



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

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STATEMENT – Dr Sekhar Basu, Chairman, Atomic Energy Commission

India’s National Statement at 60th GC of IAEA 2016

... Congratulations to all the Members of IAEA on the historic occasion of this 60th year of IAEA’s founding. The journey of these 60 years has amply proved the utility of IAEA and its commendable global contributions to peaceful uses of atomic energy for the benefit of humanity. As a founding member of the IAEA, this is of great satisfaction and pride for India....

The DAE of India and the IAEA have grown together and share a glorious history. India’s abiding interest in nuclear energy grew out of a deep conviction that the power of atom can be harnessed to help the country achieve human and societal development. That vision, espoused by Dr. Bhabha, the founder of India’s atomic energy programme, also shaped the evolution of IAEA.... when the choice of IAEA’s headquarters came to a tie between Geneva and Vienna, it was Dr. Bhabha’s decisive vote as the Chair of the body entrusted with selection of headquarters, that finally made Vienna the home of IAEA....

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India has consciously made a strategic choice to pursue a low-carbon growth model in the coming decades. As announced by PM Modi, our Intended Nationally Determined Contribution announced at COP-21 in Paris late last year Accordingly, a comprehensive plan, spanning next 15 to 20 years, is being prepared to augment the investment in the nation’s nuclear power generation.

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decades. As announced by PM Modi, our Intended Nationally Determined Contribution announced at COP-21 in Paris late last year will

be ratified on October 2nd, the birth anniversary of Mahatma Gandhi. Accordingly, a comprehensive plan, spanning next 15 to 20 years, is being prepared to augment the investment in the nation’s nuclear power generation. The addition of Kudankulam-2 plant to our national grid last month has increased our installed nuclear power capacity by

another 1000 MWe. Our plants continue to work at high capacity factor. Today, nine more reactors, at various stages of implementation, will add additional 6700 MWe capacity in the next

6 to 7 years. We are also planning the construction of a number of additional PHWRs of 700 MWe capacity. Our on-going engagement with Russia, US and France will continue with a view to bring large capacity additions of nuclear power in India. Finalisation of these projects is being pursued in earnest, with due attention to cost, technology and safety.

In another notable development for our nuclear power programme, India ratified the IAEA's Convention on Supplementary Compensation (CSC) earlier this year. Along with the ratification of CSC, we have also operationalised the India Nuclear Insurance Pool with the launch of both the Operator's and the Suppliers' Policy. These steps have now addressed all issues related to civil nuclear liability in India.

India's international civil nuclear cooperation in the last one year included conclusion of Inter-Governmental Agreements on the peaceful uses of nuclear energy with the UK and Australia. India attaches utmost importance to strengthening all aspects of nuclear safety measures. The safety performance of the Indian Nuclear Power Plants continues to remain satisfactory. Even in the event at Kakrapar following a coolant channel failure earlier this year, the safety systems worked to the utmost perfection as per the design intent and there was no exposure to operators or members of public. Overall, the occupational exposures and the radioactivity releases from the nuclear power plants remained well within the limits specified by our AERB. It is a reflection of our commitment to the highest standards of maintenance that the TAPS Unit-2, which has been in operation since 1969, has been given regulatory clearance for continued operation. In conformance with the obligations under the Convention of Nuclear Safety, India has submitted National Report for the Peer Review at the upcoming 7th review meeting of the Convention. India is committed to actively participate in the 7th Review

Production at Tumallapalle Mill in Andhra Pradesh has also stabilised after the initial teething problems. Last year, we set a record by producing 1500 tonnes of PHWR fuel at our Nuclear Fuel Complex in Hyderabad. Our Heavy Water Plants have worked at 115% capacity factor. In addition to meeting our domestic requirements, we are trying our best to meet requests from many partner countries for export of Heavy Water.

Meeting of the Convention during March / April 2017. India greatly values its association with the International Project on Innovative Nuclear Reactors and Fuel Cycles (INPRO) and makes regular contributions to it.

The performance of several Indian fuel cycle facilities continues to reach higher levels every year. To augment our domestic Uranium production, we have initiated steps to develop new mining sites. Production at Tumallapalle Mill in Andhra Pradesh has also stabilised after the initial teething problems. Last year, we set a record by producing 1500 tonnes of PHWR fuel at our Nuclear Fuel Complex in Hyderabad. Our Heavy Water Plants have worked at 115% capacity factor. In addition to meeting our domestic requirements, we are trying our best to meet requests from many partner countries for export of Heavy Water.

Our reprocessing, waste management and fuel fabrication facilities dedicated to our second stage power programme continued performing very well. Performance of our research reactors has also

been most satisfactory. FBTR at Kalpakkam has been operated at its highest ever power. Also, as part of technology development for metallic fuel based fast breeder reactors, irradiation of metallic fuel has commenced. At the 500 MWe Prototype Fast Breeder Reactor at Kalpakkam, preheating activities prior to sodium

loading is in progress. Commissioning activities are being pursued under rigorous regulatory oversight. Our DHRUVA reactor at Trombay, producing medical isotopes, continues to operate at full power and recently touched its highest ever capacity factor. India continues to attach high priority to all aspects of Thorium related reactor technologies and allied fuel cycle. Work on all aspects is being undertaken at various Units of the DAE.

Our INDUS-I and II synchrotron radiation sources at Raja Ramanna Centre for Advanced Technology at Indore continued to perform well and utilise fully

all its beamlines. Our TIFR has discovered superconductivity in pure Bismuth at 500 micro Kelvin. TIFR has also developed 3 out of 5 major instruments being used at ASTROSAT, the first Indian Satellite dedicated to astronomy. India is participating in several national and international Mega Science projects like CERN, ITER, Facility for Antiproton and Ion Research (FAIR), Square Kilometre Array (SKA), Thirty Meter Telescope (TMT), Laser Interferometric Gravitational-waves Observatories (LIGO), and Indian Institutions and Fermilab Collaboration (IIFC). The MACE telescope being built at Laddkah in northern India will become operational next year.

DG Amano spoke of IAEA's focus on global cancer treatment. This is also our focus. DAE, through its Tata Memorial Centre continues to promote indigenous development of radiotherapy equipment and support IAEA Member States by offering low cost radiotherapy treatment to developing countries. Most recently, in July 2016, India presented its indigenous teletherapy machine Bhabhatron, along with digital simulator, to Bougando Medical Centre in Tanzania. We are also going to soon install Bhabhatron at the Kenyatta National Hospital in Kenya. This follows similar contribution made to the National Cancer Centre of Mongolia in 2015. After the successful launch of the Cancer Staging App during last year's General Conference, another smart-phone app developed by IAEA in collaboration with the Tata Memorial Centre and the All India Institute of Medical Sciences for "Cancer Staging for Gynaecological Cancer" was launched at the Vienna Centre. In line with this year's Scientific Forum on Nuclear Technology for Sustainable Development Goals, we have put up a stall to showcase India's contributions to all the themes of the Forum....

India has continued active engagement on nuclear security issues through participation in the Nuclear Security Summit process, the Global Initiative to Combating Nuclear Terrorism, and through the

activities of India's own Global Centre for Nuclear Energy Partnership. India believes that IAEA is the right global platform to discuss nuclear security issues. As part of India's continuing contributions to IAEA's nuclear security work, we are making a contribution of one million dollar to the IAEA's Nuclear Security Fund this year. This follows a similar contribution made by India in 2013. India looks forward to participating and contributing to IAEA's International Ministerial Conference on Nuclear Security in December this year. We also congratulate the IAEA and the global community on entry into force of the 2005 amendment to the CPPNM, the all-important legally binding convention on nuclear security. India was among the countries that ratified the 2005 amendment soon after it came into existence. As part of its

commitment to global efforts to combat nuclear terrorism, India will host a meeting of the Implementation and Assessment Group of the GICNT in New Delhi in February 2017.

The global energy demands will continue to grow, and in order to ensure sustainable low-carbon

energy generation, nuclear power is likely to remain a credible option and an important component of future growth strategy of many countries. In this scenario, India looks forward to IAEA's continued leadership for fostering safe, secure and sustainable use of nuclear energy in the decades to come....

Source: Excerpted speech of Chairman, Atomic Energy Commission, at the 60th General Conference of IAEA, Vienna, 28 Sep 2016.

OPINION – Ahsan Ali Zahid & Hasan Ehtisham

Misguided Perceptions on Nuclear Terrorism

...Nuclear terrorism in real is a quite petrifying phenomenon, but there is no tangible study available that this threat is genuine in a world where nuclear technology is heavily regulated and secured. Since there is no terrorist incident have

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yet been reported which involves nuclear weapons, there is disagreement among the analysts that how serious the threat of nuclear terrorism could be. However, such arguments should not be a source of complacency. Few states have played this threat up for political purposes as a lever against countries that are not likeminded. For example the same approach was used after 9/11, when terrorism was being used to achieve certain interests.

The main aspect of Nuclear Security Summits started from 2010 and beyond was to highlight the nuclear dangers emanating from Iran and other countries were played up. While there was a narrative against these countries, none of the forums allowed them space to appear and give their perspectives on the issue.

The James Martin Center for Nonproliferation Studies annual report of 2015 is a yard stick on the global incidents of nuclear theft or lost. The US tops the rank in the world with 59.4% of negligence, loss or theft incidents followed by France 5.9%, Canada 5.9%, Ukraine 5.3%, and Russia 5.3%. For instance, in 2007, six American nuclear-armed cruise missiles were mistakenly transported from Minot Air Force Base to Barksdale Air Force Base.... Similarly, a truck carrying a radioactive source which could be used in radiological dispersion device i.e., almost a dirty bomb was stolen near Mexico City in 2013. Likewise, Broken Arrow is known term for accidental launching, firing, detonating, theft or loss of the nuclear weapon. Since 1950, there have been 32 accidents of Broken Arrows in the US among which disturbingly six nuclear weapons were never recovered.

...While, Israel is said to be in the possession of nuclear weapons and lies in a region where

terrorist organizations like ISIS, Al-Qaeda, Hezbollah and Hamas are powerful than the Taliban's in the South Asian region. Even the Israeli nuclear reactors are 'an easy target' of the missiles possessed by such terrorist groups. However, the Western media completely ignores these incidents and creatively sets alarm bells on to other countries. In July, *The Economist*, in The World If 2016 edition created a "What if" scenario

and wrote that terrorists have intentions to acquire the nuclear material to make a nuke and can kill millions of people. It impeached that Pakistan's short-range battlefield nuclear weapons and authorities in command are constantly accused as "destabilizing at best" factor and the pressure

"use them or lose them", respectively.

