



NUCLEAR SECURITY



A FORTNIGHTLY NEWSLETTER ON NUCLEAR DEFENCE, ENERGY AND PROLIFERATION FROM CENTRE FOR AIR POWER STUDIES

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STATEMENT – Robert Wood, US Permanent Representative to the CD

Remarks at the 71st Session of the General Assembly First Committee

...In 2009 in Prague, President Obama reaffirmed America’s commitment to seek the peace and security of a world without nuclear weapons, a goal that the President reiterated in his historic visit to Hiroshima earlier this year. Toward that end, we have steadily reduced the role and number of nuclear weapons in a way that maintains strategic stability, and creates the conditions and opportunities for further progress. The work of disarmament continues steadily, without headlines or fanfare. More work needs to be done, but the dramatic results achieved thus far speak louder than any words – we have made significant progress.

We understand that there is now disagreement on the process by which we achieve a nuclear free world. However, the US does not accept the premise underlying the call to negotiate a legally-binding instrument to prohibit nuclear weapons found in L41 and L24. And while we respect the views of the proponents, we disagree with the practicality of their approach and are concerned with the negative effects of seeking to ban nuclear weapons without

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consideration of the over-arching international security environment.

We understand and share the disappointment of others with the pace of progress, we must continue to support an approach to reductions which builds upon decades of pragmatic steps to reduce the role and number of nuclear weapons. In our view, diverting focus from this proven course in favor of

a nuclear weapons ban would be both polarizing and would forsake long-standing principles of credible nuclear disarmament, such as verifiability. That is not a recipe for success when dealing with nuclear weapons.

In addition to the proven approaches to disarmament, the US is committed to creating new ones that will help us reach our goals. That is why we are proud to partner with others through the International Partnership for Nuclear Disarmament Verification (IPNDV). Effective verification is a key feature of any successful arms control agreement. The requirements for verification have and will continue to become more demanding as the number of parties increases and the numbers of weapons and the size of the accountable objects decreases. It is for this reason, we are pleased to co-sponsor Norway's resolution on nuclear disarmament verification....

Effective verification is a key feature of any successful arms control agreement. The requirements for verification have and will continue to become more demanding as the number of parties increases and the numbers of weapons and the size of the accountable objects decreases. It is for this reason, we are pleased to co-sponsor Norway's resolution on nuclear disarmament verification.

We are likewise pleased to once again co-sponsor Japan's resolution on "United Action to Eliminate Nuclear Weapons." In our view, this resolution presents a good balance between the goal of eliminating nuclear weapons and a recognition of the necessary steps that must be taken to accomplish this goal.

...the NPT continues to play a critical role in global security and provides the foundation for our efforts to achieve a world without nuclear weapons. While we recognize that more needs to be done, we do not accept the notion that there is any "legal gap" in our fulfillment of these undertakings. In crafting the NPT, negotiators recognized they could not prescribe the modalities for eliminating nuclear weapons, given the need to account for prevailing security conditions. Successive agreements or unilateral steps to reduce nuclear arsenals and reliance on them have proven the wisdom of this approach.

The current challenge to nuclear disarmament is not a lack of legal instruments. The challenges to disarmament are a result of the political, technical

and security realities we presently face. The US is ready to take additional steps including bilateral reductions with Russia and a treaty ending the production of fissile material for use in nuclear weapons. Unfortunately, some states are currently unwilling to engage in further nuclear reductions, and others are increasing their arsenals. At the same

time, violations of international norms and existing agreements are creating a more uncertain security environment and making the conditions for further reductions more difficult to achieve. A ban treaty will do nothing to address these underlying challenges.

...The world's nuclear weapons arsenals did not appear overnight and they will not be drawn down overnight. We cannot lose sight of the fact that while we might disagree on process, we all agree on the goal: the peace and security of a world without nuclear weapons. In this spirit, let us all rededicate ourselves to doing the hard work together to create the conditions to make verifiable and irreversible nuclear disarmament possible.

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Source: <http://www.state.gov/t/avc/rls/263761.htm>, 27 October 2016.

OPINION – Robert Windrem, William M. Arkin

What does Trump Really Think About Using Nuclear Weapons?

Donald Trump's confusing comments about nuclear weapons in debate are not the first time during this Presidential Campaign that his statements have left nuclear experts wondering just what he might do if he gains access to the nuclear football.

... Trump agreed with moderator Lester Holt that

nuclear weapons are of paramount importance to the US— but then called for more nations to join the nuclear club. He ruled out a “first strike,” but then revealed not just a willingness to use nukes but also a misunderstanding of the high-stakes balancing act the nuclear superpowers have pursued for decades. “I think that once the nuclear alternative happens, it’s over,” Trump said, referring to the use of nuclear weapons. “At the same time, we have to be prepared. I can’t take anything off the table. Because you look at some of these countries, you look at North Korea, we’re doing nothing there.”

The US, under both Democratic and Republican administrations, has worked closely with partners in China and Russia to halt the advance of North Korea’s illegal capability. Trump’s performance had also suggested he may not know the difference between “first use” and “first strike.” He responded to a question from Holt about “first use” with a statement about a “first strike.” “I would like everybody to end it, just get rid of it,” he said of nuclear weapons. “But I would certainly not do first strike.”

...“First use” is an unofficial US prohibition on the use of nuclear weapons against enemies who don’t have nuclear capability. Joseph Cirincione, President of the Ploughshares Fund, said Trump’s comments are typical of his public statements on nuclear weapons policy. “Donald Trump is very cavalier about how he talks about nuclear weapons,” said Cirincione. “He treats them as if they are another tool in the toolbox.”...

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Conservative pundit Hugh Hewitt asked Trump about the nuclear triad — the air, sea and land-based nuclear weapons arrangement that ensures the US will have surviving forces that can respond effectively to a nuclear attack. The triad is meant to deter an enemy from attempting a strike in the first place and has been at the center of the US strategic policy for a half century. Trump seemed unaware of what the triad entails and responded instead with an attack on President Obama.

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... In May 2016, Trump even suggested he could support South Korea, Japan and Saudi Arabia, who are not currently nuclear powers, arming themselves with nuclear weapons for their own defense. CNN’s Anderson Cooper asked the Republican presidential nominee, “So if you said, Japan, yes, it’s fine, you get nuclear weapons, South Korea, you as well, and Saudi Arabia says we want them, too?” Trump agreed. “Can I be honest with you? It’s going to happen, anyway. It’s going to happen anyway. It’s only a question of time,” Trump insisted, despite a 25-year trend in which numerous nations — Libya, South Africa, Iraq, and former Soviet republics — have been denuclearized....

...Cirincione said that Trump, who uses business parallels in many of his policies, is wrong on the pursuit of proliferation. What is the parallel here?” asked Cirincione. “In the business world, competition is good; in nuclear arms, it’s not.” Trump has also discussed the use of nuclear weapons on the battlefield rather than

seeing them purely as a deterrent. In March 2016, he told Bloomberg News he would want to be “unpredictable” in nuclear decision making, citing the war against ISIS.

Mark Halperin of Bloomberg asked: "So you would — you would rule out the possibility of using, right, nuclear weapons against ISIS?" Trump responded: "Well, I'm never going to rule anything out." Around the same time, when discussing nuclear weapons with Chris Matthews of MSNBC, Trump said basically the same thing.... In March 2016, he told Eric Bolling of Fox News that he wouldn't rule out using nuclear weapons in Europe. The first Bush administration largely denuclearized US military forces, leaving only a token force on the continent.

..."The last person that wants to play the nuclear card believe me is me. But you can never take cards off the table either from a moral stand — from any standpoint and certainly from a negotiating standpoint. ... Europe is a big place. I'm not going to take cards off the table," Trump said. Cirincione said there is a vibrant academic debate on the future of nuclear weapons and the modernization of the US arsenal, but that debate doesn't seem to be influencing Trump.

