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OPINION – Manpreet Sethi

Pakistan's Jugaad at Building Seabased Deterrence

As the world remained fixated on the developments unfolding in the Korean peninsula in the first quarter of this year, the second testing of a nuclear capable SLCM from a submerged platform by Pakistan received little attention. Called Babur 3, this has been described as a variant of the Babur cruise missiles that Pakistan has been developing with varied ranges and which can be launched from different platforms. Babur-3 has been attributed a range of 450 kms. According to Pakistani plans, this missile is to be deployed on the Agosta 90-B diesel electric submarines in order to grant the country a sort of sea-based second strike capability in order to enhance the country's nuclear deterrence.

A desire for sea-based deterrence is not unnatural for any nuclear weapons possessor. Such a capability is meant to signal to the adversary that even in the remote eventuality of it being able to carry out a 'disarming' first strike, retaliation would still be assured from the platforms hidden in the vast seas somewhere. Indeed, from the time of the Cold War this conventional wisdom has persisted. In fact, some countries like the

What is unnatural, however, in the efforts being made by Pakistan is the rather makeshift approach being taken to build such a capability. Building SSBNs is beyond Pakistan's material, financial and technological wherewithal at this time; neither is it possible to acquire such submarines from other countries. Though one can never discount the possibility of China providing it with an SSBN, the situation right now is that China itself does not have much to offer. It is still in the process of building its own Jin class SSBNs in numbers that it considers necessary for its own deterrence.

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United Kingdom have opted to retain only the sea-based leg of their nuclear arsenal in the form of 3-4 SSBNs. Therefore, it is but natural that Pakistan too is striving for such a competence in order to buttress its second strike capability. What is unnatural, however, in the efforts being made by Pakistan is the rather makeshift approach being taken to build such a capability. Building SSBNs is beyond Pakistan's material, financial and technological wherewithal

Though one can never discount the possibility of China providing it with an SSBN, the situation right now is that China itself does not have much to offer. It is still in the process of building its own Jin class SSBNs in numbers that it considers necessary for its own deterrence. Its earlier SSBNs, the Xia class, had not seen much success given that those boats never really went for any deterrent patrols. China could decide to give these old vessels to Pakistan for training purposes, but there will be a cost involved in terms of international reaction to such an action since it is taboo to provide nuclear capable weapon systems to other countries. In fact, such a Chinese transfer would particularly evoke an adverse reaction given Pakistan's pretty blemished proliferation history. Under the circumstances, it is quite understandable that Pakistan has opted to make do with what it has for now. Jugaad is a particularly South Asian phenomenon that embodies the ability to make out-of-the-box, innovative adjustments to achieve something that is otherwise beyond reach. So, Pakistan's attempt at acquiring a second strike capability is by achieving an innovative fix that simply works around the problem to imaginatively use its extant resources and capabilities at the least cost. However, a jugaad is just that – a jugaad, a makeshift fix.

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While, prime facie, it appears that Pakistan would be able to reap the benefits of ambiguity by mixing the missiles and thereby seek to deter India from taking action against its submarines in the fear that they may be carrying nuclear weapons, in times of crisis such a situation could be prone to a high level of instability. Inadvertent escalation would bring no advantage to the country.

The only gain from such a strategy for Pakistan could be if the acquisition of this second strike capability gives it the assurance of greater survivability of its nuclear arsenal and reduces its pressures to use or lose its arsenal. In case this happens, it would enhance strategic stability. But there is a big question mark on whether Rawalpindi desires such stability at all. Given that its nuclear deterrence strategy is premised on keeping alive the threat of chance, or the risk of escalation, the potential SLCM deployments are only meant to raise risks for India, not mitigate them for its own self. Unfortunately though, one must never forget that

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Pakistan has opted to use the diesel powered submarines that it possesses, but these are not particularly survivable platforms. The basic attribute of an SSBN that makes it ideal for nuclear deterrence is its ability to stay submerged over long periods of time, and hence keep its position

unknown. So, Pakistan is seeking notional survivability through an essentially non-survivable platform.

A second problem that will arise is from a mixing up of nuclear and conventional missiles on these submarines. Unless Pakistan decides to designate all its submarines of this class for nuclear delivery – which would obviously deprive its Navy of an effective conventional boat (and it does plan to get 8 more modified S20 Yuan class diesel electric submarines from China) – mixing the two kinds of missiles on the submarines would only complicate Pakistan's own

nuclear strategy. While, prime facie, it appears that Pakistan would be able to reap the benefits of ambiguity by mixing the missiles and thereby seek to deter India from taking action against its submarines in the fear that they may be carrying nuclear weapons, in times of crisis such a situation could be prone to a high level of instability. Inadvertent escalation would bring no advantage to the country.

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nuclear risks equally affect both players. Nay, they have a bearing beyond the direct players and this jugaad should be a matter of wider concern beyond South Asia.