Critically to some extent Pakistan's development of battlefield nuclear weapons have startled India's gigantic military build-up and doctrinal transformation. Positively there is no proven case study available to assume that in case of crises, how the NCA will move missiles or codes and even if they will be put under control of junior officers. The Magazine posits without any evidence that "up to 40% of Pakistan's middle-ranking army officers are to some extent radicalised." Contrarily, former CIA contractor Edward Snowden

revealed that billions of dollars are spent to spy on Pakistan's nuclear program just because of the anxiety "driven more by uncertainty about how it is run than specific intelligence indicating that its systems are vulnerable."

Pakistan's commanding authorities are well aware of the nuclear terrorism threat and accordingly

physical protection measures are improved with several real time training courses. "Nobody knows how they truly do it. Vehicles move in a stealthy

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Unfortunately, nuclear security issue has been hijacked by interests based international politics in which an undue focus has been brought on to the Middle East and South Asia...it is not a stern effort to curb the dangers of unseen nuclear terrorism but it is a measured struggle to brand some countries so weak that nuclear technology is not safe in their hands.

manner and move with security. But it's not clear whether the cores are moved to the warheads or the warheads are moved to the core locations".

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Source: <http://moderndiplomacy.eu/>, 02 Oct 2016.

OPINION – Jayantha Dhanapala

From Placebo Nuclear Disarmament to a Nuke Free World

We are at a tipping point in history. The interconnected threats of nuclear weapons use, climate change and increasing inequality not only imperil the fabric of global society but also the very existence of human life and the eco-system that sustains it. Increasing extremism and terrorism, conflicts triggered by regime change motives and the consequential displacement of people, the largest since WW II, with a rising tide of intolerance are other trends today. On nuclear weapons an estimated 15,850 nuclear warheads, each of them far more destructive than the US bombs that destroyed Hiroshima and Nagasaki 71 years ago, are held by nine countries – four thousand on hair-trigger alert ready to be launched. All nine countries are modernizing their weapons at enormous cost while the DPRK, defying the global norm against nuclear weapons testing, has conducted its fifth and most powerful test on September 9, 2016.

Over a long period of time in the post-1945 nuclear

era, the pressure of public opinion helped create a tenuous taboo on the use of nuclear weapons and build a fence of treaties, bilateral and multilateral, to restrict their use and proliferation. But unlike the outright bans on biological weapons in 1972 and on chemical weapons in 1996 a ban on nuclear weapons was, and continue to be, fiercely resisted by the nuclear weapon states. The NPT, the various nuclear weapon free zones including the ocean floor, outer space and Antarctica and the CTBT whose entry into force is held up by 8 countries – are all achievements to be proud of. In every step of this Sisyphean struggle international public opinion was behind the successes achieved. It is in the last two or three decades an acceleration of the global campaign to eliminate nuclear weapons totally, has been seen. Several independent commissions on security and disarmament beginning with the 1982 Palme Commission, have made important

recommendations.... We also had the groundbreaking 1996 Advisory Opinion of the International Court of Justice, which the nuclear weapon states have ignored. ...

Obama's Prague Speech and the Aftermath: Once elected, President Obama seemed to be fulfilling the expectations that he had aroused with his April 2009 speech in Prague

announcing his vision of a 'nuclear weapon-free world' and, despite the caveat of "not in my lifetime", this inspired many to think of the vision as a real possibility. However, Obama disappointed nuclear disarmament supporters with his Administration's Nuclear Posture Review and the modesty of his New START agreement with Russia, the ratification of which involved a huge donation to the US nuclear weapon establishment.

Today, seven years later, we are nowhere near achieving that vision. The failure of the Ninth

Over a long period of time in the post-1945 nuclear era, the pressure of public opinion helped create a tenuous taboo on the use of nuclear weapons and build a fence of treaties, bilateral and multilateral, to restrict their use and proliferation. But unlike the outright bans on biological weapons in 1972 and on chemical weapons in 1996 a ban on nuclear weapons was, and continue to be, fiercely resisted by the nuclear weapon states.

Review Conference of the NPT in 2015 has led inevitably to some mutual recrimination between the NWS and NNWS. Many close observers of the treaty are wondering what is next. There have been few constructive proposals on how nuclear disarmament might be achieved. Instead of that we have, what I call, 'placebo nuclear disarmament' in the form of Nuclear Security Summits. More recently there have been carefully planted stories of a possible "No first use" declaration by the USA and on September 23, 2016 a fresh non-legally binding UN Security Council Resolution supported CTBT and the de facto moratorium on nuclear weapon testing.

Meanwhile the CTBT entry-into-force languishes because of eight countries including the USA. The apparent end of the Humanitarian Initiative movement and the lackluster outcome of the Open-Ended Working Group on Disarmament – on both of which civil society's hopes had soared – leaves those in favour of nuclear disarmament dispirited and even desperate with an unpredictable US presidential election on November 8 looming large in the background. Nevertheless six nations have on September 28 tabled a resolution at the UN General Assembly calling for the negotiation of a nuclear weapon ban. The pursuit of the mirage of a nuclear weapon free world suits the nuclear-weapon states as they modernize their weapons and collude to block progress at the NPT Review Conferences, at the International Court of Justice and within the UN disarmament machinery. The statement of the P5 issued on September 15, 2016 is a repetition of

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Will the leaders of nuclear-weapon armed states ask the people to vote in a referendum on whether their countries should reduce or de-alert weapon arsenals let alone retain or reject nuclear weapons? Will the people of Scotland have a choice over accepting the renewal by the British House of Commons of the Trident in Faslane? And so we must go back to working for a groundswell of public opinion to get rid of the most destructive weapon invented by humankind.

past policy with no indication of any change.

Civil Society's Critical Role: As civil society, we can no longer depend on Governments of nuclear possessor countries to achieve a nuclear-weapon free world...I have in my lifetime seen the end of colonialism in my own country and region; I have witnessed the civil rights movement in the USA delegitimize racial discrimination; I have seen the collapse of the evil apartheid structure in South Africa with the liberation of Nelson Mandela and his people forming an elected Government in a non-racial democracy in South Africa; I have been witness to the end of the Cold War and the tensions and rivalry between hegemonic powers that we in the Non-Aligned Movement worked so hard to resolve. Those achievements must be credited to the people of the countries involved. Mahatma Gandhi, Martin Luther King, Nelson Mandela and others were not Government leaders when they led their people to achieve change.

Will the leaders of nuclear-weapon armed states ask the people to vote in a referendum on whether their countries should reduce or de-alert weapon arsenals let alone retain or reject nuclear weapons? Will the people of Scotland have a choice over accepting the renewal by the British House of Commons of the Trident in Faslane? And so we must go back to working for a groundswell of public opinion to get rid of the most destructive weapon invented by humankind. Here in Europe, where the last two World Wars began, there are ominous signs of a return of Cold War tensions. The US Congressional Research Service report titled *'Nonstrategic Nuclear*

Weapons' (page 17) says: "According to unclassified reports, the United States now deploys 160-200 bombs at six bases in Belgium, Germany, Italy, the Netherlands, and Turkey. Some of these weapons are stored at US bases and would be delivered by US aircraft. Others are stored at bases operated by the 'host nation' and would be delivered by that nation's aircraft if NATO decided to employ nuclear weapons."

BMD systems based in Europe ostensibly created because of an alleged Iranian threat but in fact aimed at Russia, continue despite the JCPOA agreement with Iran – to which the EU made such a significant contribution. As democracies, will these European countries ask their citizens through plebiscites whether they approve of these policies? The pursuit of containment policies on China in Asia and on the Russian Federation in Europe only exacerbates tension. Gorbachev who accepted the fall of the Berlin Wall in return for NATO remaining within its then borders must be gravely disappointed as we observe the 30th anniversary of the famous Reagan-Gorbachev Summit of 1986 in Reykjavik.

Remembering Reykjavik: A few days hence I will participate in a discussion in Reykjavik on the legacy of that famous 1986 Summit which some see as the beginning of the end of the Cold War. It is an opportune moment to restore the spirit of détente and consider a deep reduction of nuclear weapons to further our advance to a nuclear weapon free world. Non-nuclear-weapon states in concert with civil society groups are looking forward to the Open-ended Working Group on Disarmament bringing its outcome to the current UN General Assembly session.

The "Humanitarian Initiative", the disinvestment campaign of "Don't Bank on the Bomb", which NGOs like ICAN and others have conducted, must

go on until success is achieved. Meanwhile we hope that no use of nuclear weapons either by design or accident; by state or non-state actors takes place with the catastrophic consequences it will bring upon humanity. As long as nuclear weapons exist the simple logic is that their ownership cannot be restricted to the nine states that now possess them. Other states and non-state actors will want them. If there are no nuclear weapons there cannot be nuclear weapon proliferation to terrorists or anyone else. The Global Zero campaign put it bluntly: "There's no such thing as 'nuclear security' as long as nuclear weapons exist."

The 'Thucydides Trap'?:...Another issue raised by commentators on contemporary international affairs and that is the so-called "Thucydides Trap". In an article in *The Atlantic* in September 2015, Professor Graham Allison of Harvard's Belfer Centre wrote: "The defining question about global order for this generation is whether China and the United States can escape Thucydides Trap. The Greek historian's metaphor

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reminds us of the attendant dangers when a rising power rivals a ruling power – as Athens challenged Sparta in ancient Greece, or as Germany did Britain a century ago. ...

In 12 of 16 cases over the past 500 years, the result was war. When the parties avoided war, it required huge, painful adjustments in attitudes and actions on the part not just of the challenger but also the challenged. "While international affairs experts and diplomats debate the issue, one fundamental aspect that stands out from the 16 cases referred to, is that nuclear weapons, with the single exception of the Cold War, were never a part of the equation. There is therefore no question of falling into the "Thucydides Trap" by design or accident when the contending powers are armed with weapons of mass destruction and

when non-state terrorist actors seek these weapons for themselves. Solutions based on international law and negotiated through patient diplomacy, and not war, aggressive containment policies or uncompromising irredentism, are surely the lesson of history to be adopted in this nuclear age.

2017 may well be an auspicious year. We begin the new NPT Review cycle. The world will have a new US President – for better or worse. There will be a new UN Secretary-General. And the EU will, hopefully, have adjusted to the exit of the UK. Amidst all the challenges that this will entail, a fresh approach to the NPT – given its global importance as the cornerstone of the nuclear non-proliferation regime – and new steps towards nuclear disarmament will be vitally important.

Source: <http://www.indepthnews.net/>, 02 Oct 2016.

