwork of insurgents who have taken over large swaths of Syria and Iraq.

Iraq acceded to the Convention on the Physical Protection of Nuclear Material on Monday, said the International Atomic Energy Agency. The convention requires states to protect nuclear facilities and material in peaceful domestic use, storage and transport.

"It also provides for expanded co-operation between and among states regarding rapid measures to locate and recover stolen or smuggled nuclear material, mitigate any radiological consequences of sabotage, and prevent and combat related offences," according to the IAEA.

http://www.smh.com.au/world/iraq-tells-un-that-terrorist-groups-have-seized-nuclear-materials-20140710-zt2eb.html

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Asahi Shimbun – Tokyo, Japan

In Compromise, Iran Proposes IAEA Oversight of Uranium Enrichment Program

By DAISUKE KANDA, Correspondent
July 11, 2014

TEHRAN--Iran has offered a compromise proposal that would place its uranium enrichment program under the oversight of the International Atomic Energy Agency, an Iranian government source said.

The proposal, made in talks in Vienna between Iran and the five permanent members of the U.N. Security Council along with Germany, would allow the IAEA to oversee the scale, period and locations of Iran’s uranium enrichment program, the source said.

Discussions between Iran and the six nations will continue until July 15. The interim agreement reached last November faces a July 20 deadline, so the two sides are seeking a more comprehensive agreement that would effectively resolve concerns about Tehran's nuclear program.

Under the interim agreement, Iran will reduce the size of its nuclear program, including a suspension of the installation of new centrifuges and a halt to enriching uranium beyond 5 percent. In exchange, the six nations will lift some economic sanctions, such as the freeze on $4.2 billion (about 426 billion yen) in Iran's petroleum export revenues.

The major point of contention in the ongoing talks is the number of centrifuges Iran can use to enrich uranium. The compromise is intended to push forward the negotiations and allow Iran to continue with plans to construct new nuclear power plants.

Tehran has argued that it should be allowed to continue with uranium enrichment to manufacture the nuclear fuel rods used in the power plants.

According to the government source, Tehran is asking that it be allowed to install about 8,000 advanced IR-6 centrifuges under the new proposal. That number would produce enough nuclear fuel for a year's operation at 1.6 plants with a capacity of 1 gigawatt.

As a compromise, Iran says it will not operate any nuclear plant without IAEA approval; the IAEA would be given authority to decide the number of nuclear plants to be operated as well as the period of operation; and the centrifuges would be installed in a location where IAEA inspectors could freely monitor them.

Although Iran currently possesses about 19,000 centrifuges, about 90 percent are older types designed in the 1970s. Tehran plans to convert those centrifuges to the more advanced IR-6 ones over a period of about eight years and discard the older centrifuges.

The six nations in the Vienna talks with Iran argue that 8,000 IR-6 centrifuges are too many. There are also concerns that should the IAEA no longer be able to monitor the centrifuges due to a shift in Iranian policy brought about by a change in government, Tehran would be able to develop nuclear weapons within a few months.

That is another reason the six nations are asking that Iran scale back the number of centrifuges it wants to use.

Past history also makes it difficult for the six nations to readily trust Iran on its nuclear program. In 2009, for example, Iran admitted to the existence of underground nuclear facilities which it had denied in the past.

http://ajw.asahi.com/article/asia/around_asia/AJ201407110032

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The Economic Times – New Delhi, India

Iran Preparing to Start Plant Needed for Interim Nuclear Deal: Sources

By Reuters
11 July, 2014

(Reuters) - Iran has taken preparatory action to start a delayed uranium conversion plant it needs to fulfil an interim nuclear agreement reached with six world powers last year before the accord expires this month, diplomatic sources said.

The start-up of the facility would show Iran's commitment to the landmark Nov. 24 deal as it holds talks with the United States, Russia, France, Germany, Britain and China on a long-term settlement of the dispute over its atomic aims.

But in view of still wide gaps in negotiating positions, some diplomats and experts believe the negotiations - and the preliminary agreement - may need to be extended.

Under the accord that runs for six months until July 20, Iran is supposed to convert a large amount of low-enriched uranium gas into an oxide form that would be less suitable for processing into nuclear bomb material. It was one of the terms of the deal that won Tehran some easing of sanctions.

To be able to do that, it has been building a facility near the central city of Isfahan for turning the gas into powder.

After months of delays, the U.N. International Atomic Energy Agency (IAEA) in May said the plant's commissioning had begun, but it was still not operating.

