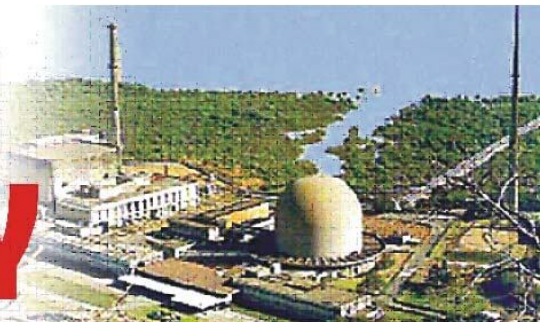
NUCLEAR SECURITY



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

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OPINION – Manpreet Sethi

No Case for Simultaneous NSG Membership for India and Pakistan

In the midst of nearly daily attacks by home grown terrorists on its own populace, Pakistan found a moment of cheer when China engineered an unfavorable consideration of India's case for NSG membership in June 2016. Having submitted its own application for membership within days of India doing so, Pakistan was hoping to piggyback the Indian case. Indeed, its all-weather friend China boldly stepped in to press home the point that there could not be a single country consideration without making a similar exception for other NPT holdouts. Both lobbied for the simultaneous inclusion of India and Pakistan, and if that was not to happen, then to deny a consideration of the Indian membership too.

In fact, by tying Pakistan to India's coattails, China has cleverly sought to stymie India's chances since those who are vehemently against Pakistan's entry into the NSG are forced to rule against India's membership. Meanwhile, Islamabad has since been building its own case for membership of the NSG along with India.

Pakistan was hoping to piggyback the Indian case.... In fact, by tying Pakistan to India's coattails, China has cleverly sought to stymie India's chances since those who are vehemently against Pakistan's entry into the NSG are forced to rule against India's membership.

The major argument that Pakistan makes for a simultaneous grant of NSG membership to both is to "ensure parity for regional stability". A longing for parity has indeed been an obsession for the country since its independence. Despite being nearly one fourth the size of India, about one tenth the size of its economy, nearly one sixth the size of its population and several notches behind on every other human development parameter (not that India has very high standards either), the country's desire for military parity refuses to wither. Buoyed by this mindset, it has resented the India-US agreement for civilian nuclear cooperation and India's exceptionalisation by the NSG. This de-hyphenation of India and Pakistan on non-proliferation, an issue that had long kept them conjoined owing to their non-membership of the NPT, has rankled Islamabad.

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Craving for parity to be restored, Pakistan campaigns against the country-specific approach favoured by the NSG members since a consideration on the independent merit of the country throws up the stark contrast between the two in terms of their nuclear histories, behavior and strategies. Wanting to gloss over its by now well documented history of proliferation, Pakistan presses for a criteria-based approach for the NSG membership. But the point is that no criteria designed to promote the cause of non-proliferation (the objective of the NSG), cannot but not take into account the myriad risks posed by a fast expanding nuclear arsenal that seeks developing and deploying tactical nuclear weapons in a politically volatile, terrorism supporting nation. In fact, the dilemma that Pakistan faces on this front is actually of its own making. On the one hand, its nuclear deterrence strategy is based on blatant brinkmanship that rests on keeping nuclear weapons in full view of India and the US in order to use them as a shield against the possibility of retribution for state sponsored terrorism. On the other hand, the country wants to project itself as a responsible nuclear power in order to be mainstreamed into the nuclear regime. Unfortunately, the two cannot go hand in hand. A choice will have to be made.

No criteria designed to promote the cause of non-proliferation (the objective of the NSG), cannot but not take into account the myriad risks posed by a fast expanding nuclear arsenal that seeks developing and deploying tactical nuclear weapons in a politically volatile, terrorism supporting nation.

There is no equivalence between the Indian and Pakistani cases for NSG membership – neither on the scale and nature of their nuclear power programmes, nor in the capabilities of their nuclear industries to link into the global nuclear supply chains, and least of all in the level of responsibility shown through their programme histories. In earning the nuclear cooperation agreement with US, India bore the cost of offering for safeguards several indigenous facilities Pakistan has none to offer.

The fact of the matter is that at this moment there is no equivalence between the Indian and Pakistani cases for NSG membership – neither on the scale and nature of their nuclear power programmes, nor in the capabilities of their nuclear industries to link into the global nuclear supply chains, and least of all in the level of responsibility shown through their programme histories. In earning the nuclear cooperation agreement with US, India bore the cost of offering for safeguards several indigenous facilities (nuclear reactors and fuel cycle assets). Pakistan has none to offer. The differences are clearly evident. In fact, India meets all the factors for consideration for NSG membership as listed on the group's website (including adherence to the principles of NPT, which China has tried to mischievously morph into membership of NPT).

In treating the cases of India and Pakistan independently of one another and on the basis of their individual merits and demerits as they should be, the non-proliferation regime has a golden opportunity to set an example that strongly dis-incentivises wrongful nuclear behavior. Grant of membership, or even the consideration of its application along with India (which itself constitutes parity in the mind of Pakistan) would only embolden the military to continue down the path they are presently on and even claim it as victory for such behavior. Use of terrorism as an instrument of state policy from behind the shield of nuclear weapons and dangers of deployed TNWs are all matters of deep concern for international security. Holding up NSG membership till such time as tangible reforms are visible offers a leverage that should be used judiciously to effect changes in Pakistan's nuclear behavior.

Meanwhile, one can be sure that other nations are watching and making their own assessments on the benefits that possession of nuclear weapons offer for blackmail and hard-core political bargaining. The future course of the non-proliferation regime lies in its own decisions.

Source: http://southasiamonitor.org/, 04 September 2016.

OPINION – Hina Pandey

India-Pakistan Non-Testing Agreement: A Non-Starter!

Recently, Pakistan's Advisor to the Prime Minister on Foreign Affairs, Sartaj Aziz, offered India, a nuclear non-testing bilateral arrangement amidst the widening chasm in India-Pakistan relations. This is the second time in a month that Pakistan's senior official has offered such a course of action to India for improving the prospects of peace in the region. A similar offer was also made in the immediate aftermath of the 1998 nuclear tests, when Pakistan offered India mutual accession to the CTBT. As much as the idea of nuclear sensibility on part of Pakistan and the possibility of nuclear restraint in South Asia is desired, the prospects of it getting translated into actual practice is near impossible. There are three primary reasons for this:

India is hopeful of its NSG membership on the basis of these commitments; entering into a bilateral agreement for the same would actually mean weakening its own case. The no testing agreement might send positive signals regarding Pakistan, but it does not translate into anything meaningful for India. Furthermore, India has confidence in its good standing as far as NSG membership is concerned, so proving anything is not really required.

Mismatched Agenda for Talks: The timing for this specific nuclear CBM could not be more incompatible. Both India and Pakistan tried to mend the peace process with the onset of fresh leadership. However, in the last one year, especially post the Pathankot attack, the trajectory of bilateral relations has fluctuated so much so that any prospects for talks aiming at giving away nuclear concessions would be perceived in New Delhi as irksome. This should also be viewed in the context of India's recent setting of a clear agenda for bilateral talks. The absence of the nuclear topic from this agenda is a clear indication that India would not like to entertain it at this time. In the current setting, any conversation between India and Pakistan is overshadowed by the narrative of meddling into each other's affairs, cross border sparring, and a familiar pattern of the peace process going one step backwards. Additionally, one cannot ignore the element of perpetual mistrust playing spoiler in such a case. Also, in the past year, Pakistan has sent mixed signals to India on the nuclear issue, declaring earlier that it would maintain credible minimum deterrence for balancing strategic stability.

Nuclear Testing is Non-Issue for India's NSG Membership: Ahead of the NSG's upcoming meeting, Pakistan wants to project maturity in nuclear matters. This makes sense for Pakistan, especially when the NSG is currently undergoing a discussion on merit-based criteria. Offering nuclear non-proliferation commitments as a quid-pro-quo could be viewed as a smart move. On the other hand, for India, making such a move may not be desirable as it will likely not add significantly to the Indian case. This is to be understood in light of the current Indian approach towards non-proliferation—"to advance the objectives of nuclear non-proliferation in softer areas," as I have argued elsewhere. The recent ratification of the Convention on Supplementary Compensation for Nuclear Damage, Additional Protocol to the IAEA Safeguards, and Gift Baskets at the 2016 Nuclear Security Summit lend support to this notion.

Additionally, India is hopeful of its NSG membership on the basis of these commitments; entering into a bilateral agreement for the same would actually mean weakening its own case. The no testing agreement might send positive signals regarding Pakistan, but it does not translate into anything meaningful for India. Furthermore, India has confidence in its good standing as far as NSG membership is concerned, so proving anything is not really required. While some Indian media reports may have highlighted China as a road block, it must be understood that the "the door to the NSG is not tightly closed." Currently, the NSG's consultations for membership are based on

candidates having signed the Nuclear Nonproliferation Treaty, but exceptions to this rule have been made earlier and thus India remains hopeful. Besides, India is making dedicated diplomatic efforts towards the same. The no-testing issue in this respect remains diluted.