..."He doesn't understand their role in our security policy. What he's saying? He argues purely from a good gut instinct. Is that the way you make nuclear policy?" Cirincione says there is a need for a national discussion of some of the issues Trump brought up, like modernizing the aging arsenal. But he also argues that Trump's statements are outside the mainstream of both parties. He notes that presidents from Harry Truman to George H.W. Bush have been advised by military commanders to use nuclear weapons, but presidents have refused....

Source: <http://www.nbcnews.com/>, 28 September 2016.

OPINION – Mark Rubio

Iran Nuclear Deal an Unfolding Disaster

When it comes to President Barack Obama's disastrous nuclear deal with Iran, it has become difficult to keep track of the troubling new

revelations that seem to surface almost daily. Outrageous, potentially illegal, actions by this administration have become so commonplace that many Americans have become numb to the recent news regarding this President's policy toward Iran.

We now know the President authorized a \$1.7 billion cash ransom payment to Iran, then his administration lied about it to Congress. Only President Barack Obama and supporters of the Iran nuclear deal refuse to accept that the pallets of cash were a ransom payment, even though it was ransom by every definition of the word. This endangers every American overseas by incentivizing kidnappers and encouraging hostage-takers, and since Iran's release of five US hostages in January 2016, multiple American citizens have been thrown into Iranian jail cells. Providing cash to Iran has also allowed the mullahs to circumvent

the international financial system as they shuttle much-needed resources to their terrorist proxies in Lebanon, Syria, and Yemen.

We recently learned President Obama dismantled a key part of the ballistic missile sanctions against Iran eight years early. But this past July, the President praised his Iran deal, saying, 'We are not taking the pressure off Iran ... with respect to ballistic

missiles. As I just explained ... we maintain the eight years on the ballistic missiles under this particular UN resolution. ... So we have not lost those legal authorities.' Once again, the White House lied to the American people about its concessions to the Iranian regime.

The facts are clear. The entity in question is the only Iranian bank designated by the United Nations for providing support to Iran's main ballistic missile-related organizations, and was described by the Treasury Department as 'the financial linchpin of Iran's missile procurement network.' Ballistic missiles were not supposed to be a part of President Obama's nuclear deal with Iran, but they became one simply because he negotiated from a position of weakness. He

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wanted a deal so badly and at any cost that he let Tehran name their terms.

Just this month (October), the Obama administration announced Iran will be allowed to conduct US dollar transactions, making it easier for Iranians involved in terrorism to do business. Having the world see an American president bend over backward to secure such a terrible deal has had far-reaching consequences that go well beyond Iran's nuclear program.

Before the deal was finalized, President Obama expressed hope that signing it would strengthen moderate forces inside Iran. Nothing of the sort has occurred, as Iran has grown more emboldened by the administration's efforts to protect the deal whether Iran complies or not.

This is most obvious in the chaos and destruction Iran is sowing across the Middle East. Iran has continued to develop ballistic missiles, a direct threat to our allies in the region, especially Israel. Earlier this year, Iran launched two missiles, one inscribed with 'Israel must be wiped out' in Hebrew, according to Iranian officials, and this summer Iran reportedly attempted to launch a modified North Korean missile with a maximum range of 2,500 miles. Iran has also maintained its support for Hezbollah, a terrorist organization that has destabilized the government in Lebanon and is working with Russia and Bashar al-Assad's regime in Syria.

A senior Iranian official has also stated that Tehran has been providing intelligence to Russia for military targeting, helping Moscow support Assad and his slaughter of innocent Syrians. Russia was also responsible for airstrikes on a UN humanitarian convoy and for decimating Aleppo, formerly Syria's largest city. This ongoing humanitarian disaster is heart-wrenching, and unlike anything the world has seen in decades.

In Yemen, Iranian-backed Houthi rebels continue to prolong a conflict that has no end in sight. Before the nuclear deal was finalized, Secretary of State John Kerry said in April 2015 that Iran was providing military support to the Houthis. There is evidence Iran continues to provide that

support and that the Houthis have directly benefited from Tehran's windfall from the nuclear deal. In recent days, the Houthis fired missiles at US Navy ships on multiple occasions. However, even as American sailors are attacked by an Iranian proxy, potentially using Iranian-provided weapons, the administration pretends none of this is happening and is reluctant to condemn Iran publicly.

Despite all this, President Obama naively claims the Iran deal is a success. But with each passing day, it becomes more painfully obvious that this deal has made our country less secure, and the US taxpayer money President Obama gave to Iran is being used to support terrorism and help in the killing of thousands of innocent people in Syria and elsewhere. Those who support this disastrous nuclear deal should be haunted daily by these facts.

Source: Marco Rubio represents Florida in the US Senate and is a member of the Senate Foreign Relations Committee and the Senate Select Committee on Intelligence. 18 October 2016.

OPINION – Hugh White

The Strategic Illusion of No First Use Policy

Ramesh Thakur and I may not be as far apart on NFU as he seems to think. I agree that America should make an NFU declaration because, like him, I think that Washington is kidding itself to imagine that the first use of nuclear weapons is a credible option today — especially against any adversary with the capacity to launch a nuclear attack on the US homeland. And like him I think that strategic policy should not be based on an illusion.

Where we disagree is over the wider consequences of such a declaration. An NFU declaration would weaken the United States' strategic position in Asia by weakening its key alliances there — especially with Japan. That is because Japanese leaders and policymakers genuinely seem to believe that the implied US threat of first use helps deter China in a way that conventional US forces cannot.

Ramesh finds this hard to believe. He suggests

that Japanese policymakers could not be as ill-informed as to take the implied US threat seriously. Or, for that matter, to imagine Beijing would take it seriously enough to be deterred by it. This is a possibility, but he has more faith in the rationality of strategic policymakers than I do.

To me the evidence clearly suggests that the Japanese really believe in first use. If not, why has Tokyo objected so strongly to the idea of an US NFU declaration? Why has the Obama administration apparently backed away from an NFU declaration for a second time, if not out of concern for the reaction of key allies like Japan?

And if Japan really does think the United States' first use threat is important to their security, then we have to accept that an NFU declaration could have some unwelcome consequences. It would weaken Japan's confidence in the United States' security commitments, and strengthen the arguments in Japan to build an independent strategic posture, including its own minimum nuclear deterrent capability.

This would obviously be a very serious consequence and for some it would provide a decisive argument against an NFU declaration. Ramesh perhaps assumes that I think that way. But on the contrary, I think the United States should make an NFU declaration despite this risk, precisely because it would dispel the United States and its allies of their 'first use illusion'. That is a good thing to do in itself and worth the risk because the first use

illusion is dangerous and destabilising.

How so? The idea that the United States can credibly threaten to use nuclear weapons first is a key pillar of the wider illusion that the United States enjoys unchallengeable military preponderance against major adversaries like China and Russia. That wider illusion in turn encourages the United States as well as allied policymakers and analysts to underestimate the likelihood that these regional rivals would risk a military conflict. It leads them to assume that Moscow and Beijing also believe that US military power is unchallengeable and so can be relied upon to avoid a confrontation.

That in turn leads them to underestimate the need to modulate the United States' own conduct to avoid a confrontation. This increases the risk of a confrontation occurring, leading to a conflict in which nuclear weapons could actually be used. These are not remote or hypothetical risks. If an NFU declaration helps to reduce them by injecting more realism into US assessments of the military balance, then that would be a good thing. It might indeed be a more important consequence of an NFU declaration than the slight nudge it would offer to the hope of eventual nuclear abolition.

Source: Hugh White is Professor in the Strategic and Defence Studies Centre

at The Australian National University, <http://www.eastasiaforum.org/>, 22 October 2016.

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OPINION – World Nuclear News

Nuclear has Important Role in Asia's Energy Future

Nuclear energy can help Asian countries achieve future economic growth, energy security and environmental protection, the Institute of Energy Economics, Japan (IEEJ) has said in its latest global energy outlook.