Since then, however, the sources said practical steps had been taken indicating the work could start soon, if it had not already. They include removal of IAEA seals on a uranium gas cylinder, necessary before connecting it to the conversion line.

With time running short, the issue is closely watched by diplomats monitoring Iran's compliance with the November accord.

It was negotiated to buy time for talks on a permanent agreement intended to remove the risk of a new Middle East war over Iran's nuclear aspirations, which it says are peaceful but the West fears aim to develop a nuclear weapons capability.

Those negotiations began in February and resumed last week in Vienna with the aim of hammering out an accord by a self-imposed July 20 deadline, replacing the interim deal.

BIGGER URANIUM STOCKPILE

While Iran under last year's agreement halted its most proliferation-sensitive work, enrichment to a fissile concentration of 20 percent, it is allowed under the pact to continue producing uranium gas refined to up to 5 percent.

However, reflecting Western concern also about this reserve, Iran undertook not to increase it so that it is not larger by the end of the half-year accord than what it was when it took effect on Jan. 20, Western diplomats have said.

IAEA reports have shown that Iran is meeting all the other requirements under the interim agreement.

Iran says it is producing low-enriched uranium to fuel a planned network of nuclear power plants, not to develop bombs. Uranium must be enriched to a high degree - about 90 percent fissile purity - for a nuclear weapon.

Experts say Iran potentially has enough of this kind of uranium gas for a few nuclear weapons if enriched much further. Limiting its overall enrichment capacity is one of the thorniest issues in the negotiations on a final deal.

Because of the conversion facility's delay, the low-grade uranium stockpile has grown to nearly 8.5 tonnes in May from 7.6 tonnes in February, according to IAEA reports. Experts say Iran will be able to convert a large amount in a relatively short time once the facility required for this is up and running.

http://economictimes.indiatimes.com/news/international/world-news/iran-preparing-to-start-plant-needed-for-interim-nuclear-deal-sources/articleshow/38217567.cms

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Defence Radar.com – India

India Contemplates Anti-Satellite Vehicle Integration with Agni-III Ballistic Missile

July 6, 2014

India’s varied missile capabilities are catching up to be at par with those of the US and China, as talks revolve around integrating the Agni-III ballistic missile with a satellite kill vehicle. According to former DRDO Chief V K

Saraswat, India is considering the feasibility of developing an anti-satellite missile which will lend a superior edge to India's missile power. It would involve the development of lasers and an exo-atmospheric kill vehicle.

During a speech regarding DRDO's upcoming challenges and defence projects, Former DRDO Chief Saraswat touched upon the crucial issue of the anti-satellite vehicle, a capability which hitherto lies with the U.S, Russia and China. The development of an anti-satellite vehicle is feasible if the Agni-III missile and the Ballistic Missile Defence (BMD) kill vehicle are integrated. The DRDO Chief added that the effective range, which is about 1400-1500 kilometers, is sufficient to engage a satellite. India is known to have been developing an exo-atmospheric kill vehicle that can be integrated with the missile to engage satellites.

In the recent past, former DRDO Chief V.K Saraswat had stated that India had all the building blocks necessary to integrate an anti-satellite weapon to neutralize hostile satellites in low earth and polar orbits. The Agni series of missiles already contained the propulsion module and a kill vehicle already existed in principle although it had not been formalized. According to DRDO, the Indian Ballistic Missile Defence Program can incorporate the anti-satellite weapon development. India purports development of anti-satellite weapons for electronic or physical destruction of satellites in both LEO or Low Earth Orbit (2,000 kilometers altitude above earth's surface) and the higher GEO-synchronous orbits.

In an earlier statement, Dr. Saraswat said that while work on individual components of the system is going on, the anti-satellite (A-Sat) weapon will be built and tested only if and when the country needs it. He added that India must not lag behind in terms of space security. In addition, India has conducted many successful tests of its ballistic missile defence system wherein an "attacker" ballistic missile at an altitude of 120 kilometers was destroyed with an interceptor missile.

Besides discussing the issue of ant-satellite weapons, former DRDO Chief also talked of other crucial defence projects like the creation of a new engine besides the upgradation of Kaveri engine. While upgrade of Kaveri engine can continue, a new engine with variable cycle can be developed for the indigenous Advanced Medium Combat Aircraft (AMCA). He added that advanced integrated controls, reduced infrared signatures, advanced avionics, stealth materials such as radar absorbing paint, advanced composites and hypersonic materials are some areas that need further development. Besides, areas such as network centric warfare need attention just as urgently as means of combating nuclear biological warfare need to be developed.