India's Nuclear Posture is Different: While India in principle welcomes any prospects of restraint in the South Asian nuclear environment, it would likely not participate in any such mechanism at the cost of its own nuclear posturing, especially when China is not involved. Any alteration to the South Asian nuclear reality cannot be perceived without considering Chinese presence. Unlike Pakistan, India's nuclear posture is not single-country specific. Moreover, it must be recognized that the idea of a nuclear-test-ban is a sensitive issue for India, especially while no details are available from the Pakistani sources on the constituents of the bilateral treaty. It is reported that both countries can work out the details based on mutually agreed conditions. Since India already has a voluntary moratorium on nuclear testing in place, it is unlikely that it would translate it into a legal obligation and close its space for diplomatic maneuvering in future. Lastly, the idea of a nuclear test ban through a legal treaty has the potential to be viewed as an indirect accession to CTBT, only without actually signing the treaty, the possibility of which remains unquestionably grim.

Since India already has a voluntary moratorium on nuclear testing in place, it is unlikely that it would translate it into a legal obligation and close its space for diplomatic maneuvering in future. Lastly, the idea of a nuclear test ban through a legal treaty has the potential to be viewed as an indirect accession to CTBT, only without actually signing the treaty, the possibility of which remains unquestionably grim.

Pakistan has to "normalize" its nuclear record on its own, so tying India into its non-proliferation strategy might not be wise. Additionally, while perfection in timing this CBM may have been easier to achieve, the prospects of a legally binding nuclear test ban in South Asia are to be assessed in a realistic setting. It is likely to remain conditioned to the fundamental disparity in India and Pakistan's nuclear posture.

Source: http://southasianvoices.org/, 26 August 2016.

OPINION – Rakesh Sood

Obama's Last Sally for a Safer World

The US President is trying to upend his mixed nuclear record before he ends his term. A no-first-use policy pronouncement by the US could just be what it takes to leave a lasting nuclear legacy. This year, the 71st session of the UN General Assembly will formally open in New York on September 13 and over a fortnight, presidents, prime ministers and foreign ministers will take the podium. There is widespread speculation that this being US President Barack Obama's last plenary, he is considering an address that could have significant implications for US nuclear policy and for the global nuclear disarmament agenda which has now remained frozen for decades.

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Since Ben Rhodes, US Deputy National Security Adviser for Strategic Communications, announced on June 6, "I can promise you today that President Obama is continuing to review a number of ways he can advance the Prague agenda over the course of the next seven months. Put simply, our work is not finished on these issues", the White House has maintained a studied silence on the subject despite the debate under way in the arms control community and among US allies, especially those

that enjoy the security of its nuclear umbrella. Mr. Obama's speech in April 2009 at the Hradcany Square in Prague electrified the world when he announced that "as the only nuclear power to have used a nuclear weapon, the United States has a moral responsibility to act" and pledged "America's commitment to seek the peace and security of a world without nuclear weapons". He promised that "to put an end to Cold War thinking, we (US) will reduce the role of nuclear weapons in our national security strategy and urge others to do the same". The citation for his Nobel Peace Prize later in 2009 praised his "vision of and work for a world without nuclear weapons".

Seven years later, President Obama's nuclear record is a mixed one. The Nuclear Posture Review (NPR) issued the following year (the US undertakes an NPR roughly once a decade) referred to the objectives of "reducing the role of US nuclear weapons" in national security strategy while maintaining strategic deterrence and "stability at reduced nuclear force levels.

***Obama's Nuclear Record**:* Seven years later, President Obama's nuclear record is a mixed one. The Nuclear Posture Review (NPR) issued the following year (the US undertakes an NPR roughly once a decade) referred to the objectives of "reducing the role of US nuclear weapons" in national security strategy while maintaining strategic deterrence and "stability at reduced nuclear force levels". The Nuclear Weapons Employment Strategy that followed in 2013 stated that the US would only consider the use of nuclear of nuclear weapons "in extreme circumstances to defend the vital interests of the United States or its allies and partners". The Defence Department was directed to "strengthen non-nuclear capabilities and reduce the role of nuclear weapons in deterring non-nuclear attacks".

Yet these achievements fall far short of the promises of the Prague speech. The CTBT ratification, which Mr. Obama had promised to push through vigorously, continues to languish. The Nuclear Security Summits created the buzz normally associated with summitry but remained content with shared best practices and voluntarily announced measures.

Negotiations with Russia led to the New START Treaty coming into force in February 2011 which limits US and Russian nuclear arsenals to 700 deployed ICBMs, SLBMs and heavy bombers and 1,550 deployed nuclear warheads. Follow-on negotiations stalled thereafter and the New START will lapse in 2021, unless extended by a five-year period.

Mr. Obama also launched the cycle of Nuclear Security Summits in 2010 to highlight the threats posed by terrorists seeking nuclear materials. This concluded earlier this year with the Washington summit. The nuclear deal with Iran has been praised generally though it has faced criticism from the US's regional allies, Israel and Saudi Arabia. Described as an "executive agreement", it has not been submitted for approval to the Congress where it would have faced Republican opposition.

One of Mr. Obama's boldest decisions was to visit Hiroshima earlier this year, becoming the first serving US President to do so, 71 years after the city was destroyed by the first nuclear bomb. Bypassing the debate about whether his speech would be seen as an 'apology', he called upon countries that possess nuclear weapons to "have the courage to escape the logic of fear and pursue a world without them".

***Running into Resistance**:* Yet these achievements fall far short of the promises of the Prague speech. The CTBT ratification, which Mr. Obama had promised to push through vigorously, continues to languish. The Nuclear Security Summits created the buzz normally associated with summitry but remained content with shared best practices and voluntarily announced measures. Meaningful negotiations on nuclear issues remain deadlocked. But most

important, notwithstanding the careful wording in the 2010 NPR and 2013 Employment Strategy, there has been no significant shift in US nuclear weapons policy. Further, to push through the ratification of the New START treaty, Mr. Obama also authorised a $1-trillion budget over the next three decades for maintaining and improving the US nuclear arsenal under the Stockpile Stewardship Program.

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Realising his failure with the CTBT ratification, Mr. Obama is planning to submit a resolution on this issue to the UN Security Council, 20 years after the CTBT was opened for signature. The US, under President Bill Clinton, had pushed the CTBT negotiations but in 1999, the treaty was rejected by the Senate on account of concerns about its impact on the US nuclear arsenal. Given the current mood in the Senate, it is unlikely to budge.

Even though a resolution by the UN Security Council calling on states to uphold the CTBT would be non-binding, such a move has already been criticised by Senate Foreign Relations Committee Chairman Bob Corker "as an affront to the Congress and the American people". And it is unlikely to persuade China, Iran or Israel to ratify, or for that matter, India, Pakistan and North Korea to sign up!

There are two groups of naysayers arguing against a shift. The first is the realist-sceptic who maintains that declarations are mere words and will not be trusted by potential adversaries the second group of naysayers consists of US allies and partners. NATO allies such as the UK and France are unenthusiastic because it would generate questions in their own societies about the wisdom of their 'first-use' policies.

The idea arousing the maximum interest is therefore a shift away from the current US policy that countenances a 'first-use' of nuclear weapons (though under "extreme circumstances") in response to even a conventional attack, to a NFU of nuclear weapons, implying nuclear retaliation only in response to a nuclear attack. Of the nine countries known to possess nuclear weapons, only China and India maintain an NFU, though in 2003, India qualified its NFU by expanding its right of nuclear retaliation to cover not just nuclear but also a chemical or biological weapon attack. All others maintain a 'first-use' policy. In recent years, there have been suggestions that China's growing concerns about US conventional superiority might push it to review its NFU policy.

Considering that the US accounts for more than 45 per cent of the world's nuclear arsenal, enjoys overwhelming superiority in conventional capabilities and a significant technological advantage in cyber and space capabilities, less dependence on nuclear weapons is not going to diminish its security. Further, a US lead in this regard will create a push for other nuclear weapon states to follow, generating momentum for a global nuclear restraint regime.

There are two groups of naysayers arguing against a shift. The first is the realist-sceptic who maintains that declarations are mere words and will not be trusted by potential adversaries. In doing so, they overlook the fact that first-use policies are inherently destabilising because of high alert postures and tactical deployments, tempting the adversary into a pre-emptive strike. The second group of naysayers consists of US allies and partners. NATO allies such as the UK and France are unenthusiastic because it would generate questions in their own societies about the wisdom of their 'first-use' policies. Others like Japan and South Korea feel that an NFU implies a weakening of US commitment to their security.

It is instructive to recall that a similar debate had raged in Europe during the 1970s and 1980s. Questioning US commitment to use nuclear weapons from its homeland against a Soviet advance into west Europe thereby risking retaliation, European allies demanded forward-basing, leading to the deployment of intermediate-range Pershing and Cruise missiles in west Europe. A decade later, the same argument was turned on its head to claim that forward-basing diminished US commitment and the Europeans became strong supporters of the INF Treaty (1987) which eliminated intermediate-range nuclear weapons from Europe!