In the reference (business as usual) scenario of its Asia/World Energy Outlook 2016, published on 21 October 2016, the IEEJ sees world primary energy consumption increasing by 38% between 2014 and 2040 to 18,900 billion tonnes of oil equivalent. Fossil fuels, it says, will account for 78% of global primary energy consumption in 2040. Most of this growth will be in Asia, with China, India and the ASEAN region accounting for 55% of the increase. Energy demand in the ASEAN region is rapidly increasing due to industrialization, improved living standards and access to energy....

The 2016 outlook features analyses on three major topics: the impacts of energy supply disruptions, climate change and the role of nuclear energy. Nuclear energy, the institute says, will play an important role in achieving the "three Es" - economic growth, energy security and environmental protection. In the reference scenario, global installed nuclear generating capacity will increase from 399 GWe in 2014 to 612 GWe in 2040. Over this period, nuclear electricity generation will increase from 2535 TWh to 4357 TWh but its share of total global electricity

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In the high nuclear scenario, the IEEJ says, nuclear in effect "becomes the base power source" for many emerging countries, such as Asian and Middle Eastern countries. This scenario assumes nuclear energy "will benefit from lower level costs, and that nuclear technology transfer will be properly made from developed countries of nuclear technology, such as Japan, to emerging countries". Under this scenario, nuclear generating capacity in Asia would increase about seven-fold between 2014 and 2040. This, the IEEJ says, would help achieve the "three Es".

However, in the low nuclear scenario - where no new nuclear power plants are constructed not only in developed countries, but also in emerging countries - the world becomes less dependent on nuclear. Under this scenario, Asia's primary energy self-sufficiency decreases from above 75% currently to below 65% and CO2 emission increase significantly. IEEJ chief economist and managing director Ken Koyama said, "A sensitivity analysis of these scenarios indicates anew that nuclear energy could greatly contribute to reducing CO2 emissions, improving the energy self-sufficiency rate and saving electricity costs....

In a special Asia Edition of its World Nuclear Performance Report, launched in Singapore earlier, the World Nuclear Association notes that at the end of 2015 there were 66 new nuclear power reactors under construction around the world. Of

these, 43 of are being built in Asia, with 24 under construction in mainland China alone.

The World Nuclear Association has developed its own vision for the future of electricity, referred to as Harmony. This is based on the International Energy Agency's 2-degree scenario which aims to avoid the most damaging consequences of climate change and requires a large increase in nuclear energy. Harmony envisages a diverse mix of

low-carbon generating technologies deployed in such a manner that the benefits of each are maximised while the negative impacts are minimised. The Association's target for nuclear energy is to provide 25% of electricity in 2050, requiring roughly 1000 GWe of new nuclear capacity to be constructed.

Source: <http://www.world-nuclear-news.org/>, 27 October 2016.

NUCLEAR STRATEGY

INDIA

India can Produce Up to 492 Nuclear Bombs: Pakistan Think-Tank

According to the authors, the study contains evidence that India has the largest and oldest unsafeguarded nuclear programme in the developing world and among the states not party to the NPT.

India has sufficient material and the technical capacity to produce between 356 and 492 nuclear bombs, a research by a Pakistani think-tank has claimed. The study titled 'Indian Unsafeguarded Nuclear Program' published by the Institute of Strategic Studies Islamabad (ISSI) is co-authored by four nuclear scholars including Adeela Azam, Ahmed Khan, Mohammad Ali and Sameer Khan.

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A groundbreaking research study reveals that India already has sufficient material and technical capacity to make 356 to 492 nuclear bombs. This work is in contrast to several earlier studies which

took a much modest view of the Indian nuclear bomb making potential," the ISSI said in a statement.

It said that the purpose of the study was to provide an understanding of the true history, size, extent and capabilities of the different aspects of the complex

Indian nuclear programme which New Delhi has kept outside the IAEA. According to the authors, the study contains evidence that India has the largest and oldest unsafeguarded nuclear programme in the developing world and among the states not party to the NPT. Former Chairman Pakistan Atomic Energy Commission Ansar Pervez said the research breaks new ground by providing officials, researchers, scholars and students with new insight into India's nuclear weapon making capacity. He said in terms of detail, depth, analysis and the use of information from primary sources, the research is far superior to several studies on the Indian nuclear program and carefully blends social science perspective with technical details.

Source: <http://indianexpress.com/>, 25 October 2016.

ISRAEL

Israel Looks to Buy Three New Nuke-Capable Subs – Report

Israel is seeking to buy three more advanced submarines from Germany at a combined price of \$1.3 billion, an Israeli newspaper reported.... The planned purchase aims to replace within the next decade the oldest vessels in its existing Dolphin fleet, which began entering service in 1999, the Maariv daily reported.

Israel is seeking to buy three more advanced submarines from Germany at a combined price of \$1.3 billion, the planned purchase aims to replace within the next decade the oldest vessels in its existing Dolphin fleet.

Contacted by AFP, the Defense Ministry declined to comment on the report. Israel already has five of the state-of-the-art German submarines, with a sixth due for delivery in 2017. Foreign military sources and governments say the Dolphins can be equipped with missiles armed with nuclear warheads. They believe Israel has between 100 and 200 warheads and missiles capable of delivering them.

Israel is thought to be the Middle East's sole if undeclared nuclear power, refusing to confirm or deny it has such weapons. "The new submarines are said to be more advanced, longer, and equipped with better accessories," the newspaper report said. In 2012, the influential German news weekly Der Spiegel quoted former high-ranking German defense ministry officials saying that Berlin always assumed Israel was putting nuclear warheads on the Dolphin-class vessels. German Chancellor Angela Merkel's office said at the time all submarines had been delivered to Israel unarmed. "The federal government will not speculate on subsequent arming," spokesman Steffen Seibert said then.

Source: <http://www.timesofisrael.com/>, 21 October 2016.

RUSSIA

Russia Unveils its New Class of RS-28 'Satan 2' Nuclear Missiles

Russia unveiled its new super-heavy, MIRV-equipped ICBM. The 'Satan-2'...has a reported throw-weight of 10,000kg, and can carry up to 15 separate warheads. MIRV is an acronym that stands for Multiple Independently Targeted Vehicles. MIRV-equipped missiles can deliver multiple nuclear weapons to a single target area, or blanket a large area with separate detonations. Historically, MIRVs have been seen as potentially destabilizing because they give a decisive

advantage to the country that can strike first and eliminate its opponent's land-based missile silos.

The stats on the RS-28 demonstrate this is a missile that means business, and media outlets controlled by the Russian government have stated that a single missile is large enough to destroy Texas or France. We could quibble with the definition of "destroy," but we won't — any time a government drops 50MT of nuclear weapons on you, you're going to have a really bad day.

...The RS-28 is slated to replace the much-older R-36 (aka, Satan). Like the US, Russia undertook multiple programs to modernize its ICBM weapons since the R-36 deployed in 1970. After the fall of the Soviet Union, Russia sharply reduced its total number of missile silos and re-purposed a number of ICBMs into launch vehicles for lightweight satellites. There's also been talk of using some old R-36 missiles to destroy small asteroids.

Obviously it's a significant development when one of the world's nuclear powers deploys new, advanced technology. But there's no reason to believe that the RS-28 fundamentally alters the balance of power between the US and Russia. Both countries maintain what's known as the "nuclear triad" — a combined force of missile silos, manned bombers, and submarine-launched ICBMs. During the later years of the Cold War, Russia relied heavily on its fixed silos, while the US focused on submarine deployments. Russia is thought to have shifted some of its nuclear launch capability to submarines since the fall of the USSR. Despite mutual reductions to our nuclear stockpiles, both Russia and the US remain capable of wiping the other off the map.

...The doctrine of mutually assured destruction has kept diplomatic crises and full-scale wars from going nuclear at much more dangerous flash points than anything we face today. While relations

Russia unveiled its new super-heavy, MIRV-equipped ICBM. The 'Satan-2' can carry up to 15 separate warheads. MIRV is an acronym that stands for Multiple Independently Targeted Vehicles. MIRV-equipped missiles can deliver multiple nuclear weapons to a single target area, or blanket a large area with separate detonations.

with Russia have been chilly of late, there's no sign of nuclear conflict — Zhirinovskiy's comments notwithstanding.