Source: *Defence Now*

http://defenceradar.com/2014/07/06/india-contemplates-anti-satellite-vehicle-integration-with-agni-iii-ballistic-missile%E2%80%8B/

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Pakistan Today – Lahore, Pakistan

Third Pakistani Nuclear Reactor Operational: IPFM

By Independent News Pakistan (INP)
July 6, 2014

Using commercial satellite imagery from March 2013 and December 2013, IPFM says the Khushab III reactor now appears operational due to water vapour rising from its cooling towers, but the Khushab IV reactor is still under construction.

Pakistan's third plutonium-producing reactor is in service at its Khushab nuclear site and is likely to have already produced fuel, claimed a foreign magazine, quoting the International Panel on Fissile Materials (IPFM).

According to reports, the IPFM, "an independent group of arms-control and non-proliferation experts from both nuclear weapon and non-nuclear weapon states", has highlighted the latest developments in Pakistan's plutonium programme in a blog entry.

Using commercial satellite imagery from March 2013 and December 2013, it says the Khushab III reactor now appears operational due to water vapour rising from its cooling towers, but the Khushab IV reactor is still under construction.

It goes on to say, "If Khushab-III began operating in early 2013, the first batch of its spent fuel could have been taken out already, cooled and become available to be reprocessed in 2014 or possibly 2015."

It bases its assessments on the three operating reactors having a power of 40-50 megawatts, which, operating at 50 percent capacity, could each produce 5.7 to 7.1 kilogrammess of weapon grade plutonium per year. At 80 percent capacity they could each produce 9 to 11.5 kilogrammes of plutonium.

Based on these calculations, IPFM estimates Pakistan has accumulated about 170 kilogrammes of plutonium from the Khushab-I and Khushab-II reactors. It claims this would suffice for approximately 35-40 warheads of four to five kilogrammes of plutonium per warhead.

Royal United Services Institute Analyst Shashank Joshi said he was wary of analysing the figures of production capabilities based on satellite images.

PAKISTAN NUKE PROGRAM PALES IN COMPARISION TO INDIA'S:

Quaid-e-Azam University Department of Defence and Strategic Studies official Mansoor Ahmed, who specialises in Pakistan's national deterrent and delivery programs, said this fits into a long pattern of reporting that shows Pakistan has a fast-growing arsenal but one he believes still pales in comparison to India's.

He highlights a number of reports, including from the IPFM itself, that show India "is expanding and adding several un-safeguarded facilities in its military nuclear fuel cycle suitable for producing fissile material," and has the world's fastest growing nuclear program.

"These include the rare materials plant centrifuge facility, a second plutonium production reactor and one 500 megawatt electricity experimental fast breeder reactor. In addition, four reprocessing plants of 350 tonnes of heavy metal per year (thm) are in operation, an industrial-scale 500 thm/year reprocessing plant and another large industrial scale centrifuge enrichment plant are in the pipeline along with four additional fast breeder reactors," he said.

"As of the end of 2013, India's fissile material stockpiles include 800-1,000 kilogrammes of weapon-grade plutonium from CIRUS and Dhruva-1 production reactors, two tonnes of highly enriched uranium [HEU] from RMP; and 15 tonnes of weapon-usable reactor-grade plutonium from its pressurised heavy water reactors [PHWRs]," said Ahmed.

He says the significance of these cannot be underestimated.

"These stocks are outside (International Atomic Energy Agency) safeguards and are sufficient for producing about 250 warheads from weapon-grade plutonium; 40 warheads from HEU and 1,875 warheads from reactor-grade plutonium, which was used in one of India's 1998 nuclear tests," he said.

Additional capabilities will be added within the next three to five years, he said, that could produce another 171 kilogrammes of weapon-grade plutonium.

"These figures would add up with existing capacities and would allow India to produce about 100 warheads from weapon-grade plutonium and HEU each year in addition to 50 warheads from one PHWR run on low-burn up," he said.

"Even if a fraction of the other seven PHWRs are used to produce fuel for India's fast breeder reactors as claimed, these can still add another 137 weapons worth of fissile material each year," he said.

"Compared to this, Pakistan's total existing and expected annual fissile material production capacity from four Khushab plutonium production reactors is not more than 46 kilogrammes of weapon-grade plutonium and 100-125 kilogrammes of weapon-grade HEU, only sufficient for 17 warheads annually."

Former air commodore and analyst, Kaiser Tufail believes Pakistan is reasonably secure.

"Pakistan's nuclear triad exploits certain peculiar advantages of each delivery system," he said.

"Ground-based mobile missile systems allow dispersion, reducing the success probability of an enemy's first strike. Submarine-launched missile systems allow a high degree of survivability and can be credibly used for a second strike."