***A Moral Revolution**:* The nuclear taboo has held since 1945 and no country wants to see it violated. Since it is not possible to wish away the existing nuclear arsenals, the only way forward is greater nuclear restraint, which is what the NFU does. In a vibrant democracy like the US, a public articulation of an NFU will provide a changed backdrop to its nuclear strategy, posture, deployment and employment guidance. Further, it can permit the US to question the need for tactical nuclear weapons or even vulnerable ICBMs that are maintained on high alert.

Moreover, other nuclear weapon states will find it impossible not to respond. Voluntary declarations, followed by a collective NFU, would become a realisable objective. In 1945, the US shaped the first nuclear age with Hiroshima and Nagasaki. Today, President Obama has the opportunity to shape the 21st century second nuclear age by launching the 'moral revolution' that he promised in Hiroshima. It could become his defining legacy.

Source: The Hindu, 07 September 2016.

OPINION – Satoru Nagao

Long Overdue: India and Japan are Ready for a Full-Fledged Civil Nuclear Deal

Closer cooperation between Japan and India on a range of issues is more and more plausible today than in the past. Japan-India civil nuclear cooperation, in particular, is a good example of an area with immense promise. At a bilateral summit in New Delhi last December 2015, Japanese PM Abe and Indian PM Modi signed a memorandum of agreement on civil nuclear cooperation. And on August 14, 2016, Japan's Yomiuri reported that both prime ministers will conclude a full-fledged nuclear cooperation agreement in November 2016.

Before the two sides can conclude a nuclear cooperation pact, they must resolve their differences over key issues, such as Japanese companies' liability for nuclear accidents, the reprocessing of spent nuclear fuel (important because the plutonium produced through reprocessing of nuclear fuel can be used in nuclear weapons), and the consequences of any future testing of nuclear weapons by India. Despite these thorny issues, it is likely that this agreement will be one of the most important strategic developments for the entire Indo-Pacific balance.

From an economic standpoint, an agreement on the transfer of civil nuclear technology between Japan and India is vital to India's continued economic growth. India's economy began to develop rapidly not long after its government overhauled and liberalized its economy in the early 1990s. But energy is the booming Indian economy's Achilles' heel. In 2013, India overtook Japan as the world's third-largest importer of crude oil. Given the current state of technology, nuclear power is the only realistic means of ensuring a steady supply of energy to meet the nation's burgeoning demand for electric power without producing large-scale carbon emissions.

With this in mind, New Delhi has already concluded a civil nuclear cooperation agreement with a number of countries. US and French companies are eager to launch nuclear power projects in India, but they cannot proceed without large forged components from Japan, some of which claim 80 percent of the global market. And Japan cannot supply those components without a full-fledged nuclear agreement resolving the aforementioned issues. For this reason, a Japan-India nuclear deal is crucial.

This is not India's problem alone. Just as China's economic slowdown has affected the many

countries around the world that trade with China, Japan and other nations in the Indo-Pacific region have a large stake in the Indian economy. A Japan-India nuclear agreement is an essential accomplishment to ensure the steady growth of India's economy and, by extension, that of the entire region.

Some would argue that the Japanese government should not enter into a civil nuclear agreement with a country that has not committed to the NPT. India never signed the treaty and maintains that it is arbitrary and unfair to acknowledge the right of China to possess nuclear weapons, but to deny the same right to India simply because it began testing its weapons a decade later.

If one considers the matter carefully, it becomes clear that civil nuclear cooperation between Japan and India will have virtually no negative impact on the nonproliferation regime. First of all, India has demonstrated a firm commitment to nonproliferation principle in practice. It clearly differs from countries like North Korea, Pakistan, and Iran, which have conducted shady dealings on the "nuclear black market.

However, if one considers the matter carefully, it becomes clear that civil nuclear cooperation between Japan and India will have virtually no negative impact on the nonproliferation regime. First of all, India has demonstrated a firm commitment to nonproliferation principle in practice. It clearly differs from countries like North Korea, Pakistan, and Iran, which have conducted shady dealings on the "nuclear black market." If India continues to control its nuclear technology as carefully as it has for the past half-century, cooperation on the use of nuclear energy for peaceful purposes should not undermine the NPT regime. This is why eleven countries have already signed civil nuclear cooperation agreements with India....

Secondly, even if the international community admits to India's status as the "sixth nuclear great power" along with the US, Russia, the United Kingdom, France, and China, it is feasible that other great powers will not claim the "seventh" or "eighth" position in the near future. North Korea, Pakistan, and Iran have all disqualified themselves by their involvement in illicit trading of nuclear technology. Other countries that may have had nuclear weapons programs in the past (such as South Korea, Taiwan, Libya, Brazil, Argentina, and South Africa) have already shut them down. Although Israel is assumed to have nuclear weapons, it has a longstanding policy of refusing to publicly affirm the fact.

Regardless of these international trends, some in Japan nonetheless argue that the country, as the only nation to experience atomic bombings, must maintain exceptionally rigorous anti-proliferation standards. But the truth of the matter is that India's nuclear policies are very similar to Japan's. Both countries are committed to the "total elimination of nuclear weapons," as they reaffirmed in last December's joint statement. At the same time, both countries realistically acknowledge the need for nuclear deterrence in today's world—India with its own nuclear weapons and Japan under the US nuclear umbrella.

When China began testing nuclear weapons in 1964, both Japan and India were deeply alarmed. Japanese policymakers weighed the idea of developing an independent nuclear capability—possibly in cooperation with West Germany—but such a step was ultimately deemed unnecessary on the grounds that the US "nuclear umbrella" afforded sufficient deterrence. What few people realize is that...India also appealed to the United States, USSR, United Kingdom, and France for a nuclear umbrella but they declined India's request. Developing nuclear weapons itself was the only option left for India.

India has conducted nuclear tests on two occasions, in 1974 and 1998. Many in Japan were highly critical of India. But we need to keep in mind that Japan's long-term commitment to abolishing nuclear weapons has not prevented it from taking advantage of the deterrent power of the US nuclear

umbrella. In this respect, Tokyo's position differs very little from New Delhi's. Japan's commitment to nuclear nonproliferation and the NPT should not be regarded as a fundamental obstacle to the conclusion of a civil nuclear cooperation agreement with India.

Nonproliferation issues aside, a Japan-India civil nuclear cooperation agreement has important strategic implications. Japan and India share deep concerns over China's growing presence and its expanding influence in the East China Sea, South China Sea, Indo-China border, and Indian Ocean. And, in this case, countries in the Indo-Pacific region are concerned regarding how much longer they can rely on US power alone. Between 2000 and 2015, China added 42 new submarines to its fleet while the US commissioned just 13. Japan and India need to cooperate to fill the gap left by a declining US presence in the region.

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In addition to military power, the export of infrastructure is one of the tools that China has used to bring these countries under its sway. The urgency of this is underlined by the fact that China is exporting nuclear plants to Pakistan. Hence, through the civil nuclear deal, Japan should cooperate with India to counterbalance against China's activities to maintain the Asian power balance and dissuade China's assertiveness.

Overall, given the economic, nonproliferation, and regional power balance issues examined above, it is clear that full-fledged Japan-India civil nuclear cooperation is fundamentally a development to be welcomed. The question remains regarding whether India is likely to conduct further testing of nuclear weapons and how such tests would impact the bilateral agreement. India has said that it already has all the test data it needs to ensure the performance of its nuclear weapons. However, if it turns out that the data is insufficient, then further tests might be needed in order to maintain India's nuclear deterrent capability. If India were to conduct a nuclear test, nuclear cooperation between Japan and India—even for peaceful purposes—would become untenable, since there would be no assurance that resources provided by Japan had not been diverted to India's nuclear weapons program. The depth of Japan's concern over this can be gathered from the inclusion of the following item in the December 2015 Japan-India joint statement: "Prime Minister Abe stressed the importance of early entry into force of the CTBT which should lead to nuclear disarmament."

Unfortunately, the CTBT can only go into effect after all 44 states listed in Annex 2 of the treaty have ratified it and eight of those states have yet to do so. But the fact that Japan insisted on including this reference in the joint statement is an indication of its concern over the possibility of future testing. India needs to respect Japan's worries on this point. Provided that India appreciates the need to refrain from nuclear testing, civil nuclear cooperation could well become the basis for a long-term cooperative relationship with major benefits. Such a development would give true meaning and substance to the idea of a "special strategic and global partnership" that Tokyo and New Delhi claim to enjoy.

Source: Satoru Nagao is a research fellow at the Tokyo Foundation and a lecturer in security and national strategy at Gakushuin University; thediplomat.com/, 05 September 2016.