OPINION – Kanwal Sibal

Trouble All Around - Security Concerns that India Must Address

Our regional security environment remains problematic. Pakistan is now structurally incapable of normalizing ties with India. The armed forces and the extremist groups nurture hostility towards India. The civilian government is not fully in control. Pakistan's use of terrorism as an instrument of State policy continues, as the latest attack in Uri demonstrates. We

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cannot isolate Pakistan internationally if we do not rupture our own ties with it first. Our quest to have Pakistan declared a terrorist state by the United States of America or the United Nations will not succeed. We could not get even Masood Azhar declared a terrorist by the UN Security Council. Both China and the US will not let Pakistan be declared a terrorist state. The US cannot do business under its laws with such a state, whereas China's iron ties with Pakistan are known.

We can, however, expose Pakistan internationally even more for its terrorist affiliations and lay bare its narrative as a victim of terrorism. We have begun to do this much more aggressively than before...highlighting Pakistan's brutalities in Balochistan and listing its problems even in Sindh and Khyber Pakhtunkhwa at the P.M.'s level is unprecedented.

We will not succeed in our objective if isolating Pakistan means its ostracism by the international community through our diplomatic offensive in exposing its terrorist linkages. Pakistan as a large Islamic state with nuclear capability is also consequential geopolitically. China, of course, is an all-weather friend. Key countries remain unwilling to sanction Pakistan while fully aware of its truck with terrorism, notably its sheltering of Osama bin Laden and Mullah Omar. The US decision to withhold some economic and military aid is a token step that Pakistan has learnt to absorb. China-Pakistan nuclear cooperation is expanding in violation of China's own NSG commitments, with the US silent

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on the matter. The latter even allowed China to administer a rebuff to India by preventing its membership in an organization set up and dominated by the US – the NSG. Pakistani leaders threaten India with the use of nuclear weapons without any condemnation by the US for dangerous talk.

Pakistan is introducing tactical nuclear weapons without any serious response from the US within the non-proliferation framework. China has now decided to invest far more than it has done before in its Pakistan relationship, which now goes beyond the India dimension and is inscribed in the larger geopolitical ambitions of China. The China-Pakistan Economic Corridor has serious implications for us as it consolidates Pakistan's

ownership of this illegally occupied territory, besides making China a third party to India-Pakistan differences on Kashmir. The US is silent on the CPEC and Gwadar. In fact, it is encouraging China to expand its economic involvement in both Pakistan and Afghanistan as part of burden-sharing.

The US has also encouraged China to play a role in bringing the Taliban to the negotiating table, disregarding our concerns about the Taliban sharing power in Afghanistan under Pakistan's patronage.

China's uncompromising position on territorial issues in the South China Sea has lessons for us. Its position on historical rights and protecting at all cost the legacy left by its ancestors has no basis in international law. Its vilification of the United Nations Convention on the Law of the Sea award shows scant regard for international law if it invalidates its claims. China's policies in our neighbourhood threaten our security interests. In Nepal it is competing with us much more openly than before, with the pro-China lobby in Nepal playing the China card more brazenly.

The coming to power of the P.M. Prachanda, is a

favourable development, but it does not solve the structural problems of our relations with Nepal. China's strategic encirclement of India is evident in its Indian Ocean strategy, in which Sri Lanka is a pivot. Gwadar will most certainly become a Chinese naval base in due course. We have to be concerned about Chinese inroads into the Maldives. The situation in Afghanistan is deteriorating with mounting Taliban activity. We have taken some steps to give substance to our strategic ties with Afghanistan, but we cannot supplant the US and provide military assistance on a large scale.

With the nuclear issue resolved, building closer ties with Iran is now feasible. Investing in Chabahar is a good strategic step; the North-South

Corridor through Iran, when implemented, will open the doorway to Central Asia and Russia. But Iran is a difficult partner and its need to manage relations with Pakistan will place limits on its deeper strategic cooperation with us. It is also more focused on the Islamic State threat in the West than the Taliban

threat in Afghanistan. Our relations with the Gulf countries are improving, with substantial progress on security issues with the United Arab Emirates and Saudi Arabia. The rise of the Islamic State is a problem for the whole region, including, potentially, India. The Saudi-Iran rivalry, the sharpening Shia-Sunni conflict, as well as Saudi Arabia's adventurist policies that could destabilize the kingdom, can threaten our energy, financial and manpower interests in the region.

We have accepted the notion that the security of the Asia Pacific region is tied in with that of the Indian Ocean. We have thus effectively endorsed the US rebalance towards the Asia-Pacific, but without being able to get US support for our security interests in our own region. This marked imbalance needs redress. Our naval exercises with the US and trilaterally with Japan, as well as collective ones with Indian Ocean countries

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highlight the role of the Indian navy in safeguarding maritime security in the Indian Ocean. No Asian security architecture exists, beyond that built around the Association of Southeast Asian Nations. But China is challenging the interests of key ASEAN countries in the South China Sea, besides clashing with Japan in the East China Sea. It has succeeded in intimidating and dividing ASEAN countries. The US response has been weak. Our Act East policy, connectivity projects with Southeast Asia, participation in security forums instigated by ASEAN are helpful in advancing our security interests eastwards.

Russia-China ties are deepening strategically, with Russia supplying advanced military equipment to China. China is expanding its influence in Central Asia and the Eurasian region at the cost of Russian power. The SCO is dominated economically by China. The One Belt-One Road project will expand further China's geopolitical and economic influence in this vast region. China's economic muscle and Russia's economic difficulties have altered the Russia-China equation in Russia's disfavour. This affects the balance of power with the RIC and BRICS formats against India's interest. Russian defence-related overtures to Pakistan is a new factor linked to improved Russia-China ties and strengthening India-US relations that requires our attention.

Cyber security has become a major concern. There are no acceptable rules of conduct in this domain, in spite of the exponential growth of digital technology in governing our societies and the entailing vulnerabilities. All in all, the challenging regional and global security environment that is emerging requires a rapid growth in our economic and military strength that must include a strong indigenous defence manufacturing base.

Source: *The author is former foreign secretary of India, <http://www.telegraphindia.com/>, 03 Oct 2016.*

OPINION – Vipin Narang

The Lines that have been Crossed

While strategic restraint vis-à-vis Pakistan may still persist as grand strategy, the predawn operation into PoK signals that the era of visibly 'doing nothing' militarily may be ending. As the dust settles following the so-called September 29, 2016, "surgical strike" which witnessed the publicly acknowledged employment of Indian special forces across the LoC for the first time in over a decade, it is useful to take stock of the larger implications — what the operation does and does not mean for India's broader strategic dynamic with Pakistan. On the one hand, those heralding a "new era" where India has "called Pakistan's nuclear bluff" will be disappointed: the operation did not fundamentally alter the strategic options available to India. On the other hand, those decrying that the operation meant absolutely nothing are also wrong: it has very real implications for future iterations of this tragic and dangerous conflict dynamic, and indicates the degree to which domestic political pressure to do something in response to Pakistani provocations against even military targets — let alone civilians — is boiling over.

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Three Myths: What are the wrong lessons to draw from the surgical strike? First, it does not show that India has "called Pakistan's nuclear bluff". There is a lot of self-congratulation in the Indian media that India has finally called Pakistan's nuclear threat for what they believe it is: a bluff. This is wrong and extremely dangerous. No serious analyst, scholar, or military officer ever argued that the threat of nuclear use against Indian forces was salient, or even possible, for operations across the LoC. It is only operations across the international border — and more likely in the desert sector where India's 21 Corps has a

quantitative and manoeuvre advantage over Pakistan's forces — which present possible targets for tactical nuclear use (such as logistics, bridgeheads, or concentrated armoured forces) where the threat of Pakistani nuclear use becomes salient. Short of that, and particularly on the LoC, India has always had — and will continue to have — a wide berth to use limited force, both on the ground and in the air.

This does not mean that such operations may not escalate to a broader conflict, and there is a real fear they might spiral. But, in and of itself, the surgical strike was well below any Pakistani nuclear threshold, and analysts have long known that. The strike does not mean that India can now conduct operations that significantly attrite the Pakistan military or seize valuable territory across the international border. Pakistan's nuclear weapons are real, and they impose strategic limits on what India can do.

Second, the surgical strike does not herald a new era of conventional retaliatory options for India. This was not evidence that India has a proactive strategy (popularly known as Cold Start) option available for deeper punitive strikes — either on the ground or with air and stand-off capabilities. The use of special forces, at most several kilometres across the LoC, was carefully planned and, by most official accounts, highly successful. But one should not be deluded into believing that India has now developed the capability to catch the Pakistan military by surprise with even more punitive strikes than this. The Modi government was very careful not to use helicopters across the LoC, and even the drone that recorded the strike could have easily loitered over Indian territory to do so. Furthermore, as security analyst Manoj

Joshi has shown, one should not mistake special force strikes like this with the capability to conduct deeper covert special operations. This strike should therefore not be read as evidence that India has advanced its so-called Cold Start options.

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Third, and important, the strike in no way suggests that the government has abandoned strategic restraint as a general grand strategy towards Pakistan. There is a lot of confusion about what strategic restraint means. Most precisely, it means avoiding operations that risk major conventional escalation: attriting the Pakistan military or seizing valuable territory across the international border. Strategic restraint does not mean “do nothing”. It means responding in a way that does not potentially become strategically costly for India by risking a broader conventional war, which carries with it not only human and economic costs, but also the risk of nuclear use if the war spills across the international border. By carefully framing the operation as defensive and pre-emptive, limited in time and scope, and avoiding targeting Pakistan Army personnel, the government squarely stayed within the parameters of strategic restraint. This was a strike with immediate tactical consequences, but it demonstrated significant strategic restraint by what it took great pains not to do: target the Pakistan Army.

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So what, then, are the major implications of the surgical strike? First, although the surgical strike demonstrated immense strategic restraint, it suggests that visibly “doing nothing” militarily may no longer be domestically politically tenable. Given the public outrage, expressed most vehemently online and on television, the notion that attacks by Pakistani-supported militants can be suffered with no response may be increasingly

unsustainable. The cumulative harms believed to be suffered by India since the Kargil war in 1999 have slowly built pressure amongst at least a very vocal section of the public that enough is enough. The groundswell of anger, and Mr. Modi's own professed tough line against militant attacks, tied his hands to some degree. He believed he could not "do nothing" without suffering some damage to his domestic credibility. This dynamic is now a fact. But it is also potentially dangerous. One must walk a fine line with hawkish nationalism.

On the one hand, it can generate a deterrent to more audacious Pakistani attacks, if Pakistan fears that hawkish Indian nationalism might force a disproportionate response. On the other hand, hawkish nationalism can force leaders to escalate when it is not in the national interest to do so. Nevertheless, while strategic restraint may still persist as grand strategy, the era of visibly "doing nothing" militarily may be ending.

Second... although the Indian national security establishment is often given a lot of grief — for one, was there adequate force protection at Uri, and why were the jawans not in fire-retardant tents? — it deserves a lot of credit for how this finely calibrated operation was conceived, planned, executed, and managed. The Modi team needed to find a sweet spot between "do nothing" and abandoning strategic restraint, simultaneously satisfying the domestic political forces baying for blood while avoiding risking further escalation. It found that sweet spot and deserves acknowledgement for it.