Source: <https://www.extremetech.com/>, 27 October 2016.

Russia is Moving Ahead with Missile Program that Violates Treaty: US Officials

Russia appears to be moving ahead with a program to produce a ground-launched cruise missile despite the Obama Administration's protests that the weapon violates a landmark arms control

agreement, according to American officials and lawmakers. The concern goes beyond those raised by the US in July 2014, when the Obama administration said that Russia had violated the 1987 treaty on Intermediate-Range Nuclear Forces by conducting flight tests of the missile.

The INF accord, which was signed by President Ronald Reagan and his Soviet counterpart, Mikhail S. Gorbachev, bans the two nations from testing, producing and possessing ground-launched ballistic or cruise missiles that are capable of flying 300 to 3,400 miles. American officials are now expressing concerns that Russia is producing more missiles than are needed to sustain a flight-test program, spurring fears that the Kremlin is moving to build a force that could ultimately be deployed.

...Two prominent Republican lawmakers have also sent a letter to the White House asserting a deepening violation by Russia, but without providing details. The INF Treaty is the only arms control treaty that succeeded in eliminating a class of nuclear arms," wrote Representatives Mac Thornberry, chairman of the House Committee on

Armed Services, and Devin Nunes, chairman of the House Permanent Select Committee on Intelligence. "It has become apparent to us that the situation regarding Russia's violation has worsened and Russia is now in material breach of the treaty."

To focus attention on the issue, the US has called for a rare meeting of the Special Verification Commission, a body that was established by the INF treaty to deal with compliance. Russia inherited the treaty obligations of the Soviet Union. Other former Soviet

states that also are a party to the treaty — Ukraine, Belarus and Kazakhstan — will also send representatives to the meeting of the commission, its first since 2003. The arms control dispute comes against the background of steadily deteriorating relations, which are already strained over Russian airstrikes on Aleppo, Syria, as well as its seizure of portions of Ukraine.

A range of American officials also have accused Russia of meddling in the presidential election by hacking into the email accounts of Democratic Party figures. But the arms control issues are important in their own right. The INF treaty is regarded as one of the accords that brought an end to the Cold War. The question of Russian

compliance threatens to tarnish the White House's arms control legacy and President Obama's vision of a world in which there would be fewer nuclear weapons.

Since the INF treaty was signed, some Russian officials appear to have had buyer's remorse, arguing that Moscow needs more ways to respond to the potential array of threats around its

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periphery. During the administration, Russia's suggested that the two sides drop the treaty.

The Obama administration says that the treaty is in the overall interest of the US even if some of its provisions are being violated. When the US charged Russia with violating the accord two years ago, Mr. Obama sent a letter to President Vladimir Putin stressing his interest in a high-level dialogue to preserve the treaty and bring the Kremlin back into compliance. American military officials, for their part, have said that a move by Russia to actually deploy the new missile system, which is small, mobile and easily concealed, would be significant. When he served as NATO's top commander in 2014, Gen. Philip M. Breedlove said that "a weapons capability" that violates the INF treaty "can't go unanswered."

How best to persuade the Russians to rectify the alleged violation is also a subject of debate. The Pentagon has produced a list of military steps that could be taken in response, but the White House has yet to approve them. Two years ago, the State Department's senior arms control official raised the idea of imposing "economic measures," but sanctions do not appear to be under consideration. It is unlikely that the verification commission will make progress in resolving the allegation, since the Russians have never acknowledged the existence of the missile, even though American officials say test flights may have begun as early as 2008.

George W. Bush defense minister

This October 2016, Putin also suspended his country's participation in an accord that was

Two years ago, the State Department's senior arms control official raised the idea of imposing "economic measures," but sanctions do not appear to be under consideration. It is unlikely that the verification commission will make progress in resolving the allegation, since the Russians have never acknowledged the existence of the missile, even though American officials say test flights may have begun as early as 2008.

concluded in 2000 on the disposal of plutonium. That agreement does not affect the number of nuclear warheads the US and Russia have, but the suspension of the accord will deprive each side of the opportunity to verify what the other is doing to dispose of plutonium. Mr. Putin said the step was taken because the deterioration of American-Russian relations had led to a "radically changed environment."

Source: <http://www.nytimes.com/>, 19 October 2016.

USA

Updated B61 Nuclear Bomb to Cost \$8.25 Billion

The life-extension program for the B61-12 atomic bomb will cost just over \$8.25 billion, according to a new estimate from the NNSA. The new cost estimate was completed over the summer as the agency prepared to enter the production-engineering phase of the program. The baseline cost of the program is \$7.605 billion, with an additional \$648 million in "funds leveraged from other NNSA programs for technology and manufacturing readiness," according to an agency statement – money that has common applications across multiple weapon systems.

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That cost does not include the estimated \$1.3 billion that the Department of Defense plans to spend on developing and procuring

tailkits for the weapons. With that included, the total cost for the program sits at roughly \$9.5 billion. The NNSA is a semi-autonomous

department within the Department of Energy. While the Defense Department manages the delivery systems of the nuclear force — ships, planes and missiles — NNSA has oversight over the development, maintenance and disposal of nuclear warheads.

The agency is perusing a modernization plan known as the “3+2 Strategy,” under which The NNSA is consolidating the American arsenal of warheads into five variants. The five ballistic-missile warheads now in service are being consolidated into three new interoperable warheads known as the IW-1, IW-2, and IW-3, while the five bomb and cruise-missile warhead types are being consolidated into two replacement warhead designs, the W80-4 and the B61-12.

The B61-12 replaces the B61-3, -4, -7 and -10 variants, in a move that proponents say will both update aging parts of the weapons and drive down costs for upkeep. “The B61-12 LEP is the most complex B61-12 activity the nuclear security enterprise has undertaken in more than 20 years,” the agency said in a statement. “This weapon plays a critical role in national security and directly supports President Obama’s directive to maintain a safe, secure, and effective nuclear deterrent, while reducing the size of the nuclear stockpile.”

Kingston Reif, with the Arms Control Association, said the fact that the cost estimate has stayed within a 2013 range suggests NNSA’s leadership does not foresee major problems in executing the life extension going forward. That 2013 cost estimate ranged between \$7.3 and \$9.6 billion.

Source: Aaron Mehta, <http://www.defensenews.com/>, 20 October 2016.

USA–SOUTH KOREA

S. Korea, US Agree to Launch High-Level ‘Extended Deterrence’ Dialogue

South Korea and the US agreed to launch a high-level dialogue to discuss how to carry out the US

“extended deterrence” protection of the Asian ally from nuclear and missile threats from North Korea. The agreement to establish the “Extended Deterrence Strategy and Consultation Group” was reached in “two plus two” alliance talks that brought together South Korean Foreign Minister Yun Byung-se and Defense Minister Han Min-koo, and their US counterparts, Secretary of State John Kerry and Defense Secretary Ash Carter.

It represented a firmer commitment from Washington to use nuclear weapons and all other military capabilities to defend the ally amid heightened security concerns in South Korea in

the wake of the North’s fifth nuclear test in September 2016 and a series ballistic missile launches. “Extended deterrence” refers to the commitment to use nuclear weapons to deter attacks on allies. The US has provided extended deterrence or a “nuclear umbrella” to South Korea after withdrawing nuclear warheads from the country

in the early 1990s.

Ensuring the commitment’s implementation was a key focus of talks. “I assured the minister of our commitment, the US’ commitment, to defend South Korea through a robust combined defense posture and through extended deterrence, including the US nuclear umbrella, conventional strike and missile defense capabilities,” Kerry said during a joint news conference with Yun after the talks.

... Kerry also said the US will never accept North Korea as a nuclear state. “If the North continues to violate international law by pursuing its ballistic missile and nuclear weapons programs, it will come under even stiffer sanctions, greater pressure and be left further and further behind while the rest of the region prospers,” he said. Kerry also said the US will deploy the THAAD missile defense system to the South as early as possible.