NUCLEAR STRATEGY

UK

Trident Nuke Renewal Starving British Armed Forces of Vital Funding

No threat facing the UK is sufficient to justify the country's nuclear arsenal and its budget should be reallocated to other areas of the military, a former senior officer aboard Britain's last generation of submarines has said. Commander

Rob Forsyth served on British nuclear submarines in the 1960s and 1970s – including on the Polaris model which was the forerunner of today's Trident system. Writing for the Sustainable Security think tank's website, he reneged on his long-held belief that nukes are a vital part of the country's defense. He sketched a number of reasons for his change of heart, not least the impact of funding nuclear weapons at a time when the rest of the armed forces' equipment and personnel are sorely diminished. "When I was at sea in the 1960s and 1970s the UK invested in both the Polaris force and significant conventional armed military forces in all three services," Forsyth says.

In 1982 "the country was able to send a Task Force as far afield as the Falklands and, more importantly, the armed forces were strong and large enough to withstand the quite considerable attrition—particularly in the Navy—in fighting a full-on war," he pointed out. Today, Forsyth warned, the services have gradually become "whittled down to a level in which such a Task Force could not be assembled. By its own admission the Navy does not have enough ships and submarines to meet peacetime commitments – never mind war." He partially blames this on the attitudes of senior officer who allowed British troops to be dragged into two wars in Iraq and Afghanistan.

Forsyth warned, the services have gradually become "whittled down to a level in which such a Task Force could not be assembled. By its own admission the Navy does not have enough ships and submarines to meet peacetime commitments – never mind war.

But the other major factor is budgetary, he claimed, with the cost of building four Successor submarines falling in the region of at least £31 billion (US$41 billion). ... Forsyth called for a rethinking of the UK military to reflect modern threats considering "it is highly unlikely that the UK will ever come under nuclear attack from an enemy remotely susceptible to a threat of nuclear retaliation."

Source: https://www.rt.com/uk/357921-nuclear-trident-renewal-cost/, 01 September 2016.

USA

US B-1B Bombers Fly Near North Korea Following Nuclear Test

The United States on 13 September has sent two nuclear-capable supersonic bombers streaking over ally South Korea in a show of force meant to cow North Korea after its recent nuclear test. The B-1B bombers, escorted by US and South Korean jets, were seen by an Associated Press photographer as they flew over Osan Air Base, which is 75 miles from the border with North Korea. The bombers were likely to return to Andersen Air Force Base in Guam, without landing in South Korea.

Such flyovers are common when always high animosity rises on the Korean Peninsula, which is technically in a state of war as there has never been a peace treaty to officially end the 1950-53 Korean War. ... North Korea is keenly aware of the U.S. presence on the peninsula and of what it considers the U.S. nuclear threat. It uses such flyovers and the American military influence in the South in its propaganda as alleged proof of U.S. hostility that it claims as the reason it needs a nuclear bomb program.

Last nuclear test, the North's fifth, was its most powerful to date. Pyongyang's claim to have used "standardized" warheads in the detonation makes some outsiders worry that it is making headway in its push to develop small, sophisticated warheads that can be mounted on missiles that can reach the U.S. mainland. ...

Source: http://www.nbcnews.com, 13 September 2016.

Obama Unlikely to Vow NFU of Nuclear Weapons

President Obama, who has weighed ruling out a first use of a nuclear weapon in a conflict, appears likely to abandon the proposal after top national

security advisers argued that it could undermine allies and embolden Russia and China, according to several senior administration officials.

Mr. Obama considers a reduction in the role of nuclear weapons as critical to his legacy. But he has been chagrined to hear critics, including some former senior aides, argue that the administration's second-term nuclear modernization plans, costing up to $1 trillion in coming decades, undermine commitments he made in 2009. For months, arms control advocates have argued for a series of steps to advance the pledge he made to pursue "a world without nuclear weapons." An unequivocal no-first-use pledge would have been the boldest of those measures. They contend that as a practical matter no American president would use a nuclear weapon when so many other options are available.

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Former Defense Secretary William J. Perry said in a recent interview, "It's the right time," noting that the pledge would formalize what has been America's unspoken policy for decades. But in the end, Mr. Obama seems to have sided with his current advisers, who warned in meetings culminating this summer that a no-first-use declaration would rattle allies like Japan and South Korea. Those nations are concerned about discussion of an American pullback from Asia prompted by comments made by the Republican presidential nominee, Donald J. Trump. Defense Secretary Ashton B. Carter and Secretary of State John Kerry also expressed concern that new moves by Russia and China, from the Baltic to the South China Sea, made it the wrong time to issue the declaration, according to senior aides in the Defense and State Departments. Secretary of Energy Ernest J. Moniz, whose department oversees the nuclear arsenal, joined in the objections, administration officials confirmed.

The New York Times interviewed more than a half-dozen administration officials involved in or briefed on the nuclear debate. All insisted on anonymity to describe internal administration deliberations on nuclear strategy. The United States dropped nuclear bombs on Hiroshima and Nagasaki in Japan at the end of World War II in 1945 — the only example in history of a first use, or any use, of nuclear weapons in warfare. Almost every president since Harry S. Truman has made it clear that nuclear weapons would be used only as a last resort, so the pledge would have largely ratified unwritten policy.

Administration officials confirmed that the question of changing the policy on first use had come up repeatedly this summer as a way for Mr. Obama to show that his commitment to reducing the role of nuclear weapons in American strategy — and thus the risk of nuclear exchanges — was more than rhetorical. But the arguments in front of the president himself were relatively brief, officials said, apparently because so many senior aides objected. Mr. Carter argued that President Vladimir V. Putin of Russia and Kim Jong-un, the North Korean leader, could interpret a promise of no first use as a sign of American weakness, even though that was not the intent.

The defense secretary's position was supported by Mr. Kerry and Mr. Moniz, two architects of the Iran nuclear deal, who cautioned that such a declaration could unnerve American allies already fearful that America's nuclear umbrella cannot be relied upon. Mr. Trump talked explicitly in interviews about withdrawing military forces from Asia unless Tokyo and Seoul paid more for their presence, and said in March that he was willing to see them build their own nuclear arsenals rather than depend on Washington. According to one senior administration official, Mr. Kerry told Mr. Obama that a no-first-use pledge would also weaken the nuclear deterrent while Russia is running practice bombing runs over Europe and

China is expanding its reach in the South China Sea.

Mr. Obama and his national security team have rejected a second option: "de-alerting" nuclear missiles ready to fire on short notice. The fear is that in a crisis, "re-alerting" the weapons could escalate a conflict. Earlier, Mr. Obama and his aides also decided against eliminating one element of the "triad" of land-, air- and submarine-launched weapons. The idea was to remove the missiles based in silos across the American West, which are considered outdated and vulnerable to a first strike. But the Pentagon argued strongly that the ground-based missiles were the part of the system with which they had the most assured communications, and that it was too risky to get rid of them. In the past year, arms control advocates, including some of Mr. Obama's former aides, have argued that Mr. Obama still has time to repair his reputation as an atomic visionary.

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...Mr. Obama made the eventual elimination of nuclear arms a centerpiece of his 2008 presidential campaign. In contrast, Hillary Clinton, the Democratic nominee, has said little this year about her nuclear plans, and Mr. Trump has argued for a major military buildup. Once Mr. Obama took office, his ambitions were frustrated. While he achieved a major arms control treaty, New Start, in 2010 — driven through the Senate by Mr. Kerry — it came at a price: He won Republican votes by agreeing to a sweeping plan to modernize the American nuclear arsenal and build a new generation of weapon carriers, including bombers, missiles and submarines. In 2013, some of Mr. Obama's former national security officials criticized the plan, saying his original vision was in danger of being turned on its head. The doubters included Philip E. Coyle III and Steve Fetter, who had recently left White House posts. One study estimated the modernization cost at $1 trillion over three decades.

We must have the courage to escape the logic of fear," he said at the Hiroshima Peace Memorial. "We may not realize this goal in my lifetime. But persistent effort can roll back the possibility of catastrophe.

The Federation of American Scientists, a private group in Washington, released an analysis showing that Mr. Obama had dismantled fewer nuclear warheads than any other post-Cold War president. Inside the White House, Mr. Obama asked for new ideas to advance his agenda before leaving office. In May, he went to Hiroshima — the first American president to do so — and reaffirmed his vision of a nonnuclear world. "We must have the courage to escape the logic of fear," he said at the Hiroshima Peace Memorial. "We may not realize this goal in my lifetime. But persistent effort can roll back the possibility of catastrophe."

Ten days later, Benjamin J. Rhodes, a deputy national security adviser, outlined possible efforts in a speech to the Arms Control Association, a private group in Washington. His list included putting more nuclear material under tight security, reaffirming a global ban on nuclear testing and revisiting the administration's plans to modernize the nuclear arsenal. It was an agenda sure to please his audience, but one that would largely fall to the next administration to execute. The president, Mr. Rhodes said, "will continue to review these plans as he considers how to hand the baton off to his successor." That review included the no-first-use pledge.

Behind the scenes, Mr. Carter argued that a ban on first use would be unwise. If North Korea used biological weapons against the South, he and other Pentagon officials said, the US might need the option of threatening a nuclear response. Mr.