He also said that the aircraft delivery method has flexibility beyond that of other systems.

http://www.pakistantoday.com.pk/2014/07/06/national/third-pakistani-nuclear-reactor-operational-ipfm/

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The Economic Times – New Delhi, India

Nuclear Triad Weapons Ready for Deployment: DRDO

Press Trust of India (PTI)
July 7, 2014

NEW DELHI: The weapons systems for the country's nuclear triad, including submarine-launched ballistic missiles, are "fully ready" for deployment, DRDO chief Avinash Chander said today.

Addressing a gathering at an IDSA event, he said the nuclear reactor on board the indigenously-developed INS Arihant nuclear submarine is also critical and is running on its "full power" before it is launched for sea trials.

The weapons for the nuclear triad are "either fully developed or are ready to be deployed," Chander said.

The nuclear triad is the capability to launch a nuclear weapon from sea, air and land. India will complete it once the Arihant is operational giving it the option to retaliate to nuclear strike through submarine-launched BO-5 missiles.

The Arihant is expected to be launched for sea trials in next few months.

The Agni series missiles can be used to carry out attacks from land while some of the IAF airrcraft are also capable of launching nuclear attacks.

The DRDO completed the development of the over 700km-range BO-5 missiles recently and they would be fired from the Arihant during its sea trials.

The organisation is also preparing to develop the longer-range K-4 underwater missile in near future and some of its trials have been completed successfully.

http://articles.economictimes.indiatimes.com/2014-07-07/news/51133917_1_sea-trials-nuclear-triad-avinash-chander

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Daily Times – Lahore, Pakistan

US Shows Trust on Pakistan's Nukes

State Department spokesperson disagree with Indian journalists on nuclear safety issue
By Agencies
July 11, 2014

WASHINGTON – The United States has once again expressed satisfaction over the security of nuclear assets of Pakistan, local and foreign media reported on Friday.

During a press briefing, State Department spokesperson Jen Psaki said that the US has no concerns over the security of Pakistan's nuclear assets. To a question, she said officials of both the countries – Pakistan and the US – used to talk over several issues.

Psaki said that the US works with Pakistan over anti-terrorism and other matters. She said that the US had no information to suggest that the nuclear materials seized in Iraq had come from Pakistan. "We have had a range of dialogue with Pakistan and I am not aware of any new concern on this case," she added.

At the State Department news briefing, some Indian journalists suggested that the material might have come from Pakistan but the department's spokesperson disagreed with them. She also said that this was not a weapon grade material and was meant for medical use.

http://www.dailytimes.com.pk/national/11-Jul-2014/us-shows-trust-on-pakistan-s-nukes

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The Diplomat – Tokyo, Japan
OPINION/Article

America's War on WMDs

How to think about the fight to stop the spread of weapons of mass destruction.
By James R. Holmes for *The Diplomat*
July 08, 2014

The U.S. Department of Defense just released the latest version of its Strategy for Countering Weapons of Mass Destruction, replacing the 2006 document put out by the Bush administration. This was far from the usual cheery Fourth of July. A hurricane was bearing down on New England. So in keeping with a dismal day, why not get some kicks reviewing the nature of the struggle to stanch the spread of chemical, biological, radiological, and nuclear (CBRN) arms?

Doing so is hardly an idle project. After all, Clausewitz, that patron saint of strategic thought, tells us no one in his right mind gets into an endeavor unless he grasps its nature, neither mistaking it for something else nor – wittingly or unwittingly – trying to change it into something alien to its nature. One hopes the framers of the Strategy for Countering Weapons of Mass Destruction heeded Clausewitz's wisdom while assembling it, rather than doing the bureaucratic thing and writing laundry lists of problems and solutions. Surrendering to listmania is seldom helpful when designing strategy.

First of all, a point about the language used in the strategy. Back in 2005, a team at the Carnegie Endowment for International Peace denounced the term WMD. They argued that, however useful as shorthand, the acronym conflates very different types of weaponry that inflict damage very different in scope and magnitude and demand very different countermeasures. Only nuclear weapons, they opined, qualify as true weapons of mass destruction. Chemical, biological, and radiological armaments create effects that are far less dire. It only makes sense to address them separately.