Source: <http://capsindia.org/>, 05 May 2018.

OPINION – Anushree Dutta

Evolving PLA Rocket Force: Some Observations

China is in the midst of sweeping military reforms that will affect the force structure, administration, command and control mechanisms of the PLA. Among the major steps taken is the creation of the PLA Rocket Force (PLARF), which replaced the former Second Artillery that controls China's nuclear forces and land-based ballistic and cruise missiles.

The Gulf War was the major benchmark for the modernization of the Chinese military. According to military and strategic experts around the world stress the importance that China was attracted to the technical-military power shown by the US in Gulf War. It gave a new focus to China's military modernization involving such developments as the reprioritizing of the modernization program to give priority to developing the air force and the navy and its missile development program. The immediate result was the enhanced accuracy of medium range missile of the sort that was fired near Taiwan in March 1996.

During the Gulf War, China was convinced that it could no longer base its defence on the weight of numbers by looking at the use of precision weapons in Operation Desert Storm by the Americans. Another event which gave a new turn in its modernization process is when the PLA was hectoring Taiwan with missile tests in 1996. China had to back down. The collapse of the Soviet Union persuaded China's leaders that an arms race with the world's only superpower could squander enough money to pose a threat to the party's grip. China made efforts into affordable "asymmetric"

weapons. This unorthodox strategy has made the PLA's progress harder to measure. Thus, China's analysis of the 1990–91 Gulf War provided further motivation for transforming the PLA so that it would be better prepared for future conflicts along China's periphery.

Against this backdrop of the modernization process, Jiang Zemin's "Military Strategic Guidelines for the New Period," promulgated in January 1993, reflected this assessment and codified these imperatives. Following Jiang's speech to an enlarged CMC meeting in December 1995, Chinese "army building" has been guided by the "Two Transformations" policy line, which calls for the PLA to prepare to win "limited local wars under high-technology conditions," emphasize quality over quantity, and shift from being personnel-intensive to being science- and technology-intensive.³ China took immediate

steps to update its military technology, generally through purchasing the most-advanced Soviet hardware.

Strapped for cash, Russia was eager to make deals, and didn't worry overmuch about the long-range

consequences of technology transfer. China also attempted to acquire technology with military applications from Europe, but sanctions associated with the Tiananmen Square massacre hamstrung this effort. Finally, China accelerated efforts to increase the sophistication of research and development in its own military-industrial base.

Within a few years, China's nascent conventional missile capability reached the forefront of its coercive diplomacy toward Taiwan. During the ensuing 1995–96 Taiwan Strait Crisis, the conventional missile force conducted two "large scale conventional deterrence firing exercises." These exercises included a total of 10 SRBM launches into designated waters off the Northern and Southern Taiwan ports of Keelung and Kaohsiung.

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In any case, during the next few years, plans were apparently implemented for the SAF to begin establishing five SRBM brigades opposite Taiwan. Still another important milestone with implications for the development of the SA's conventional missions and capabilities came in 2002, when China updated the "Military Strategic Guidelines" that were issued almost a decade earlier.

In revising the guidelines, President Hu Jintao directed the PLA to focus on "local wars under informatized conditions," meaning that the PLA had to improve the utilization of information technology and networks and be prepared to degrade or deny an adversary's capability to use its own information technology and networks.

The development of China's conventional missile force has subsequently been driven by several factors. These include a desire to influence politics in Taiwan and deter US intervention in a regional crisis or conflict and the relative advantages offered by emphasizing missile force modernization rather than relying primarily on the development of capabilities such as stealth aircraft to conduct precision strikes.

Further changes took place on the eve of 2016 as the SAC was recommissioned as the PLARF on December 31, 2015. Additionally, the PLARF was elevated from an independent branch to the fourth military service alongside the PLA, PLAN, and PLAAF. Though the decision to reconstitute the PLARF as a military service indicates the importance China puts on maintaining modern missile forces, at this point it seems unlikely that the PLARF's roles and responsibilities will differ substantially from the SAF.

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China seems to have adapted to the concept of A2/AD9. The A2/AD concepts are extremely similar to the application of what is known in the US as A2/AD capabilities. The applications of these concepts are similar to the actions that preventing the outside power (such as the US) from entering into a theatre and operating freely within a theatre.

Implications of the PLA Rocket Force: The changing nuclear dynamics around the world especially with China on growing conflicts with its neighbours on issues such as South China Sea and East China Sea China seems to shift away from minimum deterrence to that of limited deterrence. 7 In view of this, China seems to be moving from a strategy of simply possessing warheads as a form of deterrence to that of a strategy which favors

a build-up of capabilities to deter any type of threat.

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The DF 21D which is formidable an anti-access weapon is theoretically capable of credible performance with respect to its assessed increased range and payload.¹¹The DF-21D is developed by China Changfeng Mechanics and Electronics Technology Academy. The latest DF-21D was said to be the world's first ASBM. The DF-26 is an IRBM.