Kerry argued that Japan would be unnerved by any diminution of the American nuclear umbrella, and perhaps be tempted to obtain their own weapons. The same argument, he said, applied to South Korea. Mr. Kerry and Mr. Carter have not taken public positions in large part because they do not want to appear to influence Mr. Obama as he makes a decision. Had Mr. Obama issued the no-first-use declaration, officials conceded, the next president could have rejected it. In an interview this year, Mr. Trump bristled at the idea, saying he would never want to weaken America's leverage. Mrs. Clinton has not spoken on the issue during her campaign. But a no-first-use policy would have been hard for either to undo. Military experts say the next president would hesitate to reverse such a decision since the quick reversal would confuse allies and possibly fray important coalitions.

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Source: http://www.nytimes.com/, 05 September 2016.

BALLISTIC MISSILE DEFENCE

RUSSIA

Sarmat ICBM: 8 Megatons at Hypersonic Speeds, Arriving 2 Years Ahead of Schedule

On 06 September 2016, a defense industry official told Russian media that the mass production of the RS-28 Sarmat ICBM, a new multi-warhead, super-heavy missile designed to defeat anti-missile systems, would begin in 2018, two years ahead of schedule. Defense analyst Vladimir Tuchkov explains what made this possible. The Sarmat, being developed by the Makeyev Rocket Design Bureau in the city of Miass, just east of the Ural Mountains, will replace the RS-36, a family of ICBMs and space launch vehicles that entered service in the 1970s and 1980s. Featuring a large payload capacity, the heavy missile is expected to carry up to 10 heavy warheads, or 16 lighter ones, or a combination of warheads and countermeasures meant at overwhelming enemy missile defenses.

Most concerning to foreign defense observers is the prospect of the Sarmat being armed with Project 4202, a hypersonic glider which, after separating from its ICBM launch vehicle, will be able to accelerate to speeds between Mach 7 and Mach 12, acting like a hypersonic cruise missile, and capable of maneuvering to overcome any existing or prospective missile defense to reach its target… .

The mass production of the RS-28 Sarmat ICBM, a new multi-warhead, super-heavy missile designed to defeat anti-missile systems, would begin in 2018, two years ahead of schedule the Sarmat, being developed by the Makeyev Rocket Design Bureau in the city of Miass will replace the RS-36, a family of ICBMs and space launch vehicles that entered service in the 1970s and 1980s.

If nothing else, Moscow hopes that the new missile and its payload will deter US efforts to gain strategic superiority over Moscow, or, in the worst case scenario, to launch a surprise attack on Russia. Russia's Strategic Missile Forces initially expected the arrival of the first parties of the new missile by 2020, in accordance with the state's defense program to the year 2020. But … a source within the Russian military industrial complex told Russian media that "the first Sarmats will be introduced to the Strategic Missile Forces no later than 2019, and most likely – in 2018."

…More precisely, Russia has developed the technical capability to create a new ICBM with even better characteristics, to convincingly demonstrate the untenability of the potential opponent's missile defenses, both existing and future ones." Russia's Sarmat ICBM a Decade Behind Schedule. And Russia has another

important reason for developing a new ICBM, the analyst wrote. This has to do with the fact that the R-36 series of missiles were originally developed in Dnepropetrovsk, Ukraine at the Yuzhnoe Design Bureau. "Now, when ties with Ukraine have been completely severed, it's necessary to get rid of any leftover dependency on Ukraine's military-industrial complex for the supply of spare parts and servicing." As for the Makeyev Rocket Design Bureau, charged with the development of the Sarmat, Tuchkov recalled that their engineers are already known for the creation of topnotch missiles for Russia's fleet of strategic submarines. "In this area their achievements have been impressive."

The US Air Force's program to develop and field a new ICBM to replace the aging Minuteman III in the nuclear arsenal is now projected to cost at least $85 billion, about 36 percent more than a preliminary estimate by the service. Even the $85 billion calculated by the Pentagon's Cost Assessment and Program Evaluation office is a placeholder number that's at the low end of potential costs.

"...There is nothing paradoxical about the Sarmat being made specifically [by engineers at Makeyev]," the analyst noted. "Firstly, they have accumulated a vast amount of experience in the creation of liquid-propelled rockets, which have better power characteristics than solid-fueled systems. And the Sarmat, in order to surpass the combat characteristics of the Voyevoda, was developed as a liquid-fueled missile." "Secondly, the design bureau has experience with ground-based missile systems, too. Among them, for example, is the R-17 missile, NATO classification Scud." Ultimately, Tuchkov noted, "the constructors at the Makeyev Rocket Design Bureau went their own way. In other words, they did not decide to simply create an upgrade of the Voyevoda (even though such opportunities existed) but created an entirely new missile....The result was a missile which is superior to the Voyevoda in all respects."

...An increase in power is also expected via the use of an upper-stage booster in the final stage." That, Tuchkov explained, makes it possible to use the missile for civilian purposes – as a rocket carrying satellites into orbit. In their military role, the Sarmats will be protected in the same types of underground bunkers that presently house the Voyevodas. These bunkers, the analyst recalled, "can withstand nuclear explosions nearby, using special damping containers," to withstand immense seismic activity. "The defense of the bunkers will be intensified by the Mozyr active protection system, developed especially for the Sarmat. This features 100 artillery pieces, aimed to fire at any cruise missile or missile warheads, forming a cloud of projectiles up to 6 km. This system is serviced by radar featuring long-distance detection and enhanced accuracy capabilities. In addition, it is assumed that areas where Sarmats are based will be defended by the S-500," Russia's next generation surface-to-air missile system, entering the final stages of development.

Source: https://sputniknews.com/, 07 September 2016.

USA

America's New Nuclear-Armed Missile Could Cost $85 Billion

The US Air Force's program to develop and field a new ICBM to replace the aging Minuteman III in the nuclear arsenal is now projected to cost at least $85 billion, about 36 percent more than a preliminary estimate by the service. Even the $85 billion calculated by the Pentagon's Cost Assessment and Program Evaluation office is a placeholder number that's at the low end of potential costs, according to an Aug. 23 memo from Pentagon weapons buyer Frank Kendall to Air Force Secretary Deborah James. It includes $22.6 billion for research and development, $61.5 billion for procurement and $718 million for related military construction.

Lockheed Martin Corp., Boeing Co. and Northrop Grumman Corp. are all competing to build the new ICBMs. But the latest estimate may add to debate

about the cost and need for the planned modernization of all three legs of the US nuclear triad of land, air and sea weapons. The nuclear modernization plan contributes to what defense analysts call a gathering "bow wave" of spending in the coming decade on major weapons that the next presidents will face. At this stage of the ICBM program "there is significant uncertainty about program costs" because "the historical data is limited and there has been a long gap since the last" such development program, Kendall wrote. The $85 billion estimate must be revised no later than March 2018 once missile designs are more advanced, technical risks are reduced and the service has a better understanding of overall costs, Kendall said in the memo.

Nonetheless, Kendall approved proceeding with early development and efforts to reduce technology risks of the new ICBM. He directed the service to move toward buying 642 missiles at an average cost of $66.4 million each to support a deployed force of 400 weapons and to budget at least $1.25 billion annually from 2036 to 2040 for operations and support costs. The Pentagon's ability to estimate the cost of the new Ground Based Strategic Deterrent was limited by the "incompleteness and significant age of" the "data for comparable ICBM and submarine launched ballistic missiles dating back to the 1960s through the early 1990s," Kendall wrote.

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'Greater Risk'*:* The Pentagon and Air Force are "accepting greater risk by going with" the $85 billion estimate that's at the lower end of its calculations, Kingston Reif, an analyst with the Arms Control Association in Washington who follows the program, said in an e-mail. ... In addition to the new nuclear systems, the bow wave of coming costs includes nine Air Force conventional systems and plans for increased construction of naval vessels such as a second Ford-class aircraft carrier. For the air component of the nuclear triad, Northrop defeated a Lockheed-Boeing team in October for the right to build a new dual-use bomber that can carry both nuclear and conventional weapons, a project valued at as much as $80 billion. At sea, the Navy is planning to replace its Ohio-class nuclear-armed submarines through a production program now estimated at $122 billion, which doesn't include development.

That estimate will be updated by year's end as the Pentagon reviews moving the program into full development. Kendall's decision to let the ICBM program move forward marks the official beginning of the technology development stage, with spending increasing from about $75 million this year to $1.6 billion in 2021 and $2.6 billion in 2022, according to the Pentagon estimate. The "program plans to buy enough missiles to maintain a 400-missile deployed force through 2075," Air Force spokeswoman Leah Bryant said in an e-mail. "The overall number of missiles acquired in the inventory may vary depending on testing, evaluation, maintenance," she said.

The Air Force made its early estimate last year that the new ICBM program would cost $62.3 billion for research, development and production as well as command and control systems and infrastructure. That number, as well as the new $85 billion estimate, is calculated in so-called "then-year," or current-year, dollars. Bryant said "it is important to keep in mind that at this stage," as "in any acquisition program, there can still be some uncertainty about projected" ICBM costs because "the historical data used for estimates, whether ours or another organization's estimate, are limited and very dated." The last ICBM development occurred in the 1980s, she said. Kendall's memo was provided to the staff of the Senate and House defense committees.