As an old CBRN instructor from way back, and as a committed Orwellian, I agree wholeheartedly with the Carnegie folks' verdict. The language we use shapes how we think about, debate, and execute strategy. For the sake of precision, it is sensible to disaggregate WMD into its components. In straitened times, combating nuclear proliferation should command more analytical energy and scarce resources than, say, squelching the spread of mustard agents. Nevertheless, their effort evidently didn't take in the hallowed halls of the Pentagon. The strategy is chock-full of WMD mentions. (It's also rather vague about specific initiatives against proliferation, and the resources these initiatives will demand. In this sense the document is more of a strategic concept than a strategy.) In any event, the prospect that applying the term WMD to disparate threats amounts to trying to transform the counterproliferation fight into something alien to its nature should give us pause.

Second, counterproliferation isn't a war *per se*. It's more of a constabulary enterprise with warlike characteristics and methods. To borrow from Clausewitz, it is a series of acts of force to compel proliferators to do our bidding. The strategy vows, for instance, to "Prevent Acquisition, Contain and Reduce Threats, and Respond to Crises." But like all effective unconventional, asymmetric challenges, weapons proliferation straddles the war/peace divide while exploiting the seams between organizations with unlike mandates, bureaucratic cultures, and geographic

areas of operation. And, like all wicked problems, the problem can morph from one thing into another and back again – eluding efforts to thwart it. This is a war only in a loose sense, then, much like the war on drugs and other murky ventures.

Third, counterproliferation is strategically defensive, albeit featuring both offensive and defensive methods and tactics. Its watchwords, again, are prevent, contain, reduce, and respond – all negative aims. On the operational level, thankfully, the Pentagon does pledge to control, defeat, disable, or dispose of unconventional arms or missile delivery systems. Those are offensively minded terms. Strategic defense waged through a mix of defensive and offensive, passive and active measures – sounds about right to the Naval Nuclear Diplomat.

Fourth, this is a cumulative undertaking in Admiral Wylie's sense. Non- and counterproliferation are efforts composed of widely scattered tactical actions, unconnected to one another either on the map, with action A leading to action B, or in time, with action A coming after action B in some sequence of events culminating in victory. The U.S. military and its allies cannot march out against proliferators the way they slogged across the Pacific to defeat Japan. Rather, quelling proliferation is more like law enforcement. When an individual transgression takes place, the authorities respond. If an organized criminal network is behind the lawbreaking, the police try to dismantle it. So it is with weapons traffickers. The police never defeat crime; nor is Washington likely to vanquish proliferation in any final sense.

It's doubtful, then, that such a campaign will ever yield outright victory over the Irans or al Qaedas of the world, or over middlemen like gray-market trafficker A. Q. Khan.

So, fifth, the battle against proliferation is open-ended and will not deliver a satisfying end. Campaigns of indefinite duration come with a warning sign for Clausewitz. They become costly, even if the effort expended on a daily basis is modest. Consequently, a society – its government, people, and armed forces – must place inordinate value on its political goals to warrant such an effort. The magnitude of the counterproliferation campaign, measured in American and allied lives, treasure, and hardware, may be low on any given day. Yet costs will mount over time.

Rallying popular and elite opinion behind an expensive enterprise whose payoffs remain largely out of sight will demand statesmanship of a high order. Executing the strategy appears doable in Clausewitzian terms – provided U.S. officials and commanders can keep its magnitude manageable while stiffening popular resolve. When resolve is high, the costs are low, and the timeline for the campaign is indefinite, the cost/benefit calculus may just work in America's favor. Make it so.

James R. Holmes is a defense analyst for The Diplomat and a professor of strategy at the U.S. Naval War College where he specializes in U.S., Chinese and Indian maritime strategy and U.S. diplomatic and military history.

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The National Interest.org
OPINION/Article

American Missile Defense: Why Failure IS an Option

"Failing a test is not catastrophic; it is how science—and security—advances. The GMD system has already done what many said was impossible: identified, tracked and killed an enemy warhead in flight."
By Michaela Dodge
July 8, 2014

Robert Gard and Philip Coyle label the U.S. Ground-Based Midcourse Defense (GMD) system a "mistake," despite last month's successful intercept of a target missile. The system has not infrequently failed tests in the past, you see.

And so they appear to argue: When the system fails a test, it proves it is not good enough. And when the system succeeds, it proves that the program is in too much of "a rush" and not "taking the time to get it right."

It's not a novel argument, and far from convincing. The latest GMD test was not only successful, it was also the most challenging test to date—proof that the program is, in fact, making significant progress toward "getting it right." The GMD interceptor defeated countermeasures during this test. This is an extremely challenging task, due to all the background noise and debris in space where the intercepts occur.