By publicly announcing that it had responded with a concrete justifiable objective, and highlighting the enduring professionalism of the armed forces, it satisfied wide portions of the media and public. But by limiting the scope and duration of the operation, subsequently framing it not as retaliation but as a pre-emptive strike against an imminent attack from the launch pads, it avoided further escalation by giving Pakistan a largely face-saving way to not have to respond in kind —

if it chooses to avail itself of it. For a national security apparatus that is often accused of dysfunction, this strike illustrated that it is immensely capable when it needs to be.

Finally, and most broadly, the surgical strike shows Pakistan that it must now consider potential Indian responses in the future. And the nature of those responses may be unpredictable. Perhaps they will be calibrated like this one. Or perhaps they may escalate, if the attacks persist or, worse, expand against civilians in metropolises. Although this strike in and of itself was limited in duration and aims, it sets a precedent that could potentially have a growing deterrent effect on Pakistan. Strategically, Pakistan must now account for

potential Indian retaliation where the intensity is uncertain — anywhere from "doing nothing" to higher intensity military action around the LoC — and this is perhaps the most enduring implication of the strike.

Thus, the strike does have some very real long-term strategic consequences that are important to consider...it is imperative that India does not get drunk on success. The strike was

reportedly highly successful at the tactical level, but it did not alter the fundamental strategic dynamic between India and Pakistan — nor was it intended to do so, for very good reasons. It should not thus be viewed as a carte blanche with which India can now impose its will on Pakistan militarily — that is neither possible nor in India's broader strategic interest. And it remains to see how Pakistan will respond, if at all, which could touch off a dangerous escalatory action-reaction cycle. This is a conflict dynamic, after all, and the adversary always gets a vote.

Source: <http://www.thehindu.com/>, 04 Oct 2016.

OPINION – William J. Perry

Why It's Safe to Scrap America's ICBMs

In recent years, Russia and the US have started rebuilding their Cold War nuclear arsenals, putting the world on the threshold of a dangerous new

Although this strike in and of itself was limited in duration and aims, it sets a precedent that could potentially have a growing deterrent effect on Pakistan. Strategically, Pakistan must now account for potential Indian retaliation where the intensity is uncertain — anywhere from "doing nothing" to higher intensity military action around the LoC — and this is perhaps the most enduring implication of the strike.

arms race. But we don't have to repeat the perilous drama of the 20th century. We can maintain our country's strength and security and still do away with the worst of the Cold War weapons. The American plan to rebuild and maintain our nuclear force is needlessly oversized and expensive, expected to cost about \$1 trillion over the next three decades. This would crowd out the funding needed to sustain the competitive edge of our conventional forces and to build the capacities needed to deal with terrorism and cyber attacks. The good news is that the US can downsize its plans, save tens of billions of dollars, and still maintain a robust nuclear arsenal.

Firstly...it can safely phase out its land-based ICBM force, a key facet of Cold War nuclear policy. Retiring the ICBMs would save considerable costs, but it isn't only budgets that would benefit. These missiles are some of the most dangerous weapons in the world. They could even trigger an accidental nuclear war. If our sensors indicate that enemy missiles are en route to the US, the president would have to consider launching ICBMs before the enemy missiles could destroy them; once they are launched, they cannot be recalled. The president would have less than 30 minutes to make that terrible decision.

This is not an academic concern. While the probability of an accidental launch is low, human and machine errors do occur.... During the Cold War, the US relied on ICBMs because they provided accuracy that was not then achievable by submarine-launched missiles or bombers. They also provided an insurance policy in case America's nuclear submarine force was disabled. That's not necessary anymore. Today, the United States'

submarine and bomber forces are highly accurate, and we have enough confidence in their security that we do not need an additional insurance policy — especially one that is so expensive and open to error.

As part of the updates to America's nuclear arsenal, the government is also planning to replace nuclear-armed submarines and bombers. If we assume that the Defense Department is critically analyzing the number of systems needed, this makes far more sense than replacing ICBMs. The submarine force alone is sufficient to deter our enemies and will be for the foreseeable future. But as technology advances, we

have to recognize the possibility of new threats to submarines, especially cyber attack and detection by swarms of drones. The new submarine program should put a special emphasis on improvements to deal with these potential threats, assuring the survivability of the fleet for decades to come.

The new stealth bomber will provide a backup to submarines. This is not likely to be necessary, but the bomber force is a good insurance policy. The new bomber would be capable of carrying out either conventional or nuclear missions. But the development of new air-launched nuclear cruise missiles, which has been proposed, is unnecessary and destabilizing. We can maintain an effective bomber force without a nuclear cruise missile.

Instead of overinvesting in nuclear weapons and encouraging a new arms race, the US should build only the levels needed for deterrence. We should

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Instead of overinvesting in nuclear weapons and encouraging a new arms race, the US should build only the levels needed for deterrence. We should encourage Russia to do the same. But even if it does not, our levels of nuclear forces should be determined by what we actually need, not by a misguided desire to match Moscow missile for missile.

encourage Russia to do the same. But even if it does not, our levels of nuclear forces should be determined by what we actually need, not by a misguided desire to match Moscow missile for missile. If Russia decides to build more than it needs, its economy will suffer, just as during the Cold War. The Obama administration says it is looking for ways to reduce nuclear dangers. If this examination leads to a reduction in planned nuclear programs and costs, it would be consistent with the Democratic Party's new platform, which states that the party "will work to reduce excessive spending on nuclear weapons-related programs that are projected to cost \$1 trillion over the next 30 years." In addition, 10 senators recently wrote to the president, calling on the administration to "scale back plans to construct unneeded new nuclear weapons and delivery systems." A similar letter from House members warns that the nuclear plan may be "neither affordable, executable, nor advisable."

Russia and the United States have already been through one nuclear arms race. We spent trillions of dollars and took incredible risks in a misguided quest for security.... This time, we must show wisdom and restraint. Indeed, Washington and Moscow both stand to benefit by scaling back new programs before it is too late. There is only one way to win an arms race: Refuse to run.

Source: <http://www.nytimes.com/>, 30 Sep 2016.

OPINION – Editorial

Clinching the N-Deal with Japan

India has completed agreements for civil nuclear cooperation with 11 countries so far, including the US, Russia, Australia, Canada and South Korea, but the upcoming agreement with Japan could be the most significant. Japan is the only country to have been the victim of a nuclear attack, and its decision to sign an agreement with India, a country that has not signed the Treaty on the NPT, would be a first. Reservations in Japan against nuclear energy have hardened after the

Fukushima accident. Tokyo's support to the deal so far is therefore an indication of the importance it accords to relations with India.

For India, the civil nuclear agreement with Japan is especially important for the message of trust it would convey to NSG members in a year the country hopes to have its admission accepted. Japan's support at the NSG has been particularly marked. In fact, India and Japan share many multilateral platforms, including membership of the G-4 group that is knocking at the UN Security Council's door for reform. Beyond symbolic reasons, Japanese nuclear energy technology and safety parameters are widely considered to be cutting-edge, and many critical parts needed for Indian reactors are made by Japanese manufacturers. These will not be available to India until the agreement

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is done. Although India has even considered trying to manufacture them locally, there won't be alternatives to Japan for several years. Even the US civil nuclear deal, that is yet to be actualised, is contingent on the deal with Japan, given that the current discussions for six reactors in Andhra Pradesh are with Westinghouse, which is owned by the Japanese company Toshiba.

It may appear baffling why the deal has taken so long to negotiate. The main sticking point has been India's refusal to sign the NPT, as it considers the treaty unfair to the developing world. This is why New Delhi is keen on ensuring that in the haste to seal the deal by the time PM Modi visits Japan this winter, it doesn't give in to pressure to adhere to anything more than its own self-declared moratorium on testing. The Japanese insistence on a "nullification" clause that the agreement would cease as soon as India tests, will be judged with this balance in mind. Particularly post-Fukushima, Japanese manufacturers will also be expected to be more generous with India on the liability issue, given their own experience with the enormous cost of cleaning up. As always, and even more so than with the India-US agreement, the devil will be in the detail of the final draft.

Source: <http://www.thehindu.com/>, 05 Oct 2016.

NUCLEAR STRATEGY

RUSSIA

Russia Deploys Nuclear-Capable Missiles in Kaliningrad

Moscow has moved nuclear-capable missiles near the Polish border, its defence ministry confirmed, as Germany's foreign minister warned that tensions between Russia and the West were "more dangerous" today than during the Cold War. Russia moved missiles capable of carrying nuclear weapons into Kaliningrad, an Russian coastal enclave nestled between Poland and Lithuania. The Iskander missiles have a range of 450 miles, meaning they could hit Berlin if launched from Kaliningrad.

... Lithuania's foreign minister, Linas Linkevicius, said Russia's missile deployment was an effort to "seek concessions from the West" over the conflicts in both Syria and Ukraine, while Poland said Russia's behavior was "very alarming". Both countries are Nato members, meaning that Britain and other countries are obligated to come to their aid if they are attacked.

Russia said the deployment was part of a routine missile drill that it was carrying out across the country. It came as Russia and the US prepared to clash at the UN with rival resolutions over Aleppo. The US has backed a French resolution demanding Russian and the Syrian regime cease their aerial bombardment of the city, which Russia vetoed. The French draft received 11 votes in favour, while China and Angola abstained. Venezuela joined Russia in voting against it. ...

Source: Raf Sanchez, <http://www.telegraph.co.uk>, 08 Oct 2016.

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USA

White House Says US Trying to Deploy THAAD as soon as Possible

The United States is working with South Korea to deploy the THAAD missile defense system as early as possible to defend the Asian ally and American troops there from North Korean missile threats, the White House said. The White House said in a posting at its "We the People" online petition website that Washington and Seoul decided to deploy a Terminal High Altitude Area Defense battery in the South because of "North Korea's continued provocations and refusal to engage in serious negotiations on denuclearization."

The posting was in response to a petition calling for scrapping the decision to deploy THAAD. "The THAAD battery will be focused solely on countering the North Korean nuclear and ballistic missile threat. THAAD will improve the U.S.-ROK joint missile defense posture in countering short-and medium-range regional ballistic missiles," the White House said. "It will not undermine China's or Russia's strategic deterrent. The United States is working with the ROK to deploy this system as soon as feasible in order to more safely defend our ROK Ally and U.S. military personnel deployed to the region from the North Korea nuclear and ballistic missile threat," it said. The White House also noted growing threats from the North. ...

Source: <http://english.yonhapnews.co.kr>, 11 Oct 2016.