Yun said that the two countries will discuss details of extended deterrence when their defense ministers hold annual talks....

The NNSA is consolidating the American arsenal of warheads into five variants. The five ballistic-missile warheads now in service are being consolidated into three new interoperable warheads known as the IW-1, IW-2, and IW-3, while the five bomb and cruise-missile warhead types are being consolidated into two replacement warhead designs, the W80-4 and the B61-12.

The meeting could include discussions on bringing in US strategic assets to South Korea, such as nuclear-capable B-52 and B-1B bombers, F-22 stealth fighter jets and nuclear-powered, cruise-missile submarines....

... Kerry said the US is working to come up with additional UN sanctions on the North with a focus on closing the "livelihood loophole" in the last UN Security Council resolution, referring to the exception that allows Pyongyang to export coal for livelihood purposes. The US will continue to pursue such pressure measures as they are "entirely preferable obviously to the military choice which we have again and again said is a last resort only as a matter of defensive measure to protect our nations," Kerry said. Kerry also said the US is serious about imposing sanctions on individuals and entities assisting the North with its weapons programs..."the US commitment to the defense of South Korea is unwavering. This includes our commitment to provide extended deterrence, guaranteed by the full spectrum of US defense capabilities. This include our commitment to provide extended deterrence guaranteed by the full spectrum of US defense capabilities," he said.

...The talks came just a few days after Pyongyang carried out a banned test of a Musudan intermediate-range ballistic missile, believed to be capable of reaching the US territory of Guam, about a month after its fifth nuclear test.... In the SCM talks, the two sides are also expected to check on progress in efforts to deploy the US THAAD missile defense system in the South, while reaffirming that the deployment is aimed only at defending against North Korean threats and poses no threats to China and other countries.

Source: <http://english.yonhapnews.co.kr/>, 20 October 2016.

BALLISTIC MISSILE DEFENCE

NORTH KOREA

North Korea's Ballistic Missile Launch Unsuccessful, Pentagon Says

US Strategic Command's systems detected a failed North Korean intermediate ballistic missile

launch, the Pentagon said. The launch allegedly occurred near the northwestern city of Kusong. "We strongly condemn this and North Korea's other recent missile tests, which violate UNSC resolutions explicitly prohibiting North Korea's launches using ballistic missile technology," Pentagon spokesman Gary Ross reportedly said. The reasons for the launch's failure were not specified. The Musudan missile has an estimated range of up to 2,500 miles, which could reach South Korea, Japan and Guam.

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Ross said that the latest launch "did not pose a threat to North America." North Korea has not commented on this incident yet. "This provocation only serves to increase the international

community's resolve to counter the DPRK's prohibited activities, including through implementing existing UNSC sanctions," Ross said. "Our commitment to the defense of our allies, including the Republic of Korea and Japan, in the face of these threats, is ironclad."

...Despite a UN an on using ballistic and nuclear technology, North Korea has conducted several missile tests in 2016. The country conducted its fifth nuclear test in September. The reclusive nation has repeatedly said that its programs are for peaceful purposes but the US, South Korea and North Korea's major ally, China, all say the latest launches are focused on developing ballistic missiles.

Source: <http://www.ibtimes.com/>, 16 October 2016.

NUCLEAR ENERGY

CHINA

Small Nuclear Plant to Power China's Big Plan?

The plan is to install it in the South China Sea, where China has for long been locked in a dispute with nearby nations and the US. A research institute in China is developing the world's "smallest nuclear power plant", according to a report in the South China Morning Post. The plan is to install it in the South China Sea, where China has for long been locked in a dispute with nearby nations and the US.

What is China Building: According to the South China Morning Post, the Institute of Nuclear Energy Safety Technology at Hefei has been tasked with developing the power station. The report says work on the unit, dubbed the "hedianbao" or the "portable nuclear battery pack", will be partially funded by the country's Army.

How Big is the 'Smallest Reactor?': The lead-cooled reactor, 6.1 metres long and 2.6 metres high, roughly the size of a mini-bus, is said to be "small

enough to fit inside a shipping container." It is expected to generate around 10 megawatts of electricity to power close to 5,00,000 households. Chinese scientists say that it is capable of running for years, maybe even decades, without refuelling. State-run *Global Times* quoted the China National Nuclear Cooperation as saying that the country plans to build 20 floating nuclear power plants to bolster power and water supplies on the SCS islands.

Why does China need Nuclear Reactors in the South China Sea?: According to analysts, the reasons mostly seems political. China wants to assert political and military superiority in the region, which is under challenge from Philippines, Vietnam, Malaysia, Brunei and Taiwan. China has been building infrastructure on the disputed islands, even building man-made islands, to consolidate its hold on the area after an international tribunal quashed its claims over almost all of the SCS in July

this year. The remoteness and size of some of these islands make it difficult for them to receive power from the mainland. And since the islands also lack freshwater sources, a large amount of

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electricity would be needed to desalinate seawater for potential inhabitants. How groundbreaking is the technology? Not very.

Chinese researchers have mostly refurbished technology from the Soviet Alpha-class nuclear submarines of the 70s.

How Safe is it?: Several unnamed Chinese researchers quoted in the South China Morning Post report have raised concerns. Should an accident happen or were a natural calamity to strike, the radioactive waste

would not only damage countries and people living nearby, but may also spread across the world on the strong currents that are common in the region. Marine scientists at the Ocean University of China have also warned that the discharge of hot, radioactive water from the plant into the sea might significantly alter the region's ecological system.

Source: <http://indianexpress.com/>, 13 October 2016.

China to Overtake US Nuclear Capacity

The growth of China's nuclear power industry will make it the world's biggest in 15 years, WNA reported. The country will overtake France to have the second-largest number of nuclear reactors by 2020, according to WNA director general Agneta Rising. China's push to develop nuclear energy comes from the need to improve air quality in its rapidly growing cities as well as reduce greenhouse gas emissions in line with international commitments.

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The country has one of the highest rates of air pollution related deaths in the world.

...The WNA report showed that in Asia 134

operable reactors generated 400 terawatt hours of electricity last year, making up 16 percent of global nuclear generation. There are firm plans to increase that figure, with 39 reactors comprising 47.4 GW currently under construction in Asia. Twenty of those are to be built in China. Beijing has set a goal to generate 58 GW of nuclear energy by 2020. A gigawatt of power provides enough energy for about 700,000 homes. By 2050, nuclear power generation in China is expected to exceed 350 GW, including about 400 new nuclear reactors at a cost of over a trillion dollars....

Beijing has set a goal to generate 58 GW of nuclear energy by 2020. A gigawatt of power provides enough energy for about 700,000 homes. By 2050, nuclear power generation in China is expected to exceed 350 GW, including about 400 new nuclear reactors at a cost of over a trillion dollars.

According to the report, there are plans for more than 50 reactors providing more than 50,000 MW in nine new countries in the region. Most of them plan to have their first nuclear reactors enter operation before 2030. New reactor construction is mostly led by industrializing countries which have enjoyed high levels of economic growth with an accompanying increase in energy demand, the WNA said....

Source: <https://www.rt.com/>, 26 October 2016.

South China Sea War: China Developing Smaller Nuclear Equipment

The struggle for power is real among the Asian countries that have some claim over the South China Sea. While there are some countries that favor peaceful negotiations to prevent any war, China is determined to stand their ground. This makes the issue of South China Sea war even more heated. While the surrounding countries have been doing their best to stay grounded, tensions may skyrocket after Beijing's latest revelation.

An Ulterior Motive?: Beijing has revealed their secret plan to float an atomic reactor to the disputed seas. Not only is the weapon going to be floating in the area, but it will reportedly be hidden inside a shipping container. This alone seems pretty hard

to believe, but China is reportedly developing new lethal weapons. Experts say that Beijing is reportedly making the world's smallest nuclear plant. It is so small that it is dubbed as a

"portable nuclear battery pack" and can fit inside a small steel box. While it is still being developed, experts speculate that it could be ready within five years.