Source: http://www.bloomberg.com/, 06 September 2016.

NUCLEAR ENERGY

CHINA

Construction Starts on Sixth Tianwan Unit

The first safety concrete has been poured for the containment building basemat of Tianwan nuclear power plant's sixth reactor, in Jiangsu province, marking the official start of the unit's construction. ...Construction of Tianwan Phase III - units 5 and 6 - was originally scheduled to start in early 2011. However, following the March 2011 accident at Japan's Fukushima Daiichi plant, the Chinese government suspended the approval of new nuclear power projects, including those two units.

The latest Five-Year Plan calls for construction of Phase III of the Tianwan plant to be accelerated. The State Council gave its approval for Tianwan units 5 and 6 - both featuring 1080 MWe ACPR1000 reactors - on 16 December 2015. First safety-related concrete was poured for unit 5 on 27 December. Unit 5 is expected to enter commercial operation in December 2020 and unit 6 in October 2021.

Despite construction of unit 5 having already started, a contract for the civil construction of the nuclear islands of Phase III of the Tianwan plant was signed between CNNC and China Nuclear Industry Huaxing Construction (part of China Nuclear Engineering Corporation) in June. ...

Source: World Nuclear News, 07 September 2016.

INDIA

India Powers Past 6,000MW Mark in Nuclear Energy

With synchronization of the second unit of the Kudankulam power plant, India's civil nuclear programme has reached a couple of landmarks: the Kudankulam project turned a page on protests and a legal challenge over its safety parameters in the Supreme Court, and India crossed the 6,000MW mark in nuclear power.

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Once the output of Unit II is scaled up to a full 1,000MW in two months, India's 22 nuclear power reactors will be able to generate 6,780MW of power and the NPCIL expects four more reactors to be commissioned in a year. Unit II is functioning smoothly as scientists seem to have incorporated the right lessons from hitches that marred Unit I's functioning after attaining criticality in 2013.

The two 1,000MW nuclear units built with Russian assistance have made Tamil Nadu the highest consumer of nuclear power on a daily basis. Kudankulam I and II are also the last nuclear units in India built with foreign collaboration that will not attract the liability clause legislated after the India-US nuclear deal.

NPCIL engineers learnt bitter lessons while commissioning Unit I. The reactor has been in continuous operation only since February 2016. Protests in 2011-12 by anti-nuclear activists delayed the project by months when it was over 90% ready, but not much is known of the problems it faced later. The Unit I has been operating continuously for 189 days since February 22 and has generated 11,269 million units of electricity since October 2013.

But NPCIL did its homework and made changes to Unit II. ... In the near future — around six months to a year — two indigenous reactors each in Rajasthan and Kakrapar in Gujarat should be ready. "Beyond Kudankulam, Nuclear Power Corporation is hopeful of commissioning the four reactors in a year. These reactors are built by NPCIL engineers and each has a capacity of 700MW," Sundar said.

Not all of India's 22 nuclear reactors are functioning to full capacity. "A total of 14 reactors are under IAEA safeguards. Only these reactors are eligible to use imported nuclear fuel and are currently operational. The plant load factor (PLF)

of these reactors is around 90%," a former Atomic Energy Commission chief said.

The PLF of reactors using indigenous fuel is less. For example, the PLF of two units of 220MW capacity in Kalpakkam is around 65-70% as there is a shortage of nuclear fuel in the country. "As we synchronized Unit-2 with the grid on August 29, the total nuclear power generation in the country on that day was 5100MW. This is a new high for nuclear power generation. As on date, Unit-2 is generating 270MW and we will be scaling up the generation in the coming days," said Sundar.

Source: Article by Sivakumar, The Times of India, 01 September 2016.

NUCLEAR COOPERATION

CANADA–INDIA

Canada Hopes to Supply More Uranium

Canada was hopeful of reaching agreement to supply energy-hungry and fast-growing India with more uranium than the 3,000 metric tonnes that has already been agreed upon, Canadian Natural Resources Minister Jim Carr said…. "So long as [bilateral] negotiations continue and Canada can supply enough to meet India's needs, there is every good reason to be optimistic" about Canada supplying more than 3,000 metric tonnes of uranium to fuel India's nuclear power plants, Mr. Carr told reporters.

In April last year, during PM Narendra Modi's visit to Canada, a pact was inked for Canada's Cameco to supply India 3,000 metric tonnes of uranium over five years at an estimated cost of $254 million….Mr. Carr is leading a high-level business delegation, which is visiting India from September 7-9. The delegation — which will visit New Delhi and Mumbai — includes representatives of leading Canadian technology and natural resource firms, according to the Canadian High Commission. In New Delhi, Mr. Carr will participate in the Canada-India Energy Dialogue with Minister of State (Independent Charge), Ministry of Petroleum and Natural Gas, Dharmendra Pradhan. Mr. Carr — who will be meeting high-level government officials and representatives of Indian business in New Delhi and Mumbai — will lay emphasis on Canada's renewed commitment to innovation and clean technology, notably through Mission Innovation, the High Commission said. Canada and India are among the 21 Mission Innovation partners who have committed to doubling government investments in clean technology research and development and stimulating private sector investment in clean technology over the next five years, it added….

Source: http://www.thehindu.com/, 07 September 2016.

INDIA–NAMIBIA

Namibia Prepares for Nuclear Talks with India

[Recently] Namibia's information minister announced that nuclear energy discussions with India are imminent. According to Tjekero Tweya, the Cabinet made the decision to proceed with the nuclear discussions, following a 2009 agreement on the supply of uranium to be used on nuclear energy, which has not yet been implemented, China's News agency reported. According to media, the implementation of the agreement has been stalled due to India not being a signatory to the United Nations Nuclear Non-Proliferation Treaty.

Tweya noted that the agreement stipulates that Namibia will only export uranium to India for non-weapon use. In June this year, Indian President Pranab Mukherjee met Namibian President Hage Geingob, where Geingob assured that he would look into legal ways by which Namibia can supply uranium to India, News reported. "According to Tweya, the Cabinet asked the mines ministry to come up with suitable dates for convening a meeting with India's technical team on how to operationalise the agreement," News added.

According to media, it was during this visit that it was agreed that India will be responsible to deploy technical atomic energy experts to assist with any hurdles experienced with the uranium exports from Namibia. "The move to have Indian atomic

energy experts was necessitated by the fact that Namibia is a signatory to the African Union members that are against dealing with NPT signatories. Tweya did not say whether these experts were sent to Namibia," media reported.

Source: https://www.esi-africa.com, 12 September 2016.

INDIA–CHINA

India, China Hold Parleys on NSG

India and China held talks on issues of mutual interest in the area of disarmament and non-proliferation, including New Delhi's membership to the NSG. A Chinese delegation led by Director General Wang Qun of the Ministry of Foreign Affairs met with an Indian delegation led by Amandeep Singh Gill, Joint Secretary (Disarmament and International Security) in New Delhi, a statement issued by the MEA said.

The statement added that the discussions between the two were candid, pragmatic and substantive and the two sides agreed to meet for the next round on a mutually convenient date. The meeting was the follow up of the talks held and agreed by Minister of External Affairs Sushma Swaraj and her Chinese counterpart Wang Yi on August 13.

Source: Business Standard, 13 September 2016.

INDIA–PAKISTAN

Cooperation with India on Nuclear Safety, Security Possible, Says Foreign Secretary

The Pakistan government has hinted at the possibility of cooperation with India in the realm of nuclear safety, security and regulatory framework, foreign secretary Aizaz Chaudhry stated while speaking at a daylong international conference on 'Assessing South Asia's Nuclear Security'...."Nuclear safety and security provide another avenue for cooperation between India and Pakistan. Both sides can agree on sharing of best practices, experience and expertise," Aizaz stated at the conference, which was jointly organised by the Centre for International Strategic Studies (CISS) and Atlantic Council....

Pakistan and India have a working group on nuclear CBMs, one of which is cooperation in case of nuclear accidents. The working group has, however, lately been dysfunctional because of suspension of bilateral dialogue. The two countries are also part of other international conventions and instruments on nuclear safety and security.... Speaking about other possible nuclear CBMs with India, the secretary pointed out that Pakistan has extensive experience on the establishment and functioning of an independent nuclear regulatory body. India, it needs to be recalled, lacks an independent regulatory agency.

The Pakistan government has hinted at the possibility of cooperation with India in the realm of nuclear safety, security and regulatory framework, foreign secretary Aizaz Chaudhry stated both sides can agree on sharing of best practices, experience and expertise," Aizaz stated.

The foreign secretary further spoke about Pakistan's application for membership of NSG and recalled the merits and strengths of its case. He hoped that NSG members would uphold non-proliferation goals and objectives of strategic stability while considering membership cases....Talking about nuclearisation of Indian Ocean and its implication, nuclear expert Zahir Kazmi contended that the development would affect the security interests of all littoral states in addition to impacting regional and global security. He also flagged safety concerns arising out of India's naval nuclearisation. ...