US-RUSSIA

Why the US can't Trick Russia into Changing its Nuclear Doctrine

On 27 September, Senator Markey and Representative Ted Lieu introduced legislation which would bar the President from conducting

a nuclear first strike absent a Congressional declaration of war. Russian military analysts comment on the bill, and the prospects it has for changing Russian strategic doctrine. In the press release for the bill, Senator Markey explained that “by maintaining the option of using nuclear weapons first in a conflict, US policy increases the risk of unintended nuclear escalation.” According to the senator, “the President should not use nuclear weapons except in response to a nuclear attack.” The proposed “legislation enshrines this simple principle into law.”

In turn, outlining his support for the bill, Congressman Lieu said that “our Founding Fathers would be rolling over in their graves if they knew the President could launch a massive, potentially civilization-ending military strike without authorization from Congress.” According to the lawmaker, granting this power to any single individual “is flatly unconstitutional.” With US

What if any connection is there between Carter's words and the bill recently put forth by Democrats in Congress? The answer, according to Ermakov, a senior expert at the Russian Institute for Strategic Studies...is that the actions by Congressional Democrats and the Pentagon are pieces to one puzzle.

journalists and political analysts suggesting that the proposed legislation has to do with the prospect of Donald Trump becoming President and given the nuclear codes, their Russian counterparts have offered a different take, which they suggest is worth considering. Commenting on the bill, Svobodnaya Pressa contributor Andrei Polunin noted that “at first glance, the Democratic initiative is a bad fit with the Pentagon's position. A day earlier, Secretary of Defense Ash Carter accused Russia and North Korea of ‘sabre rattling’, and said that these were the only two countries which pose a nuclear threat to the United States.”

Speaking at the Minot Air Force Base in North Dakota, where he inspected the base's 150 Minuteman III ICBMs, Carter explained that the US and its European allies were now “refreshing” US strategy, integrating conventional and nuclear deterrence. This, the Secretary of Defense said, is meant to “deter Russia from thinking it can benefit from nuclear use in a conflict with NATO.” Of course, this “refresher” includes an increase in spending to modernize the US nuclear arsenal

and the means of its delivery.

Perhaps most importantly, according to Polunin, was Carter's claim that Moscow has little regard “for long-established accords of using nuclear weapons,” raising “serious questions” about “whether they respect the profound caution that Cold War-era leaders showed in respect to brandishing their nuclear weapons.”... The question that's worth asking is: What if any connection is there between Carter's words and the bill recently put forth by Democrats in Congress? The answer, according to Ermakov, a senior expert at the Russian Institute for Strategic Studies...is that the actions by Congressional Democrats and the Pentagon are pieces to one puzzle. “In the early 1990s,” the expert recalled, “US military analysts actively developed the concept of preventative defense, and these designs have never gone away.

It is on the basis of these concepts that the US continues to build its long-term military strategy. The US always proceeded from the assumption that they have an advantage over China and Russia in conventional weapons, and overwhelming superiority in prospective weaponry. Only Moscow's superiority in nuclear forces forced Washington to reckon with Russia as a serious potential opponent.” In recent years the US appraisal of Russian capabilities has since shifted. “Washington has learned that Russia has a strong foundation in Soviet military research, which has allowed the Russian Armed Forces not only to stay afloat, but to ensure their future development.

In this situation, the US finds it beneficial to accuse Russia of destabilizing the international situation, in order to maintain and upgrade America's own nuclear arsenal.” For example, Ermakov noted that the US plans to spend \$8.1 billion to modernize its B61 nuclear bomb – via the so-called B61-12, which would replace four

existing modifications, by 2024. This weapon will feature improved range and accuracy compared to its predecessors, and can be fired from both strategic and tactical aviation. This is concerning to Moscow, the analyst explained, since the weapon's glide capability will allow it to target Russian territory without its carrier entering the zone of Russian air and missile defense. Moreover, "this type of weapon is dangerous because there is no way of knowing whether the rocket carrying it carries a nuclear or conventional warhead, thus increasing the risk of unintended escalation."

At the same time, Pentagon analysts remain confident about a qualitative and quantitative superiority in Europe over Russia in conventional armaments. "This assessment is not changing, in spite of the recent noise in Western mainstream media about the US's alleged weakened military might," Ermakov emphasized. Key US experts believe that Russia's latest weapons would make little difference – they are too few in number." Accordingly, the analyst emphasized, a unilateral US rejection of the doctrine of first strike could be aimed only at tying Russia's hands. "Washington is talking only about giving up preemptive strike using nuclear weapons. But they retain the possibility of a preemptive attack by all other types of weapons, and will stand firmly on that principle." "The result is that in accordance with the doctrine of containing Russia, the US is increasing its nuclear capabilities.

Meanwhile, in formally abandoning the doctrine of preemptive nuclear strike, they get an opportunity to 'play in the field', where it is more difficult for Russia's armed forces to achieve superiority over the US. Finally, an initiative rejecting preemptive nuclear strike gives the US a trump card in the information war – allowing

them to talk about the 'monstrous aggression of the Russian regime', and blaming Moscow for unleashing an arms race." ... "In essence, the US is repeating the technique of Leonid Brezhnev's Soviet Union, which unilaterally renounced the first use of nuclear weapons. This was done because at the time, the USSR had a significant superiority in conventional forces over NATO.

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Soviet attack." Today, Alexandrov noted, the situation has been flipped on its head. Russia can no longer resist the combined might of NATO in a long war using only conventional weaponry. "Therefore, since the 1990s, our doctrine provides for the possibility of using nuclear weapons first in case of a serious threat to Russia's national security."

"Thus, the Democrats' initiative is aimed at achieving strategic superiority over Russia, and possibly China," the analyst suggested. "Of course, Moscow should not give in to this kind of demagoguery. Russia must continue to retain the right to use tactical nuclear weapons first," he emphasized. Ultimately, Alexandrov noted, Russia has already taken the necessary measures to move to a new generation of nuclear weaponry, from the Iskander tactical missile complex and the Kh-101 strategic cruise missile, which has a range of 5,000 km, to new ballistic missiles capable of overcoming US missile defenses. "All of this has forced the US to maneuver in this way, and to try to outplay Russia in the nuclear field," the analyst concluded.

Source: <https://sputniknews.com/>, 29 Sep 2016.

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BALLISTIC MISSILE DEFENCE

NORTH KOREA–JAPAN

North Korean Missile Advances Expose Japan in Two-Decade Arms Race

Successful rocket tests have propelled North Korea ahead in a two-decade long arms race with Japan, leaving Tokyo unsure it could fend off a missile strike by the Pyongyang regime without US help, military sources told Reuters. Under young leader Kim Jong Un, North Korea has test fired 21 ballistic missiles since the start of the year, an unprecedented burst of activity that has rattled its neighbours and the international community. "Their progress has been faster than anticipated," a senior Japanese military commander said. "There is a limit to what our current ballistic missile defence system can achieve," he added, asking not to be identified because he isn't authorized to speak to the media.

Planned upgrades to Japan's BMD are not due to begin until April at the earliest, while the deployment of new systems designed to destroy incoming warheads could take years to complete. Constrained by production schedules and tight budgets that limit its ability to accelerate those plans, Japan may instead have to lean more heavily on its US ally to guard against attacks, the sources said. "Our only option for now may be to rely on the US to stop them," said another source at Japan Self Defence Forces (SDF).

Tokyo and Pyongyang have been locked in an arms race since 1998 when North Korea fired a missile over Japan. In June, a medium range Musudan rocket reached an altitude of 1,000 km (620 miles) on a lofted trajectory, marking a breakthrough that could allow Pyongyang lob warheads over the range of Japanese BMD Aegis destroyers patrolling the Sea of Japan. That would leave older

PAC-3 Patriot missile batteries protecting major cities including Tokyo as a last line of defence. A \$1 billion program to improve their range and accuracy will begin after March, but the first will not be ready until the 2020 Tokyo Olympics, sources previously told Reuters.

Warheads from missiles such as Pyongyang's Rodong, with an estimated range of 1,300 km (800 miles), travel at speeds of up to 3 km (1.9 miles) a second. But rockets like the Musudan, which can fly as far as 3,000 km (1,860 miles), plunge from space at speeds reaching 21 km (13 miles) per second, potentially too fast for existing Patriot batteries. Japan's Ministry of Defense also plans to improve the performance of SM-3 missiles on its small Aegis fleet. The SM-3 missiles are designed to hit warheads at the edge of space, but the sources who spoke to Reuters were unsure they could tackle the Musudan. A more powerful version of the SM-3 jointly developed by Japan and the US, dubbed the Block IIA, is nearing completion, with Japan planning to buy the

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first of those next year. It has not, however, said how many it will acquire, or when they will be deployed.

Longer term, Japan is evaluating whether to buy Lockheed Martin Corp's (LMT.N) THAAD system, to add a middle layer to BMD, or build Aegis batteries on shore to bolster its defences. Any roll out of those, however, would take several years because of time needed to study the technology, secure funding and build and integrate the systems, the sources said.

US Help: As Japan struggles to bolster its defences, the US is stepping up help to neighbouring South Korea, promising to speed up deployment THAAD batteries there. "We still think they need time, but whatever the purpose is, the North is doing things at a rate that is beyond our

imagination," South Korean Defence Minister Han Min-koo said in parliament in late August. Pentagon spokesman Commander Gary Ross said the US had recently reaffirmed its "unwavering and ironclad" commitment to defend both South Korea and Japan, "guaranteed by the full spectrum of US military capabilities, including conventional, nuclear, and missile defence capabilities." "We continue to support (South Korean) and Japanese efforts to strengthen their respective defence capabilities against the North Korean nuclear and missile threat," Ross said ...

For now, Japan is making do with a diminished force. It has four Aegis destroyers each equipped with eight SM-3 missiles. Two of those, however, are laid up for maintenance leaving only two available to watch for North Korean missiles, a third SDF source told Reuters. The heightened threat "comes just as we face a pinch with our Aegis fleet," he said. "Cooperation with the US Aegis ships deployed in Japan is going to be crucial." By March 2019 Japan plans eight BMD Aegis ships, but training and maintenance means that only two ships will likely be out on regular patrols at any one time. US reinforcements that could help cover more sky are, however, sailing into the region. The US Navy, as part of a plan to bolster its presence formulated before North Korea's latest missiles tests, has increased its BMD Aegis ships patrolling the region to ten from seven in the past two years.

Whether that will prove sufficient to protect against further North Korean advances is yet to be seen. "North Korean ballistic missile technology is progressing step by step and every

time we raise our capability they improve theirs," said a fourth SDF source.

Source: <http://in.reuters.com/>, 04 Oct 2016.