This lead cooled reactor could generate 10 megawatts of power, which is enough to power 50,000 homes. That is a lot

of power for something that is just 6.1 meters long and 2.6 meters high. Apart from its portable size, it will be capable of desalinating large quantities of sea water to be used in the plant. However, this would pose a threat and danger to the surrounding countries as it would be vulnerable to environmental disasters.

The South China Sea war may get even more heated if radioactive wastes from the reactor affect the local fish stocks.

The Risks: What China doesn't take into consideration is the possible risk it poses to the environment and the marine creatures. It won't affect the mainland directly but the wastes ingested by the sea creatures could end up on a dining table....

Source: Kristina Jacomina, <http://www.morningledger.com/s/>, 13 October 2016.

CHINA-INDIA

China does not Want to De-Friend India at the Cost of Pakistan, Says Former Foreign Secretary

... China has said that it is ready to have talks with India on the latter's entry into the NSG. Former foreign secretary Bhupatray Shashank

said China does not want to de-friend India at the cost of Pakistan. Shashant told ANI, "China is saying that India has to negotiate with all the members of the NSG. So, it's not a bilateral issue." "China is trying to divert attention from its own role in blocking India's entry into NSG by saying 'look you have not spoken to others and they are others, who are blocking it,'" he added....

About the NSG, China's Vice Foreign Minister said "These rules are not to be decided by China alone...we are ready to continue consultations with India to build consensus and we also hope India can go to other members of the NSG as well."

To prevent India's entry, China has said that the NSG's rules disallow a member who has not signed the nuclear Non-Proliferation Treaty. India has said it will not surrender its national interest by signing the accord, but its track record of non-proliferation should entitle it to join the NSG.

India was granted an NSG waiver in 2008 that allows it to engage in nuclear commerce, but deprives it of a vote in the organisation's decision making.

Source: www.newindianexpress.com/, 12 October 2016.

FRANCE

France Avoids Nuclear Plant Closure Decision as Election Looms

France has delayed a decision on promised nuclear reactor decommissioning, effectively putting on hold a process that could ultimately be overturned with a change of government next year.

A government investment roadmap published on 28 October stopped short of identifying reactors for closure under 2015 legislation that commits France to reducing atomic energy to 50 percent of its electrical power mix, from more than 75 percent currently. Instead, the Energy Ministry

plans leaves it to state utility EDF to issue a strategic review of plants and energy requirements around April of next year. However, the final decision on whether the reactors are scrapped is a political one.

France goes to the polls in the first round of presidential voting in April, followed by legislative elections in June - meaning the issue looks unlikely to be resolved before a new president and assembly has been elected. Former Prime Minister Alain Juppe, the conservative candidate currently leading the race, has called Socialist President

Francois Hollande's 50 percent target absurd and vowed to scrap it, in common with several other right-wing candidates. Lawmaker Herve Mariton, a Juppe ally and prominent energy specialist among the conservative Les Republicains, has also rejected Hollande's plan to close EDF's ageing Fessenheim plant after a new reactor opens at Flamanville in 2018.

Opinion polls show conservative candidates easily defeating any potential Socialist rivals in the presidential election, which takes place in two rounds, the second due in May. Environmental group Greenpeace said the French government was failing to implement the 2015 energy law and had betrayed last year's Paris Climate Agreement to curb climate-warming emissions by not doing enough to support renewable energy alternatives.

In order to meet the 2015 commitment, France would have had to decide on the shutdown of 22 reactors by now, it said. According to the energy investment plan published on 28 October, a decision to close Fessenheim, France's oldest nuclear plant, will be taken by the end of the year. The plan also pledged to almost double renewable power output to 150-167 TWh by 2030. The plan also seeks to cut nuclear power output by 10 to 65 TWh by 2023.

Source: <http://www.reuters.com>, 29 October 2016.

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INDIA

Kudankulam II Project Launched

India and Russia have officially launched the second phase of the Kudankulam nuclear power plant under construction in the Indian state of Tamil Nadu by Rosatom as part of an intergovernmental agreement signed between Moscow and New Delhi in 1998. During the summit, the two countries also announced they had finalized the general framework agreement and credit protocol on construction of units 5 and 6, with their signing to take place before the end of the year.

The inauguration ceremony was held during the BRICS summit held in Goa, when Indian PM Narendra Modi and Russian President Putin also laid the foundation stones for the third and fourth blocks of the Kudankulam plant via a video conference.... Limarenko said in a Rosatom statement on 15 October: "Today we are handing over the second power unit of Kudankulam NPP for operation. We have undertaken great obligations and fulfilled them. This is an exclusive result of our joint efforts with Indian partners. Our unified Russian-Indian team did an excellent job. We continue our work guided by unconditional principles of safety and efficiency...."

India has completed the required preparatory works in order to start construction of units 3 and 4, Rosatom said, adding that all the necessary infrastructure and design documentation have been established. ASE Group's customer – NPCIL – has also obtained regulatory approval to carry out excavation works and has already started them, Rosatom said.

"We have started a new large-scale project on construction of the third and fourth power units," Limarenko said. "The current start of the second stage of Kudankulam NPP from the first concrete pouring for the foundation stone of units 3 and 4 is a next important step of our time-proven Russian-Indian partnership. We have intensely hard work ahead, but we are sure that only jointly with Indian partners can we achieve success in our joint activities in the interests of our

countries."

The Kudankulam plant is of the Atomenergoproekt design with VVER-1000 MW power units, which fully meet the requirements of Russian regulatory authorities and the IAEA, Rosatom said. In a separate statement from the India government on 15 October, Modi said: "Just minutes ago, with dedication of Kudankulam 2 and laying of foundation concrete of Kundankulum 3 and 4, we saw the tangible results of India-Russia cooperation in the field of civil nuclear energy. And, with proposed construction of another eight reactors, our wide ranging cooperation in nuclear energy is set to bring rich dividends for both of us. It also fits in with our needs of energy security, access to high technology and greater localization and manufacturing in India."...

Source: World Nuclear News, 17 October 2016.

PAKISTAN

Country's 4th Nuclear Power Plant of 340 MW Starts Operation: PAEC

Country's fourth nuclear power plant at Chashma Unit-3 (C-3) with 340 MW power generation capacity, has been successfully connected to the national grid, Pakistan Atomic Energy Commission (PAEC) revealed.... Pakistan's 4th nuclear power plant Chashma unit-3(C-3) has been connected to the national grid," the PAEC sources said and added hence starting supply of electricity generate by this unit to the national grid on trial basis. They said "After performing various safety and functional tests, the plant will attain full power in first fortnight of December 2016 and a formal inauguration ceremony of the full power grid connection will be held in December 2016."

Chairman PAEC Muhammad Naeem, on achieving this milestone, has re-affirmed that the scientists, engineers and technicians of PAEC are working hard to contribute in achieving all the targets set to ensure energy security for the country. He acknowledged the support of Strategic Plans Division and the government for help achieve these targets.

Pakistan's first nuclear power plant KANUPP at

Karachi, is in operation for the last 44 years. The other two nuclear power plants C-1 and C-2 at Chashma are generating electricity with more than 90% capacity factor. These are the best performing power units among all power generating units of the country from all sources. These nuclear plants are supplying around 600 MW to the grid. Two larger capacity nuclear power plants K-2 and K-3 near Karachi are under construction and will be completed in 2020 and 2021 respectively.

Source: <http://www.app.com.pk/>, 16 October 2016.

TAIWAN

Taiwan to End Nuclear Power Generation in 2025

In a rare move for power-hungry Asia, the Taiwanese government has decided to abolish nuclear power generation by 2025 to meet the public's demand for a nuclear-free society following the Fukushima nuclear disaster. Taiwan's Executive Yuan, equivalent to the Cabinet in Japan, approved revisions to the electricity business law, which aim to promote the private-sector's participation in renewable energy projects, on 20 Oct 2016 "Revising the law shows our determination to promote the move toward the abolition of nuclear power generation and change the ratios of electricity sources," said President Tsai Ing-wen. The government plans to start deliberations on the revised bill in the Legislative Yuan, or the parliament, in the near future, with the goal of passing it within this year in 2016.