While criticizing the system's development history as a "rush to failure," Gard and Coyle omit a critical fact. Deployment of the system was fast-tracked because the United States was critically vulnerable to North Korean, and potentially Iranian, long-range ballistic missiles. Both countries had demonstrated capabilities that would allow them to develop long-range ballistic missiles. The only real alternative to standing up to a less-than-perfect missile-defense system is to cede your adversaries the ability to obliterate millions of people within minutes. That is clearly not a good option.

Despite tremendous international efforts, North Korea has not gotten any less aggressive since the 2002 decision to deploy a U.S. missile-defense system. Pyongyang has tested nuclear devices in 2006, 2009 and 2013. It has also extended the reach of its long-range ballistic missiles through its ongoing testing regimen.

As for terror-sponsoring Tehran, Gard and Coyle state that "the State Department is working to reduce the scope of Iran's nuclear program to clearly peaceful civil purposes." The United States should not entrust millions of American lives to the State Department's diplomatic prowess. After all, the State Department also worked to make North Korea's nuclear program for peaceful civil purposes. It worked to reduce the scope of North Korea's ballistic-missile program. Those efforts have proved futile.

In 2013, the Defense Intelligence Agency assessed "with moderate confidence the North currently has nuclear weapons capable of delivery by ballistic missiles." No wonder the Bush and the Obama administrations agree on the criticality of missile-defense systems. No wonder President Obama's Pentagon has doubled down on the GMD system. After all, it is currently the only missile-defense system capable of dealing with long-range ballistic missiles. And since the United States spends less than 2 percent of the Pentagon's dwindling budget on missile defense, the situation is not likely to change anytime soon.

Indeed, the United States needs a more robust testing program. During ballistic-missile tests, we need to push the performance envelope of the system. This means that the tests are more likely to fail. And it's ok. Design a test so that you can't fail, and you're bound to "win," but you'll also learn nothing (and waste millions of dollars in process). The ultimate metrics of a successful test should be whether and how much we have learned.

The Polaris AX submarine-launched ballistic missile (SLBM) had twelve failures within a span of a year. Yet, we learned from those failures and perfected the system to the point where many of its technologies were used in the Trident SLBM. Is Trident a failure because it is based on a missile that failed 70 percent of the time? Hardly; it is expected to remain in service until 2040.

Bad countries with ballistic missiles are not going away. As Vice Admiral James D. Syring, director of the Missile Defense Agency, succinctly wrote: "the [ballistic missile] threat continues to grow as our potential adversaries are acquiring a greater number of ballistic missiles, increasing their range and making them more complex, survivable, reliable, and accurate."

Failing a *test* is not catastrophic; it is how science—and security—advances. The GMD system has already done what many said was impossible: identified, tracked and killed an enemy warhead in flight—a dart hitting a dart.

Yes, we must continue to improve and perfect the system, but we also must continue to deploy the capabilities we do have that can keep us one step ahead of the threat. To do otherwise would be to leave ourselves vulnerable to a ballistic-missile attack—inviting a catastrophe too grave to contemplate.

Michaela Dodge is an analyst specializing in defense and strategic policy issues in The Heritage Foundation's Douglas and Sarah Allison Center for Foreign and National Security Policy.

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OPINION/Article

U.S. Missile Defense: Time to Go Ballistic

It's time to go ballistic. It will take years to develop a more reliable Exoatmospheric Kill Vehicle. In the meantime, Washington should pursue a dual-hedging strategy for missile defense.

By Richard Weitz
July 9, 2014

The United States needs to pursue a "dual-hedging" approach towards the evolving U.S. Ballistic Missile Defense System (BMDS). Although the Missile Defense Agency (MDA) successfully conducted a test of the existing national system on June 22, when the Pentagon intercepted a simulated incoming warhead in outer space, critics on *The National Interest* website and elsewhere have correctly identified deficiencies in the current variants of the Exoatmospheric Kill Vehicle (EKV) now on the 30 Ground-Based Interceptors (GBIs) based mostly in Alaska, with a few in California. Between 1999 and 2013, only half of the 16 tests of these EKVs succeeded.

Even so, critics' proposed strategy of suspending work on building U.S. defenses until ballistic-missile defense (BMD) technologies significantly improve is excessively and needlessly risky. The danger is that the rogue-missile threat to the U.S. homeland could develop more rapidly than it takes to develop and test a reliable new EKV and make other fixes to the GBIs. While BMD technologies will never be perfect, missile defenses continue to improve, providing some means of deterring missile threats by emerging nuclear-weapons states that might aim to threaten the United States—such as North Korea.