NUCLEAR ENERGY

CHINA

According to the South China Morning Post, Chinese researchers are carrying out intensive work to develop "portable nuclear battery packs" within five years. The lead-cooled reactor would be capable of generating around 10 megawatts of power, which could supply power to up to 50,000 households and run for decades without the need for refuelling. At just 6.1m long and 2.6m high, they will be built small enough to fit inside a shipping container, which could help Beijing's efforts to take more aggressive action in the South China Sea.

The SCMP reports the reactor is based on a design used in 1970s Soviet submarines. Professor Qunying Huang, a spokesperson for the Chinese Academy of Sciences' Institute of Nuclear Energy Safety Technology, said they hope to ship the first unit within five years. "Part of our funding came from the military, but we hope — and it's our ultimate goal — that the technology will eventually benefit civilian users," she said. However, she said it would be a challenge convincing people the technology is safe to use.

If one of the reactors was to malfunction - through a possible tsunami or stormy weather, for example - the radioactive waste could be capable of

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Chinese researchers are carrying out intensive work to develop "portable nuclear battery packs" within five years. The lead-cooled reactor would be capable of generating around 10 megawatts of power, which could supply power to up to 50,000 households and run for decades without the need for refuelling.

spreading around the world via the region's strong sea currents. A marine environment researcher at the Ocean University of China, in Qingdao, expressed concern over the environmental implications of such a reactor. Many fish and marine creatures will not be able to deal with the dramatic change of environment caused by massive desalination and the rise of sea temperatures caused by a nuclear reactor," said the researcher, who declined to be named.

... Earlier this year, the state-run *Global Times* said the country is expected to build up to 20 floating nuclear power stations to beef up the power and water supplies on the South China Sea islands. At the time, analysts said maritime nuclear power platforms would play an important part in China's strategy to increase its presence in the South China Sea.

Li Jie, a Beijing-based naval expert, said the platforms could provide reliable power for lighthouses, seawater desalination, rescue and relief equipment and defensive weapons in the region. ...

Source: <http://www.news.com.au/>, 12 Oct 2016.

KENYA

Kenya not Ready to Generate Nuclear Energy

Six years ago, Kenya announced it was going to build a nuclear power plant, which would generate 1,000MW (1GW) of electricity. By 2030, the country hopes to produce 4GW from nuclear sources. This implies that nuclear will at that time account for 19 per cent of Kenya's total energy output, second to hydroelectric power. There is a pessimism about Africa's largest geothermal energy producer's capacity to harness and safely utilize nuclear energy. It is only KenGen that is showing seriousness in geothermal energy production and putting in place safety measures to curb accidents and damages.

The overriding concern about any nuclear project is safety. There is the potential damage in terms of costs and casualties in the event of a nuclear accident. Although advancements in nuclear science have led to improved reactor designs with

the ability to shut down automatically during an emergency, scientists say the probability of a nuclear accident will never be zero. In the event of a reactor meltdown or terrorist attack on the plant, which would release dangerous radioactive particles into the atmosphere, Kenya's disaster preparedness and response will ultimately make the difference between minimal and widespread damage.

The second concern is disposal of radioactive waste from the plant, which is hazardous to human health and the environment. The third worry is that much of the knowledge and materials employed in a civilian nuclear programme can be used to develop nuclear weapons. Kenya is a signatory to the NPT, which aims to promote safe use of nuclear energy by preventing the spread of nuclear weapons or their technology. Kenya's installed electricity generation capacity is much smaller than the expected nuclear output.

Source: <http://www.standardmedia.co.ke/>, 04 Oct 2016.

NUCLEAR COOPERATION

BELARUS–PAKISTAN

Pakistan, Belarus Agree on Nuclear Cooperation, Tripartite Trade

Pakistan and Belarus on 05 October, 2016 agreed to cooperate in the field of nuclear energy and on devising a tripartite trade mechanism by involving a third country. "Pakistan and Belarus want to promote cooperation in nuclear energy for peaceful means," President of Belarus Lukashenko said in a joint press stakeout with PM Nawaz Sharif, following their meeting held here at the PM's House.

President Lukashenko said Belarus and Pakistan could expand their trade horizon by including a third country, for example China. He termed the talks with PM Nawaz Sharif as constructive, saying they focused on further strengthening the foundation of friendship laid during his earlier visit to Pakistan last year. He said Belarus was aware of the hard time Pakistan was experiencing in its relations with a neighbouring country. ... PM Nawaz

Sharif said the visit of President Lukashenko would instill new momentum to the multi-faceted relationship of Pakistan and Belarus. He mentioned that the signing of agreements and MoU between the two countries...would usher in a new era of prosperity for their people. ...

Source: <http://dailytimes.com.pk/>, 06 Oct 2016.

INDIA-CHINA

China Intends to Invest in India's Nuclear Power Sector

India is indicating that a major shift may be in store for its relations with China; a national think tank chaired by PM Modi has prioritized strategic dialogue between the countries, and the world's two most populous countries are set to discuss the construction of nuclear plants...as a major confidence-building measure between India and China, bilateral cooperation in the energy sector, especially nuclear power, will dominate discussions at the India-China Strategic Economic Dialogue to be held in October, 2016.... "Chinese companies have ample experience in nuclear energy and safe technology, and would like to take part in India's civil nuclear energy projects. China understands India's wish to develop clean energy, including nuclear energy, to adapt to climate change and contribute to global emissions reduction," said Liu Jinsong, China's ambassador to India. Jinsong further stated that energy cooperation was much more about business, and more importantly, strategic cooperation. It is set to be an important topic for early October.

India's new approach to multinational Chinese companies is evident from the fact that the strategic economic dialogue is happening after two years and recently the government think tank chaired by PM Modi has proposed altering the content of the dialogue. "China and India are strategic partners. As we are building a closer developmental partnership, mutual political trust

is crucial. Mutual political mutual trust means not viewing each other as threats; it means better integrating each other's development strategies, respecting and accommodating each other's concerns, and constructively handling differences," said Jinsong.

Source: <https://sputniknews.com/>, 27 Sep 2016.

RUSSIA-USA

Putin Suspends Nuclear Pact, Raising Stakes in Row with Washington

Russian President Putin on 03 October 2016 suspended a treaty with Washington on cleaning up weapons-grade plutonium, signaling he is willing to use nuclear disarmament as a new bargaining chip in disputes with the US over Ukraine and Syria. Starting in the last years of the Cold War, Russia and the US signed a series of accords to reduce the size of their nuclear arsenals, agreements that have so far survived intact despite a souring of US-Russian relations under Putin. But on 03 October, Putin issued a decree suspending an agreement, concluded in 2000, which bound the two sides to dispose of surplus plutonium originally intended for use in nuclear weapons. The Kremlin said it was taking that action in response to unfriendly acts by Washington. It made the announcement shortly before Washington said it was suspending talks with Russia on trying to end the violence in Syria.

The plutonium accord is not the cornerstone of post-Cold War US-Russia disarmament, and the practical implications from the suspension will be limited. But the suspension, and the linkage to disagreements on other issues, carries powerful symbolism. "Putin's decree could signal that other nuclear disarmament cooperation deals between the US and Russia are at risk of being undermined."..."The decision is likely an attempt to convey to Washington the price of cutting off dialogue on Syria and other issues." US State

India's new approach to multinational Chinese companies is evident from the fact that the strategic economic dialogue is happening after two years and recently the government think tank chaired by PM Modi has proposed altering the content of the dialogue.

Department spokesman Kirby said in a statement that bilateral contacts with Moscow over Syria were being suspended...as Russia had failed to live up to its commitments under a ceasefire agreement. Western diplomats say an end to the Syria talks leaves Moscow free to pursue its military operation in support of Syrian President Assad, but without a way to disentangle itself from a conflict which shows no sign of ending. Russia and the US are also at loggerheads over Ukraine. Washington, along with Europe, imposed sanctions on Russia after it annexed Ukraine's Crimea region in 2014 and backed pro-Moscow rebels in eastern Ukraine.

Putin submitted a draft law to parliament setting out under what conditions work under the plutonium accord could be resumed. Those conditions were a laundry list of Russian grievances towards the US They included Washington lifting the sanctions imposed on Russia over Ukraine, paying compensation to Moscow for the sanctions, and reducing the US military presence in NATO member state in Eastern Europe to the levels they were 16 years ago. Any of those steps would involve a complete U-turn in long-standing US policy. "The Obama administration has done everything in its power to destroy the atmosphere of trust which could have encouraged cooperation," the Russian foreign ministry said in a statement on the treaty's suspension. "The step Russia has been forced to take is not intended to worsen relations with the United States. We want Washington to understand that you cannot, with one hand, introduce sanctions against us where it can be done fairly painlessly for the Americans, and with the other hand continue selective cooperation in areas where it suits them."

The 2010 agreement, signed by Russian F.M. Lavrov and then-US Secretary of State Hillary Clinton, called on each side to dispose of 34 tonnes of plutonium by burning it in nuclear reactors. Clinton said at the time that there was enough of the material to make almost 17,000 nuclear

weapons. Both sides back then viewed the deal as a sign of increased cooperation between the two former Cold War adversaries. Russian officials alleged that Washington had failed to honor its side of the agreement. The Kremlin decree stated that, despite the suspension, Russia's surplus weapons-grade plutonium would not be put to military use.

Source: <http://www.reuters.com/>, 03 Oct 2016.

NUCLEAR PROLIFERATION

PAKISTAN

Nuclear Proliferation Linkages have Clear Pakistani Fingerprints, India Tells UN

In yet another stinging reply to Pakistan, India told United Nations there was a dangerous correlation between Pakistan's unchecked development of nuclear weapons and the close nexus between the State and jihadi groups. And this posed the greatest threat to the world.

The step Russia has been forced to take is not intended to worsen relations with the United States. We want Washington to understand that you cannot, with one hand, introduce sanctions against us where it can be done fairly painlessly for the Americans, and with the other hand continue selective cooperation in areas where it suits them.

Responding to a reference to Jammu and Kashmir by the Pakistan envoy to the CD, Tehmina Janjua, the Indian envoy, Venkatesh Verma said "the biggest threat to peace and stability comes from active promotion of terrorism and unbridled expansion of fissile material production and delivery systems for nuclear weapons+ under

the shadow of a deeply disturbing and deeply entrenched nexus between state entities and non-state actors."

The Indian response came after Janjua orally added a reference to the "Jammu and Kashmir dispute" to the Pakistan statement in the First Committee which concerns itself with disarmament and non-proliferation issues. Her remark was not in her written statement but added during her remarks. Verma responded by reminding the UN that "Nuclear proliferation linkages which are active today have clear Pakistan fingerprints." In the UN, the Pakistan diplomat trod a beaten path by offering a set of "proposals" that have long been rejected by India

– “simultaneous application of IAEA safeguards on all nuclear facilities and bilateral arrangement for their reciprocal inspections; simultaneous accession to NPT; regional CTBT,” etc. ...