... In Taiwan, nuclear power accounted for 14.1 percent of all the electricity generated in 2015. At present, three nuclear power plants are operating. However, the March 2011 accident at the Fukushima No. 1 nuclear power plant heightened public opinion against nuclear power generation. In response to the sentiment, Tsai, who assumed the presidency in May with a vow

of establishing a nuclear-free society, led the government's effort to abolish nuclear power.

Like Japan, Taiwan is hit by many earthquakes. The three nuclear power plants currently in operation will reach their service lives of 40 years by 2025. The revised bill will clearly stipulate that operations of all the nuclear plants will be suspended by that year. The stipulation will close the possible extension of their operations.'

The government is looking to solar power and wind power as the pillars of renewable energies. It aims

to increase their total ratio among all electricity sources from the current 4 percent to 20 percent in 2025. However, meeting the goal assumes that electricity generated by solar power will increase 24-fold in 10 years. Because of that, some people harbor doubts on the viability of the plan.

Source: <http://www.asahi.com/>, 23 October 2016.

The Taiwanese government has decided to abolish nuclear power generation by 2025 to meet the public's demand for a nuclear-free society following the Fukushima nuclear disaster. Taiwan's Executive Yuan, equivalent to the Cabinet in Japan, approved revisions to the electricity business law, which aim to promote the private-sector's participation in renewable energy projects.

NUCLEAR COOPERATION

KAZAKHSTAN- SAUDI ARABIA

Kazakhstan and Saudi Arabia Agree to Nuclear Cooperation

Saudi Arabia and Kazakhstan have signed an agreement to cooperate in the peaceful use of nuclear energy. The agreement was signed in Riyadh during a visit by Kazakhstan President Nursultan Nazarbayev. The agreement was signed by Kazakh energy minister Kanat Bozumbayev and King Abdullah City for Atomic and Renewable Energy (KA-CARE) president Hashim bin Abdullah Yamani. The signing was witnessed by Nazarbayev and Saudi's Custodian of the Two Holy Mosques King Salman bin Abdulaziz Al Saud.

Following a meeting with Saudi Arabia's minister of energy, industry and mineral resource, Khalid Al-Falih, on 24 October 2016, Bozumbayev said,

"Kazakhstan is a leader in the production of natural uranium. We have a joint venture with Russia for uranium enrichment. We produce [fuel] pellets; we are at the stage of creating fuel assemblies. We have the necessary experience, which we can share with our Saudi colleagues."

Kazakhstan has 12% of the world's uranium resources and an expanding mining sector, producing about 23,800 tonnes in 2015, and planning for further increase to 2018. A single Russian nuclear power reactor operated from 1972 to 1999, generating electricity and desalinating water. Kazakh plans for future nuclear power include 300 MWe class units as well as smaller cogeneration units in regional cities. In 2012 the government had a draft master plan of power generation development in the country until 2030. According to this plan, a nuclear electricity share then should be about 4.5%, requiring about 900 MWe of nuclear capacity.

Saudi Arabia is one of several Middle Eastern states looking into setting up a nuclear power program. Although its nuclear program is in its infancy, the Kingdom has plans to construct 16 nuclear power reactors over the next 20 years. A 2010 royal decree identified nuclear power as essential to help meet growing energy demand for both electricity generation and water desalination, while reducing reliance on depleting hydrocarbon resources. Saudi Arabia has signed similar nuclear cooperation agreements with Argentina, China, Finland, France, Hungary, Indonesia, Russia and South Korea.

Source: World Nuclear News, 26 October 2016.

UGANDA–RUSSIA

Uganda Asks Russia for Help in Nuclear Power

Uganda has asked Russia for help in the development of nuclear power. The landlocked country is gearing to boost its generation capacity

to 40000 megawatts to support planned industries under its Vision 2040 development program.

The co-operation with between the two countries was revealed on Friday following a meeting between Uganda and the Russian owned Rosatom State Atomic Energy Corporation. During the meeting, a memorandum of understanding was signed between Rosatom the Ministry of Energy and Mineral Development of Uganda to start cooperation in the peaceful use of nuclear power. ... "The co-operation will see Uganda gain expertise and technology from Russia," said Viktor Polikarpov, Rosatom's regional vice-president of Sub-Saharan Africa.

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In 2002, the Parliament of Uganda approved the principles and areas of the peaceful use of nuclear power and in 2008 passed the Atomic Energy Act establishing the Atomic Energy Council, the national regulator, and the Nuclear Energy Unit forming part of the Ministry of Energy.

According to the Uganda's National Development Plan, the country intends to use its uranium reserves to generate electricity using nuclear power stations. Specialists have noted that by 2035 Uganda will need the generating capacity totaling up to 40,000MW which can only be achieved through nuclear power.

Polikarpov said promoting the co-operation between Russia and Uganda in nuclear power became one of the central issues at the meeting held in Kampala. Those present included Uganda President Yoweri Museveni, officials from the Ministry of Energy and Mineral Development and members of the Russian delegation from Rosatom. During the meeting, Museveni supported the development of nuclear power in the near future and emphasized the importance of professional training of local staff. ...

Source: <http://www.the-star.co.ke>, 29 October 2016.

NUCLEAR DISARMAMENT

GENERAL

Hibakusha Join Activists at UN Event in Calling for Nuke Ban Treaty

Atomic bomb survivors from Hiroshima and Nagasaki joined anti-nuclear activists in New York where they voiced their concerns ahead of a General Assembly meeting that will vote on whether to ban nuclear weapons. The resolution, to be voted on in the coming weeks, has the potential to break a decades-long stalemate over the legality of nuclear weapons. It sets out to establish a mandate in 2017 on a "legally binding instrument to prohibit nuclear weapons, leading toward their total elimination," and has given aging atomic bomb survivors a renewed sense of optimism.

...Morikawa survived the bombing of Hiroshima. He was 6 years old and just 9 kilometers (5.5 miles) away from the epicenter when the device detonated over his city. Along with his father, mother and younger sister, Morikawa was also exposed to nuclear fallout from the bomb, such as "black rain."

Morikawa raised concerns about the roughly 15,000 nuclear weapons that still exist today despite dramatic reductions having been made since the height of the Cold War. At one time, there were roughly 70,000 nuclear weapons in the world. He pointed out that about 4,000 nuclear missiles are always at the ready and could be fired "at a moment's notice." "The existence of even one atomic weapon is one weapon too many," he said, adding that the best way to stigmatize the bombs is by sharing the inhumane impact they had on people like himself.

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In the UN's disarmament and international security committee, 123 nations voted in favour of a nuclear ban treaty, 38 opposed and 16 abstained. Australia was one of the nations that voted no. UN member states have voted overwhelmingly to start negotiations on a treaty to ban nuclear weapons, despite strong opposition from nuclear-armed nations and their allies.

Like Morikawa, Noriko Sakashita, another Hiroshima hibakusha, and Joji Fukahori, who lived through the Nagasaki bombing, also called upon people around the globe to help them realize their dream of a nuclear free world. They had come to the city on the Peace Boat, which is operated by a Japanese nongovernmental organization whose aim is to build friendships and spread pacifism around the world.

...The Peace Boat, on its 92nd voyage, stopped in New York on its way from Europe. It will continue on to the Bahamas and Cuba. Fukahori, for his part, made his remarks at a packed auditorium full of students from the United Nations International School. He recounted the tremendous hardships he, as a 14-year-old junior high school student, faced after losing his mother and three siblings following the Nagasaki blast on Aug. 9, 1945. "I cannot agree with nuclear weapons," he told the students through a translator. "I would really like to ask for your cooperation to work together toward a world that has peace and no wars."

...The hibakusha and other activist say they remain hopeful the UN resolution will be adopted. "The achievement of this goal will be nothing less than the realization of a dream that hibakusha have held in their hearts for 71 years — a world without these evil weapons," said Morikawa.