Source: https://www.thenews.com.pk/, 07 September 2016.

SOUTH KOREA–KENYA

South Korea and Kenya Make a Deal to Partner on Nuclear Energy

Kenya aims to up its nuclear power capacity to 4,000 megawatts by 2033. State-run utility KEPCO agreed a deal on developing nuclear energy in Kenya, as the African nation looks to broaden its sources of electricity. The company and the Kenya Nuclear Electricity Board (KNEB) signed a memorandum of understanding to cooperate on the construction of nuclear projects and sharing

expertise, South Korea's energy ministry said in a statement.

East Africa's largest economy aims to add nuclear power with a total capacity of 4,000 megawatts by 2033, the ministry said. Blackouts are common in Kenya, partly because of an aging energy network and insufficient generation capacity. Many businesses in Nairobi and other big towns operate back-up generators.

South Korea, the world's fifth-biggest user of nuclear power, has developed its own nuclear industry, constructing and operating its reactors through KEPCO. A KEPCO-led consortium in 2009 won a contract to build four nuclear reactors in the United Arab Emirates, which are under construction.

Source: http://fortune.com/, 02 September 2016.

NUCLEAR PROLIFERATION

NORTH KOREA

North Korea Sends a Nuclear Note to the World

North Korea's fifth nuclear test, carried out...is a sign that the current international approach to the outlaw nation is not working and needs to get "smarter," not "tougher," some experts say. Nothing world powers are doing appears to be impeding North Korea's march to stronger, smaller nuclear weapons and the missiles capable of carrying them. [The September 9] test – North Korea's second nuclear test this year – followed a round of toughened sanctions imposed by the UNSC earlier this year, 2016.

Nothing world powers are doing appears to be impeding North Korea's march to stronger, smaller nuclear weapons and the missiles capable of carrying them. [The September 9] test – North Korea's second nuclear test this year – followed a round of toughened sanctions imposed by the UNSC earlier this year, 2016.

That suggests simply doubling down on more sanctions isn't enough. China will need to be brought in as a bigger part of the solution, and the international community might well have to consider the first direct talks with North Korea since six-party talks collapsed in 2009, says Jim Walsh, an expert on North Korea's nuclear program. "Sanctions by themselves aren't going to work, this year has proved that," says Dr. Walsh of the Massachusetts Institute of Technology's Security Studies Program. "It has to be sanctions married to a political strategy,"

A return to the negotiating table with Pyongyang realistically would not occur until after President Obama's successor settles into the White House, he adds. But there are things the United States can be doing now, and first among them is working more closely with China to slow North Korea's progress....China had already been embarrassed earlier when North Korea conducted missile tests as Hangzhou hosted the G20 summit.

The US should be encouraging China to shut down the growing number of channels between private Chinese companies and North Korean entities that have set up shop inside China, Walsh says...."This is an opportunity for everyone worried about these advances to get back on the same page," he says. "The US should take advantage of the moment."

Source: http://www.csmonitor.com/, 09 September 2016.

PAKISTAN

Pakistan Selling Nuclear Materials to North Korea – CIA's Explosive Revelation; US Informs India

America's CIA has apprised India's RAW that Pakistan is supplying nuclear material to North Korea Pakistan has been sending nuclear materials to North Korea through sea route. PAEC supplied Monel and Enconel (nuclear substances) to Pyongyang notably, Islamabad was supplied such materials by Chinese company named Beijing Suntech Technology Company Limited.

America's CIA has apprised India's RAW that Pakistan is supplying nuclear material to North Korea. According to reports, Pakistan has been sending nuclear materials to North Korea through sea route. PAEC supplied Monel and Enconel (nuclear

substances) to Pyongyang in clear violation of UN sanctions. Notably, Islamabad was supplied such materials by Chinese company named Beijing Suntech Technology Company Limited. The supplies of the Chinese company to Pakistan were being diverted to North Korea by the Pakistani authorities through cargo ship, it claimed. Despite being involved in illegal sale of nuclear substances, Pakistan is urging the international community to accept its membership to the NSG, according to highly placed US sources who are involved with the tracking of nuclear commerce.

In another alarming revelation, informed sources claimed that Pakistan has been giving North Korea equipment which has a direct bearing on producing nuclear weapons. Sources said the Beijing Suntech Technology Company Limited manufactures Vacuum Induction Melting (VIM) furnaces which find application in refining hard metals such as uranium and plutonium, which are used in making nuclear warhead cores. Pakistan is known to have procured these items from China and has passed them along to North Korea.

Source: http://zeenews.india.com/, 06 September 2016.

NUCLEAR NON-PROLIFERATION

IRAN

Debate on Iran Sanctions Reignites

Lawmakers are plunging into another fight over Iran sanctions with economic restrictions on the country set to expire at the end of the year. Both parties acknowledge that there are enough votes in the House and Senate to renew the sanctions — but the agreement ends there. Outraged by President Obama's nuclear deal, Republicans are seeking to put new restrictions on Iran. And a few moderate Democrats appear willing to go along.

But the White House is in no mood to negotiate. It has said strengthening the sanctions law could be interpreted as going back on the nuclear deal, meaning the president would likely veto tougher legislation. The multinational agreement, finalized last summer, lifted some financial sanctions on Iran in exchange for limits to its nuclear program. In the Senate, where Sen. Bob Corker (R-Tenn.) is pushing stronger sanctions as chairman of the Foreign Relations Committee, the debate has gridlocked. "We're unfortunately at an impasse," said one senior Senate aide. "I don't know what will advance." In the House, which has been more critical of the nuclear deal than the Senate has, GOP leaders are likely to muscle through a stronger sanctions bill. Both parties staked out their positions on Iran sanctions in July, shortly before leaving for their summer recess.

Outraged by President Obama's nuclear deal, Republicans are seeking to put new restrictions on Iran. And a few moderate Democrats appear willing to go along but the White House is in no mood to negotiate. It has said strengthening the sanctions law could be interpreted as going back on the nuclear deal, meaning the president would likely veto tougher legislation.

The additional penalties would target officials involved in Iran's ballistic missile testing and the Islamic Revolutionary Guard Corps. The bill would also penalize Tehran for aggressive activities in cyberspace and bar the White House from being able to waive those sanctions, among other things.

Corker and four colleagues — including Democrats Bob Menendez (N.J.) and Joe Manchin (W.Va.), who both opposed the nuclear deal — rolled out legislation that would renew the Iran Sanctions Act (ISA) while also adding new sanctions. The additional penalties would target officials involved in Iran's ballistic missile testing and the Islamic Revolutionary Guard Corps. The bill would also penalize Tehran for aggressive activities in cyberspace and bar the White House from being able to waive those sanctions, among other things. Two days after that bill was unveiled, Democrats led by Sens. Ben Cardin (Md.), Charles

Schumer (N.Y.) and Dick Durbin (Ill.) released an alternative that would renew the sanctions law for 10 years without changes.

The law is especially important to Menendez, who was the top Democrat on the Foreign Affairs Committee before stepping down from the post following an indictment on corruption charges last April 2015 "Sen. Menendez has conducted numerous meetings with colleagues, consulting with them on the bill throughout the long, careful drafting process and incorporating provisions to address their concerns in this bipartisan proposal," spokesman Juan Pachon said in a statement to The Hill. "That effort will continue with urgency when Congress returns to Washington for the short time remaining in the 2016 legislative calendar."

So far, the talks about a bipartisan deal have been fruitless. The sticking point has been a push from advocates of tougher sanctions to bar the White House from using national security waivers to ease sanctions in the future....

...Lawmakers looking to get tough on Iran have gained ammunition in recent months. The administration recently acknowledged that a covert payment to Iran — millions of dollars shipped on wooden pallets — was held back until five American prisoners in Iran were released. Republicans have denounced the payment as a ransom. Iran has test-fired two ballistic missiles in the months since the nuclear accord went into full effect while maintaining an aggressive posture toward Saudi Arabia and other regional rivals. And at least two other Iranian-Americans — Siamak Namazi and his elderly father, Baquer — remain imprisoned in the country under mysterious circumstances.But despite those controversies, Corker's bill has just five co-sponsors, and most Democrats are unwilling to back it. Unless that changes, the bill may be dead.

Senate Majority Leader Mitch McConnell (R-Ky.) has previously said that he won't allow legislation to come up for a vote unless it can muster the 67 votes to override an Obama veto. Spokespeople for the top Republican declined to offer additional comment.Corker "will continue to build support" for the bill this fall, an aide said, without giving additional details. The 10-year extension proposed by Democrats would likely pass the Senate, but it would be a tough vote for Republicans who have urged the president to take a harder line with Iran....Though both supporters and opponents of the nuclear deal want to renew the sanctions, some pro-deal advocates argue that the extension could deepen Iran's doubts about whether the US will hold up its end of the bargain.