Source: The Times of India, 11 Oct 2016.

NORTH KOREA

US Envoy Vows to Further Isolate N. Korea

The US envoy to the UN made a trip to the world's most fortified border separating the two Koreas on 09 October and vowed to further isolate the North over its nuclear weapons programme. Ms Power's trip to the heavily guarded Demilitarised Zone came amid growing concerns that Pyongyang may carry out another nuclear test or launch a long-range rocket to mark the anniversary of the founding of its ruling Workers' Party and the 10th anniversary of its first nuclear test on Oct 9, 2006. Its fifth and most powerful nuclear test was carried out on Foundation Day on Sept 9. A US-based monitoring group, 38 North, has said satellite imagery showed an increase in activity at the North's nuclear test site that could signal preparations for a new test.

Ms Power...told a press conference that the US will use its military as a deterrent to the North's threat. She said: “While Security Council resolutions are one tool in our toolbox... we are committed to using all the tools in our toolkit to address this serious threat including the diplomatic pressure that we are mobilising around the world to convince other nations to isolate the regime.”

Her visit to the region, which included a stop in Tokyo...comes amid a push for tougher Security Council sanctions after the North's fifth nuclear test in September, in defiance of a series of UN resolutions. The US and South Korea have been pushing governments around the world to take tougher actions to pressure the North, including expanding a trade ban on coal, fuel and other

resources. Ms Power also visited a settlement support centre for North Korean defectors....

Government insiders told Yonhap the trip to the Hanawon centre in Anseong, about 77km south of Seoul, is part of Washington's drive to make an issue of deplorable human rights abuses in North Korea. On arrival...the US ambassador said she wanted to directly hear the plight of those who have fled the North and, based on what she learnt, go back to New York to negotiate fresh sanctions with other countries. She had said it is deplorable that the North Korean regime threatens and abuses its people....09 October marked 10 years to the day that North Korea carried out its first nuclear test on Oct 9, 2006 – an underground detonation with such a low yield that it was widely seen as a failure.

North's weapons programme has progressed by leaps and bounds since then – despite rounds of increasingly tough international sanctions - and has notably accelerated under current leader Kim Jong Un. When North Korea first claimed to have launched a ballistic missile from a submarine in May, there was much derision because it appeared that the photographs had been doctored. Fast forward to August, and North Korea carried out a successful test from a submarine.

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Source: <http://www.straitstimes.com/>, 10 Oct 2016.

NUCLEAR DISARMAMENT

GENERAL

Marshall Islands Nuclear Arms Lawsuit Thrown Out by UN's Top Court

The UN's highest court has narrowly thrown out landmark cases brought by the Marshall Islands against India, Pakistan and Britain for allegedly

failing to halt the nuclear arms race. In majority and sharply divided decisions a 16-judge bench at the ICJ ruled there was no evidence that the islands' government had a prior dispute with any of the three nuclear powers or had sought negotiations on the issue. "The court upholds the objection to jurisdiction" raised by each of the countries, presiding judge Ronny Abraham said in separate rulings, and therefore the tribunal "cannot proceed to the merits of the case".

The Pacific island republic, population 55,000, was ground zero for a string of devastating nuclear tests on its pristine atolls between 1946-58, carried out by the US as the cold war arms race gathered pace. After the hearings the Marshalls government said it would "study the ruling", which is final and without avenue of appeal. "Obviously it's very disappointing," said Marshall Islands lawyer Phon van den Biesen. "It's a dispute that is clear to all of the world except for the judges here," he said, outside the courtroom in the ICJ's historic headquarters in the Peace Palace in The Hague.

Initially in 2014 the Marshalls had accused nine countries of failing to comply with the 1968 NPT, which seeks to inhibit the spread of atomic bombs. But the ICJ already refused to take up cases against the other countries – China, France, Israel, North Korea, Russia and the United States – as they have not recognised the court's jurisdiction. Israel has also never formally admitted to having nuclear weapons.

... At a March hearing the Marshalls' lawyers painted a vivid picture of the horrors caused by 67 nuclear tests, notably on the atolls of Bikini and Enewetak. "Several islands in my country were vaporised and others are estimated to remain uninhabitable for thousands of years," Tony deBrum, a former Marshall Islands foreign minister, told the court. "The entire sky turned blood-red," said deBrum, who was nine when he

witnessed the blasts.

Judge Abraham noted the archipelago, "by virtue of the suffering which its people endured as a result of it being used as a site for extensive nuclear testing, has special reasons for concern about nuclear disarmament". "But that fact does not remove the need to establish that the conditions for the court's jurisdiction are met," Abraham said. The so-called Operation Castle tests in March and April 1954 were particularly devastating and resulted in massive contamination due to nuclear fallout. The NPT commits all nuclear weapon states "to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date".

The ICJ action was a distraction as the islanders' real fight was with Washington. They contended the case was unrelated to the victims' claims for increased compensation, better healthcare and clean-ups to render the sites habitable again. The islands hoped however to reignite the debate over the disarmament talks, which have stalled over the past two decades.

Critics had argued however that the ICJ action was a distraction as the islanders' real fight was with Washington. They contended the case was unrelated to the victims' claims for increased compensation, better healthcare and clean-ups to render the sites habitable again. The islands hoped however to reignite the debate over the disarmament talks, which have stalled over the past two decades. "The Marshall Islands decided to bring these cases because they come from a notion that in the end nuclear weapons are the most horrific weapons on earth," said the government's lawyer Van den Biesen. ...

Source: <https://www.theguardian.com/>, 06 Oct 2016.

INDIA–PAKISTAN

What India, Pakistan can Learn from the Marshall Islands' Nuclear Disarmament Crusade

... Even though India and Pakistan have faced each other at the ICJ on three previous occasions, this was the first instance where both countries were seen arguing against the same claimant. Interestingly, while the judgments favouring India and Pakistan were approved by a narrow majority

of nine votes to seven, the margin of the judgment upholding the objections of the UK was tied with eight judges in favour and eight against.

All three respondent states individually contested the ICJ's jurisdiction based on the absence of a legal dispute with the Marshall Islands. The court upheld this argument and remarked: "In order for a dispute to exist, the two sides must hold clearly opposite views concerning the question of the performance or non-performance of certain international obligations". This requirement is normally met when a respondent was either 'aware' or 'could not have been unaware' that its views were 'positively opposed' by the applicant before launching the lawsuit. Despite the references made by the Marshall Islands to their own statements in multilateral fora on nuclear disarmament prior to the date of application, the court did not accept any inference of a direct opposition of views.

Further, the court was of the view that any eventuation of a 'dispute' during the course of the proceedings through an exchange of statements or claims cannot create a fresh, substantive dispute. Although there are no specific requirements under international law to formally frame a dispute prior to the filing of a claim, it is a basic litigation tactic to, at least, directly communicate their disagreements or allegations to the respondent to ensure that they do not deny their 'awareness' about the existence of a dispute. Any international lawyer would be surprised to hear that the Marshall Islands did not make any such efforts.

This undoubtedly is a significant finding, as noted by Judge Peter Tomca who dissented in finding of the absence of a dispute between the parties that "for the first time in nearly a century of adjudication the world court has dismissed a case on the ground that no dispute existed between

the parties". It is unfortunate that the court has departed from its previous flexible position on the question of existence of a dispute by recasting it as a strictly formalistic one, and thereby missing a great opportunity to dissuade the nuke powers from a potential razing and to stop the blue skies of earth appearing grey.

Of course, a binding judgment on the merits of interpreting Article VI of the NPT, which obligates nation states to "undertake to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a Treaty on general and complete disarmament under strict and effective international control," would have clearly made it to the blanket of customary international law that even the non-signatories would be ordained to comply with.

While India hailed the judgment as a vindication of its commitment to a 'responsible and principled approach to nuclear disarmament', Pakistan acknowledged the decision as a defeat for the detractors of their nuke program. Needless to say, the judgments pertain to a matter that lies at the centre of the current geopolitical tensions in the subcontinent.

Synchronicity of the Decision: Significantly, the Marshall Islands, with a population not more than the average sporting crowd at an India-Pakistan cricket match, hauled the two countries to the world court and succeeded in persuading almost half the quorum of the ICJ. While India hailed the judgment as a vindication of its commitment to a 'responsible and principled approach to nuclear disarmament', Pakistan acknowledged the decision as a defeat for the detractors of their nuke program. Needless to say, the judgments pertain to a matter that lies at the centre of the current geopolitical tensions in the subcontinent.

Although the likelihood of nuclear war between India and Pakistan is remote, the latest build-up of military activities across the border and, most importantly, the statements from the political and military leadership, especially in Pakistan, indicating the usage of nukes justifies this judicial crusade against the atomic arms race. Contrary

to India's no-first-use-policy, Pakistan maintains a first use stance, and has threatened India time and again with its nuclear weapons. The recurrent skirmishes along the Line of Control and the acrimonious war of words at multilateral platforms, although not a clear opposition of views with respect to the present applicant, demonstrate the denial to work towards a peaceful global order.

From the standpoint of international law, the principal legal organ of the UN was perhaps ill-equipped to make a binding ruling against the nuclear powers of the world, either individually or collectively. However, the Marshall Islands' endeavour definitely calls for the international community to resuscitate their obligations to actively engage in the non-proliferation and to ease off the existing nuclear programs.

Notwithstanding its rejection of jurisdiction, the court took a sanguine view by reiterating Article VI of NPT, which certainly uplifts the international legal obligation of nuclear disarmament. As the court opined in its 1996 advisory opinion on the legality of the threat or use of nuclear weapons, a country may use the nukes only in an extreme circumstance of self-defence, in which the very survival of a state would be at stake" The rivalrous nuclear powers should be mindful in their words and deeds of the rarity of circumstances expressed by the ICJ.

Source: <http://thewire.in/>, 10 Oct 2016.

KAZAKHSTAN

Kazakh President Establishes Prize for NW Free World and Global Security

Kazakh President Nazarbayev on 10 October announced the establishment of a new prize, the Nazarbayev Prize for a Nuclear Weapon Free World and Global Security, as well as his decision to award the first prize to King Abdullah II of Jordan for his contributions in this domain. The

proposal for President Nazarbayev, who had shut down the Semipalatinsk nuclear test site and renounced the world's fourth largest nuclear arsenal in the early 1990s, to establish a prize in support of leaders and activists contributing to global nuclear disarmament was first voiced by speakers at a recent international conference in Astana. ...