In addition, the critics tend to analyze each U.S. BMD component in isolation, and fail to appreciate all the synergies currently or soon available throughout the system. The best strategy would be to continue to try to improve the existing GBIs during the years it will take to develop and test a new EKV, meanwhile using the growing capabilities already available in the Aegis/Standard Missile-3 (SM-3) to help fill the gap until more capable systems become available in the long term, as funding and technologies allow.

The June 22 test, the first successful GBI intercept since 2008, should help restore some confidence in the existing Ground-based Midcourse Defense (GMD) system. Nonetheless, neither of the two variants of the 150-pound "kill vehicles" are sufficiently reliable and effective to serve as the foundation of a long-term GMD architecture. They cannot provide a robust defense of the U.S. homeland if North Korea or another difficult-to-deter, hostile country were to develop the capability to attack the United States with more than a few nuclear-armed warheads on intercontinental ballistic missiles.

The Capability Enhancement-I (CE-I) EKV, deployed from 2004 to 2007 and currently on some 20 GBIs, has only succeeded in half its tests. It failed its most recent drill last July. The somewhat more advanced CE-II variant, presently on approximately 10 of the GBIs, failed its first two tests in 2010, leading the Pentagon to suspend planned purchases of at least 14 more CE-II-armed GBIs until that variant achieved a successful test, which it did on June 22.

Despite its March 2013 decision and the recent test success, the Obama administration should continue to develop a new EKV to replace the current variants, which were rushed into service a decade ago. The aim should be to have a more reliable kill vehicle that undergoes a comprehensive development and testing phase before deployment. The tests should be more frequent, involve interceptions at higher speeds and longer distances, simulate a range of countermeasures including decoys, and encompass both the entire system and its critical components, which are often manufactured by diverse subcontractors. A more modular design than with the current EKV variants would make it easier to replace and upgrade the kill vehicle's components, which can take a year with the existing variants.

Future contracts with Boeing, which has been the prime contractor for the GMD since 2001, or the next lead systems integrator should be written to include incentives for quality improvements, reliability, maintenance, and good systems engineering to make the GMD more robust against defects. Cost cutting, though important, is the

highest priority of the existing contract that began in 2011 and will expire in 2018. This has proved penny-wise but pound-foolish, since Boeing and other contractors have lost money due to failed tests, whose causes might have been averted.

The new EKV could draw on other critical technologies developed during the past decade. For example, although the current EKVs are designed to operate autonomously, the future variants could take better advantage of the advances in BMD sensor integration, which allows defenders to combine data from many types of sensors, at different locations, to better track and plot targets, and to potentially decrease the requirements for onboard guidance. In addition, there could be further improvements in the next few years in the kill vehicle's ability to discriminate between incoming warheads and other nearby objects, such as missile junk and perhaps decoys.

The next-generation kill vehicle could also profitably borrow from the SM-3, which has racked up an exceptional test record in recent years. It might even be possible to save money and increase reliability by developing a common kill vehicle for use by both the next-generation GBIs and future SM-3s.

Unfortunately, experience teaches us that we cannot predict how long it will take to develop a reliable next-generation EKV. Some estimates are as short as three-to-five years, but there can be no guarantee that a new EKV developed on such an accelerated timetable will work any better than the current variants.

To reduce the risks of an offense-defense gap arising from unexpected new threats or further development stumbling blocks during the years it will take to develop and test a more reliable EKV, the best option for the next few years would be to pursue a dual-hedging strategy.

First, the Pentagon should quickly strengthen the current GMD by upgrading the existing GBIs with the hardware and software fixes validated in recent and near-term future tests as well as by purchasing the 14 new GBIs that Defense Secretary Chuck Hagel said in March 2013 he wanted to deploy by late 2017 if the second-generation EKV could overcome its initial test failures. The defenders will want to launch several GBIs at each incoming warhead to increase their chances of hitting it.

Second, pending development and deployment of a reliable next-generation EKV, the Pentagon should use the SM-3 variants that are already under active development to augment U.S. homeland defenses. In particular, the SM-3 Block IIA, which is scheduled to become available in 2018, could provide an additional interception layer for warheads that overcame the GBIs.

The advantage of using the proven Aegis/SM-3 system to supplement the GBIs is that this option: 1) would cost significantly less than developing an entirely new BMD system, 2) can be made available more rapidly than the next-generation EKV, 3) uses proven technology that does not depend on making improbable revolutionary progress with directed energy systems or other envisaged new capabilities, 4) would probably have less of an adverse ecological effect than constructing a separate East Coast GBI site and 5) provides a more flexible homeland BMD architecture that can change as conditions and technologies evolve.