Source: <http://www.japantimes.co.jp/>, 22 October 2016.

UN Votes to Start Negotiating Treaty to Ban Nuclear Weapons

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abstained. Australia was one of the nations that voted no. UN member states have voted overwhelmingly to start negotiations on a treaty to ban nuclear weapons, despite strong opposition from nuclear-armed nations and their allies. In the vote in the UN disarmament and international security committee on 28 October 2016, 123 nations were in favour of the resolution, 38 opposed and 16 abstained. Nuclear powers the US, Russia, Israel, France and the United Kingdom were among those that opposed the measure.

Support for a ban treaty has been growing steadily over months of negotiations, but it has no support from the nine known nuclear states – the US, China, France, Britain, Russia, India, Pakistan, Israel and North Korea – which includes the veto-wielding permanent five members of the Security Council.

Australia, as a long-time dependant on the US's extended nuclear deterrence, also voted no. Australia will not support negotiations to outlaw nuclear weapons. The resolution now goes to a full general assembly vote some time in December 2016. The resolution aims to hold a conference in March 2017 to negotiate a "legally binding instrument to prohibit nuclear weapons, leading towards their total elimination". Support for a ban treaty has been growing steadily over months of negotiations, but it has no support from the nine known nuclear states – the US, China, France, Britain, Russia, India, Pakistan, Israel and North Korea – which includes the veto-wielding permanent five members of the Security Council.

But Australia has been the most outspoken of the non-nuclear states. During months of negotiations, Australia has lobbied other countries, pressing the case for what it describes as a "building blocks" approach of engaging with nuclear powers to reduce the global stockpile of 15,000 weapons. Australia has consistently maintained that although nuclear weapons exist, it must rely on the protection of the deterrent effect of the US's nuclear arsenal, the second largest in the world.

...The efficacy of a ban treaty is a matter of fierce debate. Without the participation of the states that actually possess nuclear weapons, critics argue it cannot succeed. But proponents say a nuclear weapons ban will create moral suasion –

in the vein of the cluster and landmine conventions – for nuclear weapons states to disarm, and establish an international norm prohibiting nuclear weapons' development, possession and use. Non-nuclear states have expressed increasing frustration with the current nuclear regime and the sclerotic movement towards disarmament. With nuclear weapons states modernising and in some cases increasing their arsenals, instead of discarding them, more states are becoming disenchanted with the nuclear non-proliferation treaty and lending their support for an outright ban.

Source: The Guardian, 28 October 2016.

NUCLEAR NON-PROLIFERATION

ARMENIA–USA

Armenia, US to Step Up Cooperation Against Nuclear Proliferation

The Armenian government, 20 October 2016 approved the extension of an agreement with the US on countering the proliferation of weapons of mass destruction. The document first signed in 2000 will be extended for another seven years. Under the agreement, the parties will prevent the spread of nuclear weapons, as well as directly related materials, technology and knowledge, chemical and biological weapons. To support the initiative, the United States will provide Armenia with equipment and technologies, as well as advice, if necessary.

Source: <http://www.panarmenian.net/>, 20 October 2016.

NUCLEAR PROLIFERATION

NORTH KOREA

US, Japan, South Korea Agree to Increase Pressure

South Korea, Japan and the US have agreed to work together to increase pressure on North Korea

to give up its nuclear weapons. The deputy foreign ministers of South Korea, Japan and the US made the announcement after meeting in Tokyo. It comes after top US intelligence official James Clapper said that North Korean denuclearisation was “probably a lost cause”.

... Speaking after the Tokyo talks, US Deputy Secretary of State Antony Blinken said: “We will not accept North Korea’s possession of nuclear weapons, period.” On Tuesday, Mr Clapper told an audience in New York that North Korea’s “paranoid” leadership saw nuclear weapons as “their ticket to survival” and the best the US could hope for was a cap on their capabilities.

Following the comments, the US State Department said its policy had not changed and it still aimed for a resumption of the six-nation talks that North Korea pulled out of in 2009.

Also on Thursday South Korea said it would restart talks with Japan on direct sharing of military intelligence on North Korea – information that currently goes via Washington. South Korea is also expected to begin hosting an advanced US missile defence system soon, despite opposition from North Korea and China.

Source: <http://www.bbc.com/news/world-asia-37785071>, 27 October 2016.

NUCLEAR SECURITY

PAKISTAN

Increasing Risk to Pakistan NW from Army not Terrorists: Menon

Shivshankar Menon says Pakistan is the only nuclear weapon programme in the world that is exclusively under military control. The ‘real threat’ to Pakistan’s nuclear weapons is from rogue elements inside its military rather than from

Pakistan is the only nuclear weapon programme in the world that is exclusively under military control. The ‘real threat’ to Pakistan’s nuclear weapons is from rogue elements inside its military rather than from the terrorist outfits.

the terrorist outfits, India’s former national security advisor Shivshankar Menon has said. Noting that terrorists have easier and cheaper ways of wreaking havoc, Menon said the nuclear weapons are complex devices that are

difficult to manage, use and deliver and require very high level of skills.

Source: <http://indianexpress.com/>, 12 October 2016.

NUCLEAR SAFETY

USA

Nuclear Plants Leak Critical Alerts in Unencrypted Pager Messages

Nuclear power plants, chemical plants, defense contractors and other highly sensitive industries and workers are leaking information through their pagers, a new report shows.

Pagers have been out of vogue with the public since the rise of the cellphone but are still used to send automated messages from industrial systems or building automation systems. They are a way to make sure employees can get critical updates — including alarms — even when they are away from consoles. But legacy pager systems don’t use encryption to send data.

“Potential abuse of this information leaking out would involve malicious actors who want to break into a facility. To get in, they could monitor the building’s temperature settings, lighting settings, and other sensors and then alter those settings when no one is inside the building,” they wrote of building systems that still

rely on pagers in their report released.

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Looking at the pagers used by nuclear power plants, Trend Micro received information that could be useful in an attack. They were informed when redundant systems went offline and when pumps slowed, as well as about leaks and medical emergencies — information that could allow an attacker to pose as mechanical or medical staff.

One chemical plant leaked information about the functions of a nearby dam. A defense contractor whose employees relied on an email-to-pager system leaked emails and addresses from 1,400 accounts. Information on employees could be used to trick them into surrendering data, access or account transfers. The report notes that “the US is the only country wherein nuclear plants continue to send paging messages.” Trend Micro recommends that companies tied to using pagers should invest in encryption and data authentication and clamp down on the way the email-to-pager feature is used.

Source: <http://thehill.com/>, 26 October 2016.

NUCLEAR WASTE MANAGEMENT

UKRAINE

Ukraine to Start Active Phase of Nuclear Waste Storage Construction in 2017

Ukraine is going to start active phase of construction works at its Centralized Spent Fuel Storage Facility (CSFSF) in the Chernobyl Nuclear Power Plant Zone of Alienation in March 2017, the press service of Ukraine’s Energoatom nuclear corporation said ...Rybchuk also said that Ukrainian authorities had received a report on CSFSF security and the Energoatom expected a feedback on it within a month.

“The start of an active phase of construction works at the CSFSF site is scheduled on March 2017,” the Energoatom said citing its subdivision Atomproyektinzhiniring’s Director General Olexandr Rybchuk. He added that the first nuclear fuel delivery to the CSFSF would take place in late 2018. On October 21, Ukraine’s Minister of Energy and Coal Industry Igor Nasalik said that Ukraine would not pay Russia for nuclear waste disposal since 2017 as it was going to build its own nuclear waste storage....

Source: <https://sputniknews.com/>, 24 October 2016.



Centre for Air Power Studies

The Centre for Air Power Studies (CAPS) is an independent, non-profit think tank that undertakes and promotes policy-related research, study and discussion on defence and military issues, trends and developments in air power and space for civil and military purposes, as also related issues of national security. The Centre is headed by Air Marshal Vinod Patney, SYSM PVSM AVSM VrC (Retd).

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