Addressing a conference, speakers including Vice President of Bulgaria Popova, President of the International Parliamentary Union Saber Chowdhury, Vice President of the OSCE Parliamentary Assembly Azay Guliyev from Azerbaijan and Parliamentary Vice-Minister for Foreign Affairs of Japan Motome Takisawa, urged the Kazakh President to consider establishing a new prize to acknowledge and support others in the quest for a nuclear weapon free world.

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In response, Nazarbayev, who has continued to push for global nuclear disarmament during the past quarter century, including through the establishment of the Central Asian Nuclear Weapons Free Zone, said he would consider such a move. ...

Nazarbayev said Oct 10 at the Akorda presidential residence, choosing an official ceremony of the presentation of credentials by newly appointed ambassadors to make the announcement.

"This is Kazakhstan's international prize. This year, King Abdullah II of Jordan has been chosen as the first laureate of this award. Later on, a special committee will be established, by the decision of which the prizes will be awarded to the laureates on the day of closing the Semipalatinsk test site on Aug. 29." King Abdullah's commitment to global peace and security has been notable through his efforts to accept more than 1.5 million Syrian refugees into Jordan and to turn the Middle East into a zone of peace, including through the establishment of a nuclear-weapons-free zone in the region....

.Source: <http://astanatimes.com/>, 11 Oct 2016.

MIDDLE EAST

UAE Calls for Middle East to be Free of Nuclear Weapons

The United Arab Emirates has urged the international community to take steps towards declaring the Middle East a zone free of nuclear weapons and weapons of mass destruction, to boost stability and security in the region. Ambassador Nusseibeh, the UAE's Permanent Representative to the UN, told the UN's First Committee's session on Disarmament and International Security 'the emirates still had grave concern over Iran's nuclear activities, despite the nuclear agreement reached with the P5+1 states last year. "We had hoped that the agreement on Iran's nuclear programme would encourage it to begin a new chapter and enhance confidence in the exclusive peaceful nature of its nuclear programme," Nusseibeh said in her speech at the UN headquarters in New York.

"However, Tehran continues to undermine the security of the region through its aggressive rhetoric, by supporting and arming militias, and its designation as a state sponsor of terrorism. Ambassador Nusseibeh reiterated the UAE's call on Iran to ensure its full compliance with international obligations and responsibilities under the Treaty on the NPT. He noted the particular importance of the NPT to the UAE, based on its commitment towards global security, its pursuit of a fixed national policy, and adoption of clear positions regarding disarmament and non-proliferation issues....

With the UAE's first nuclear power plant now under construction at Al Barakah in the Western Region, Ambassador Nusseibeh stressed the importance of pursuing a transparent approach to acquiring nuclear energy for peaceful uses and fulfilling the obligations of non-proliferation. She also

confirmed the importance the UAE attaches to full implementation of, the international conventions on disarmament and non-proliferation.

On security in the Middle East, Ambassador Nusseibeh referred to the UAE's disappointment in the failure of the 2015 Review Conference of the State Parties to Non-Proliferation Treaty, and the inability to convene a conference in 2012 on establishing a zone free of nuclear weapons and weapons of mass destruction in the Middle East. In her speech she urged Israel to join the NPT, as

it is the only state in the region that has not yet acceded to this Treaty. At the same time, she expressed concern over the lack of progress made towards bringing this treaty into force....

She urged states to "meet their international commitments, and to refrain from conducting any nuclear tests". Nusseibeh also voiced

concern at "North Korea's development of its nuclear and ballistic capacities and the carrying out of regular tests which threaten the security of its neighbours, as well as international peace and security, and which are clearly contrary to the most fundamental rules of international law". She concluded by calling on the international community to reach a consensus on developing the work of the committee to better promote international and regional peace and security.

Source: <http://7days.ae/>, 08 Oct 2016.

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NUCLEAR SAFETY

VIETNAM-CHINA

Vietnam Wary as China Commissions Nuclear Power Plants Near Border

The Vietnam Atomic Energy Institute is calling for the development of a radioactivity surveillance system in northern Vietnam after China started operation at three new nuclear power plants close

to the border. Nguyen Hao Quang, the vice director of the institute under the Ministry of Industry and Trade, said at a meeting that his organization has struggled to find funding for the system even though the government gave a nod to the project in 2010. The Chinese plants demand "emergency" actions, he said. "With the very strong nuclear activity in China across the border, we suggest that checkpoints be set up in the area to promptly detect any impacts," Quang said. The three Chinese plants went online last month in the provinces of Guangxi and Guangdong and in Hainan Island, with a total capacity of 2,250 megawatts. The plant in Guangxi is only 50 kilometers from the Vietnamese border and less than 500 kilometers from Hanoi.

China plans to expand its nuclear power network to 170 plants with a combined capacity of 195,000 megawatts by 2050, according to the IAEA. Nuclear safety experts say Vietnam needs to beef up its surveillance capacities and set up an exchange system to receive regular updates from China on the plants' operation. Le Van Hong, a researcher from the Vietnam Atomic Energy Institute, said Vietnam should devise measures to deal with "possible disasters." Vuong Huu Tan, the head of the Vietnam Agency for Radiation and Nuclear Safety, said Vietnam and China are both members of the Convention on Nuclear Safety, under which a country is entitled to demanding another to provide status updates on any plant. Tan said the agency is going to discuss with its Chinese counterpart about information exchange.

Vietnam itself plans the first two nuclear power plants in the central province of Ninh Thuan with technical assistance from Russia and Japan. But

following the nuclear disaster in Japan's Fukushima in 2011, the Vietnamese government ordered relevant agencies to thoroughly review safety measures and last year announced that it would delay work on the first nuclear plant until 2020.

Source: <http://e.vnexpress.net/>, 10 Oct 2016.

NUCLEAR SECURITY

GENERAL

UN Warns Jihadis are Plotting to Target Power Plants Across Europe

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The UN's nuclear watchdog warned that Islamist hackers will increasingly target what they see as vulnerable installations as they attempt to wreak maximum carnage on the continent. Their warning came after it emerged that an unnamed nuclear power plant was targeted by a militant cyber attack two years ago which caused disruption to its operations.

The furore comes after British prime minister Theresa May approved the building of a new nuclear plant at Hinkley Point by the Chinese, after initially appearing to falter over the deal. It has

Concerns about cyber attacks on nuclear sites have grown in recent years after the emergence of computer malware that can be used to attack industrial controls. ISIS is known to have a dedicated division of computer boffins devoted to spreading the terror group's vile propaganda abroad, which could be used to attempt hacking operations.

also emerged that the Brussels bombers, who targeted the Belgian capital's airport, had previously researched trying to take out a nuclear power plant in the country.

During a visit to Germany the head of the IAEA revealed how in one instance a terrorist had tried to smuggle highly enriched

uranium out of a power plant that could have been used to build a "dirty bomb". Yukiya Amano warned: "This is not an imaginary risk. This issue of cyber attacks on nuclear-related facilities or activities should be taken very seriously. "We

never know if we know everything or if it's the tip of the iceberg."

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Korea Hydro & Nuclear Power Co Ltd, which operates 23 nuclear reactors in South Korea, has already pledged to beef its up cyber security after non-critical data was stolen from its computer systems, although reactor operations were not at risk. And in April this year, German utility firm RWE increased its security after its Gundremmingen nuclear power plant was found to be infected with computer viruses. The company said they did not appear to have posed a threat to operations. Security experts say blowing up a nuclear reactor is beyond the skills of militant groups at present, but warned that the industry has vulnerabilities that could be exploited.

Mr Amano said the UN agency was helping countries increase cyber and overall nuclear security through training and a detailed database that included information from 131 countries, and by providing them with radiation detection devices. Since 2010, the IAEA said it had trained over 10,000 people in nuclear security, including police and border guards, and has given countries more than 3,000 mobile phone-sized instruments for detecting nuclear and other radioactive material.

Source: Nick Gutteridge, <http://www.express.co.uk>, 10 Oct 2016.

NUCLEAR WASTE MANAGEMENT

GENERAL

Scientists Discover 'Supramolecule' that could Help Reduce Nuclear Waste

Indiana University researchers have reported the first definitive evidence for a new molecular structure with potential applications to the safe storage of nuclear waste and reduction of chemicals that contaminate water and trigger large fish kills. The study... provides experimental proof for the existence of a chemical bond between two negatively charged molecules of bisulfate, or HSO₄.

The existence of this structure—a "supramolecule" with two negatively charged ions—was once regarded as impossible since it appears to defy a nearly 250-year-old chemical law that has recently come under new scrutiny.

"An anion-anion dimerization of bisulfate goes against simple expectations of Coulomb's law," said IU professor Amar Flood, who is the senior

author on the study. "But the structural evidence we present in this paper shows two hydroxy anions can in fact be chemically bonded. We believe the long-range repulsions between these anions are offset by short-range attractions."

... In molecular chemistry, two monomer molecules connected by a strong covalent bond are called a "dimer." (A polymer is a chain of many monomers.) In supramolecular chemistry, the dimers are connected by many weak non-covalent bonds. A negatively charged particle is an anion.

A key part of Coulomb's law is the idea that two molecules with the same charge create a repellent force that prevents chemical bonding—like two magnets with the same end put into close contact. But recently, experts have begun to argue that negatively charged molecules with hydrogen

Concerns about cyber attacks on nuclear sites have grown in recent years after the emergence of computer malware that can be used to attack industrial controls. ISIS is known to have a dedicated division of computer boffins devoted to spreading the terror group's vile propaganda abroad, which could be used to attempt hacking operations.

atoms, such as a bisulfate—composed of hydrogen, sulfur and oxygen - can also form viable chemical bonds.

“Although supramolecular chemistry started out as an effort to create new molecular hosts that hold on to complementary molecular guests through non-covalent bonds, the field has recently branched out to explore non-covalent interactions between the guests in order to create new ‘chemical species,’” Fatila said. The negatively charged bisulfate dimer in the IU study employs a self-complementary, anti-electrostatic hydrogen bond.

The molecule’s existence is made possible through encapsulation inside a pair of cyanostar macrocycles, a molecule previously developed by Flood’s lab at IU. Fatila and colleagues were trying to bind a single bisulfate molecule inside the

cyanostar; the presence of two negatively charged bisulfate ions was a surprise.

... The ability to produce a negatively charged bisulfate dimer might also advance the search for chemical solutions to several environmental challenges. Due to their ion-extraction properties, the molecules could potentially be used to remove sulfate ions from the process used to transform nuclear waste into storable solids—a method called vitrification, which is harmed by these ions—as well as to extract harmful phosphate ions from the environment. ... The new molecule in the study was detected using equipment at the IU Bloomington Department of Chemistry’s Nuclear Magnetic Resonance Facility, the Laboratory for Biological Mass Spectrometry and the IU Molecular Structure Center.

Source: <http://phys.org>, 06 Oct 2016.



Centre for Air Power Studies

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