The United States will also require additional Terminal High Altitude Area Defense (THAAD) batteries to deploy on land in Europe, Asia and the Middle East to reduce the need for SM-3s in these regions. More Army Navy/Transportable Radar Surveillance system (AN/TPY-2) radars will be needed to support them. Restoring the 18 radars that the MDA original planned for would be a good place to start. In terminal mode, the AN/TPY-2 acts as a fire-control radar for the THAAD system, while in forward-based mode, it can track ballistic missiles soon after their launch and contribute fire-control data to the Aegis ships.

These additional outlays should be fiscally sustainable and politically feasible, since they will increase the number of systems that are already being developed, rather than require improbable revolutionary technological or political breakthroughs.

Richard Weitz is the director of the Center for Political-Military Analysis and a senior fellow at the Hudson Institute.

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OPINION/Flashpoints

Russia Threatens Nuclear Strikes over Crimea

Russian FM Lavrov warned that Russia could resort to nuclear weapons if Ukraine tried to retake Crimea.
By Zachary Keck for *The Diplomat*
July 11, 2014

A senior Russian official appeared to issue a nuclear threat against Ukraine over Crimea on Wednesday.

In recent weeks, numerous senior level Ukrainian officials have promised to return Crimea to Ukraine despite Russia's decision to annex it earlier this year. Following his appointment as Ukraine's new minister of defense, Colonel General Valeriy Heletey promised the parliament in Kiev he would work to retake Crimea from Russia.

"Believe me, there will be a victory parade — there will be for sure — in Ukraine's Sevastopol," Heletey said, referring to the capital city of Crimea. At the same hearing, Heletey pledged he "will work day and night for restoring the military capability of our armed forces." Similar pledges have been made by Ukraine President Petro Poroshenko, who has promised to oversee the "revival of the army," as well as Ukraine Foreign Minister Pavlo Klimkin.

When asked about these comments at a press conference on Wednesday, Russian Foreign Minister Sergey Lavrov responded, "If it comes to aggression against Russian territory, which Crimea and Sevastopol are parts of, I would not advise anyone to do this." He then added, "We have the doctrine of national security, and it very clearly regulates the actions, which will be taken in this case."

This is a not-so-subtle threat to use nuclear weapons to retain Crimea. Since the collapse of the Soviet Union, Russia's conventional military capabilities have deteriorated significantly. As a result, it has come to be increasingly reliant on nuclear weapons to protect its national security. This has been reflected in its post-Cold War military doctrines, particularly the ones since 2000. These military doctrines have greatly reduced the threshold that would needed to be crossed before Russia would resort to the use of nuclear weapons.

Most notably, Russia's military doctrines starting in 2000 introduced the concept of de-escalation, which is "a strategy envisioning the threat of a limited nuclear strike that would force an opponent to accept a return to the status quo ante." In other words, Russian military doctrines have said that Moscow will use limited nuclear strikes in response to conventional military attacks against it. The most recent military doctrine issued in 2010, for example, states:

"The Russian Federation reserves the right to utilize nuclear weapons in response to the utilization of nuclear and other types of weapons of mass destruction against it and (or) its allies, and also in the event of aggression against the Russian Federation involving the use of conventional weapons when the very existence of the state is under threat."

It was this military doctrine that Lavrov was referring to at the press conference this week. As quoted above, Lavrov began by emphasizing that Moscow sees Crimea as an integral part of Russian territory. He then stated that Moscow has a military doctrine that "very clearly" outlines how Moscow would respond to threats to its territorial integrity. The military doctrine "very clearly" states that the "Russian Federation reserves the right to utilize nuclear weapons" in these situations.

This is not the first time a Russian official has issued a nuclear threat against its neighboring states. For example, as tensions rose between Russian and several former Soviet Union and Warsaw states in 2011, General Staff Chief Gen. Nikolai Makarov warned a Russian legislative body that:

"The possibility of local armed conflicts virtually along the entire perimeter of the border has grown dramatically. I cannot rule out that, in certain circumstances, local and regional armed conflicts could grow into a large-scale war, possibly even with nuclear weapons."

To enhance the credibility of its threat to use nuclear weapons, Russia's armed forces have conducted regular military drills since 2000 in which a limited nuclear strike is simulated. These drills have become increasingly common since the Ukraine crisis began. In some cases, Vladimir Putin has ordered snap drills simulating nuclear strikes.

Zachary Keck is Managing Editor of The Diplomat where he authors The Pacific Realist blog. He also writes a monthly column for The National Interest.

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ABOUT THE USAF CUWS

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

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

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

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

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