... Groups that support the nuclear deal are backing another Democratic offering, proposed by Sens. Tim Kaine (Va.) and Chris Murphy (Conn.), that would extend the sanctions until the president can guarantee that Iran's nuclear material is only for peaceful purposes....The sanctions act doesn't expire until the end of the year, so most observers don't expect movement on legislation until after the November elections. The White House has encouraged Capitol Hill to take its time with the bill, apparently in an attempt to push the fight back as far as possible.... But Corker is under the gun. If Democrats regain the majority, the onetime candidate to be Republican presidential nominee Donald Trump's running mate would lose his chairmanship, making the Iran sanctions legislation his last major act with the gavel.

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Source: http://thehill.com/, 06 September 2016.

NUCLEAR SAFETY

USA

Weapons-Grade Nuclear Waste Shipments to US Prompt Outcry

Weapons-grade nuclear waste from a federal lab in Chalk River, Ont., is to be transported to South Carolina. The facility makes medical isotopes and used to be run by Atomic Energy of Canada Ltd. but is now operated by a private consortium. A

highly secretive plan to ship weapons-grade nuclear waste from a federal lab northwest of Ottawa to the United States is drawing ire in some of the southern Ontario and American communities along the potential route. Radioactive waste from the former Atomic Energy of Canada Ltd. laboratory in Chalk River, Ont., a major but dwindling world supplier of medical isotopes that is now run by a private consortium, is set to be transported in liquid form to a site in Savannah River, S.C., for processing and disposal.

The route could take it through Ontario's fruit-rich Niagara Region, or possibly even through the border crossing at Sault Ste. Marie, Ont., into Michigan, according to a lawsuit trying to stop the shipments. The lawsuit was filed in a US federal court last month by a coalition of American environmental and nuclear watchdog groups.

...The shipments could begin as early as this month, the US groups believe. ... The plan is for about 150 shipments by truck to South Carolina, a minimum distance of nearly 1,700 kilometres from Chalk River, which is 180 km northwest of Ottawa. Each shipment would carry four 58-litre steel containers placed inside a larger steel and lead tube, carrying liquid radioactive waste including isotopes of cesium, iodine, strontium and plutonium, according to the US lawsuit. The waste would also contain a modest but dangerous quantity of highly enriched uranium, which can be used to make a nuclear bomb, the lawsuit states. The waste is a byproduct of making molybdenum-99, a medical isotope used in diagnostic tests of organs and other body parts. The Niagara area's regional government passed a motion last year opposing the shipments.

Peace Bridge: The Peace Bridge between Fort Erie, Ont., and Buffalo, N.Y., is considered a leading potential route the nuclear waste would take on its way to the US South. ... One problem raised by opponents is that, for security reasons, the route through Canada and the timetable for shipments are being kept under tight secrecy — so secret that local emergency responders haven't been kept in the loop. "There would be no notice given, but of course it would be our first responders, my friends, my neighbours, working in our volunteer force and in our emergency services, that would be exposed... in case there was an accident," Hodgson said, adding that even his local fire chief only found out through the media.

The Canadian Nuclear Safety Commission, the federal nuclear safety regulator, approved the steel tube design last year for transporting the nuclear waste, but full environmental assessments have not been conducted in either Canada or the US, opponents complain. Natural Resources Canada did not return a request for comment, but the nuclear safety commission concluded in its report last year that an accident involving the nuclear waste shipments would be "extremely unlikely." Even in such a scenario, the commission said, its own analysis and that of the US Department of Energy are that "the doses to the most exposed individuals remain low and well below the emergency regulatory dose limit for nuclear energy workers and the public."

One problem raised by opponents is that, for security reasons, the route through Canada and the timetable for shipments are being kept under tight secrecy — so secret that local emergency responders haven't been kept in the loop.

Source: http://www.cbc.ca/, 05 September 2016.

Photos Show Nuclear Facilities in Dangerous Disrepair

US nuclear security facilities are dangerously decrepit and putting national security goals at risk, according to nuclear officials who are asking Congress to back the administration's push to modernize the system. Nuclear officials described critical utility, safety and support systems that are failing at an increasing and unpredictable rate, as well as their efforts to patch the system together until the necessary funding can be found to reinvigorate the system.

"Safe, reliable and modern infrastructure at the National Nuclear Security Administration's national laboratories and production plants is

absolutely essential to the accomplishment of our vital national security missions," NNSA Administrator Lt. Gen. Frank Klotz told the House Subcommittee on Strategic Forces, according to his prepared remarks.

Committee members called Klotz and other officials to discuss the growing backlog of work needed at the country's nuclear facilities, which include iconic places such as the Los Alamos National Laboratory. At the end of fiscal year 2015, the total cost of deferred maintenance across all NNSA property stood at $3.7 billion, Klotz said....

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The physical state of the US nuclear complex is in such bad shape because many key facilities were built during World War II and intended to operate for as little as one decade, according to Morgan Smith, president and CEO of Consolidated Nuclear Security. Today, more than half of NNSA's approximately 6,000 real property assets are over 40 years old, and nearly 30% date back to the Manhattan Project era, Klotz said. "Many facilities and their supporting infrastructure have exceeded or far exceeded their expected life," Smith told the committee, according to prepared remarks, "and major systems within the facilities are beginning to fail."

...Energy Secretary Ernest Moniz has pushed to stop the growth of deferred maintenance across the nuclear security enterprise, Smith told lawmakers, "but significant investment is required to appreciably reduce that backlog and sustain safe operations for the extended life of these vital mission facilities." In December 2015, Moniz wrote to the Office of Management and Budget to say that their proposed nuclear budget for fiscal years 2018 to 2021 "doesn't reflect the funding that we estimate is necessary." He asked for an additional $5.2 billion for that time period, saying that the OMB proposal "ignores or underfunds" nuclear needs...

...Smith's Consolidated Nuclear Security manages and operates the Y-12 National Security Complex in Oak Ridge, Tennessee, and the Pantex Plant in Amarillo, Texas. Y-12, originally established in the 1940s as part of three Manhattan Project sites where the nuclear bomb was first developed, is now the country's primary storehouse of highly enriched uranium and the place where highly enriched uranium components are manufactured, dismantled and tracked.

The Pantex Plant in Amarillo, Texas, the only plant in the nation where nuclear weapons are assembled and disassembled, was built in the1950s. Smith shared descriptions of some Y-12 buildings in his written testimony that mentioned leaking roofs, "large patches of rust and corrosion on interior walls," and other examples of "neglect and deterioration." The aging systems can also affect production and safety, Smith said. He gave, as one example, a production shutdown at Y-12 because of unplanned outages to humidity control equipment. "The primary concern with knowingly deferring maintenance is that a major, unforeseen failure could occur," Smith said. ...

Source: http://edition.cnn.com/, 07 September 2016.

NUCLEAR WASTE MANAGEMENT

CANADA–FINLAND–SWEDEN

Greenland Ice Sheet Project Contributes to Repository Safety

Newly published findings from a five-year international project to study conditions at the surface and below the Greenland Ice Sheet will be used in evaluations of the future safety of deep geological repositories over time frames of up to a million years. The Greenland Analogue Project

(GAP) has been carried out by the nuclear waste management organizations of Canada, Finland and Sweden. All three countries have experienced multiple ice ages over the last million years - with one occurring every 100,000 years on average - so an understanding of ice sheet conditions is vital in planning for the long-term management of a deep geological repository for used nuclear fuel.

The GAP ran from 2008 to 2013 as a collaborative research project of Canada's Nuclear Waste Management Organizations (NWMO), Finland's Posiva and Sweden's Svensk Kärnbränslehantering AB (SKB), bringing together specialists, research scientists and engineers from six countries. It focused on increasing understanding of how an ice sheet reacts with areas both above and below ground. The Greenland Ice Sheet, on which the studies were conducted, is the second largest in the world and is comparable to ice sheets predicted to extend over both Scandinavia and Canada in future ice ages.

The studies involved direct and indirect observations of ice sheet movement, melt water runoff, water pressure due to the weight of the sheet, and water transfer from the ice sheet to areas below the ice surface. Boreholes were drilled through the ice sheet to the point of contact with the underlying rock to measure the underground pressure exerted by the ice sheet. A borehole was also drilled at the edge of the sheet at a depth approximating repository conditions to enable hydraulic and chemical monitoring to be carried out. Weather stations monitored climate conditions.

...The findings from GAP will be used in comprehensive, detailed studies used to evaluate the safety of deep geological repositories over long time-frames. Liljedahl also said the findings, which had increased the available data on the processes in and under an ice sheet, would be of ongoing value for glaciaologists and climate scientists. Further data gathered from ongoing monitoring of the borehole and from the weather stations will help broaden knowledge of the conditions and processes under the ice, she said.

SKB's application for an integrated system for the final disposal of used nuclear fuel and radioactive waste received approval from the country's Radiation Safety Authority earlier this year. Posiva last year received a licence from the Finnish government to construct an encapsulation plant and final repository for used fuel at Olkiluoto, while the NWMO is conducting a phased process to identify a site for a deep repository for Canada's used nuclear fuel.

Source: World Nuclear News, 08 September 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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