The standard land attack DF-26 missile is nicknamed the "Guam Killer" because it would be used to barrage the American island stronghold and other US bases in the region during a conflict. It has a range of roughly 2,000 to 2,500 miles. So an anti-ship variant of the DF-26 would likely have over double the range of the DF-21D. It still isn't clear what the operational status is of the anti-

ship variant of the DF-26, but it is clearly an ongoing program for the Chinese military. Seeing that the DF-26 anti-ship missile concept would not be feasible without robust long-range naval targeting capabilities, its very existence is an indication that China has progressed significantly in this area over the last seven years or so.

Cruise missiles often do not receive the same attention as ballistic missiles but they serve as both a method of delivering nuclear weapons and can provide precision strikes with conventional weapons. As such, they are as important – if not more important in terms of probable use and the ability to conduct lethal attacks – than most SRBMs and MRBMs without high-yield nuclear weapons.

Indeed, cruise missiles form a vital part of China's A2/AD concept and present a serious threat to any force that engages the PLA in battle. The PLA has a wide variety of cruise missiles that can be launched from land, air, sea, and sub-surface platforms.¹⁵ Cruise missiles have several advantages over ballistic missiles; they can be updated during flight on battlefield changes, their low flight altitude makes them very stealthy against air defense radars, and fuel efficient turbofan engines allow cruise missiles to be lighter and cheaper than their ballistic counterparts.

The flexibility of the DH-10 is its greatest strength. The 1550 mile-ranged H-6K bomber can carry 7 KD-20s (the DH-10's air launched variant), giving the PLAAF the ability to reach Pacific targets distant as Hawaii. The next generation of this family will be the YJ-100, a proposed DH-10 anti-ship variant that will have an on-board radar and 800km range, potentially China's answer to the US Long Range Anti-ship Missile.

More broadly, future Chinese cruise missiles are likely to branch off into two families, one optimized for stealth, and the other focused on hypersonic

flight. China is already investing large amounts of money into hypersonic engines and stealth technology; stealthy cruise missiles would be used to achieve operational surprise while hypersonic missiles would run past heavy enemy defenses. Other advancements would likely include electromagnetic attack technology, data links and distributed sensors/networks and improved AI to autonomously hunt targets in denied environments.

The operational flexibility of PLA rocket force gives China to fight a successful limited or theater war. The PLA Rocket force gives flexibility to engage

targets on land sea and air in the entire battle space from Arabian Sea to Malacca Strait. It is a force multiplier and has the potential to disrupt mobilization, buildup and concentration of forces for offensive and defensive military maneuver. It can achieve simultaneity of operations by striking targets along the tactical

battlefield area, strategic lines of communication and battle space to erode war waging capability.

China is rapidly improving infrastructure in the Sino-Indian border region as part of development plans for Tibet as well as prepare for possible defensive or offensive operations. China has constructed roads along the disputed areas, built airbases and logistics sites that will facilitate easy deployment of its military and operations in the difficult terrain if war breaks out. India too has improved infrastructure on its side of the border and deployed additional military forces.

The infrastructure and logistics build-up shall double up as base support for the PLA to facilitate military operations. The modernisation of the communication network in terms of fibre optic cable and satellite communication indicates an up gradation of the command and control elements capable of conducting operations effectively and sustaining increased force levels in the future. Tactical / strategic missiles can be

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moved up and preserved in the TAR, thus maintaining surprise and deception, besides achieving increase in engagement ranges covering complete India, South Asia and much of Central Asia.

Conclusion: While the Gulf War, was one of the lessons which was learnt by most militaries in the world that the idea of the prowess of the military being dependent on its manpower is an idea of the past. China, in particular, took these lessons to heart in their modernization drive, focusing on enhancing its capabilities in other domains of warfare, focusing more on its modernization drives to ensure that the efficiency of the PLA, PLAN, PLAAF and the PLA Rocket Forces will be the deciding factor in future confrontations.

The PLARF is an elite branch of China's military. The PLARF is becoming increasingly versatile as its missiles have become smaller, more powerful, and more accurate. The modernization of the PLARF can be seen as one of the more significant drives in its modernization as a means of creating an effective deterrent against any threat.

The PLARF can also be seen as an extension of China's strategic interests and how it intends to protect those from encroachment or international pressures in the future, signaling its clear military dominance, showcasing not only its ability to protect its own strategic interests now, but also making room for an expansion of the same in the near future. Therefore, China has built its Rocket Forces, keeping the need of protecting its interests as its number one priority, while at the same time acting as an effective deterrent against any perceived

aggression from those it considers its adversaries.

Source: <https://www.eurasiareview.com/>, 10 May 2018.

OPINION – Amir Nadeem

Why hasn't Pakistani Nuclear Deterrence been Successful?

The following text attempts to mark the difference between symmetry, capability, deterrence and power. Through ontological demarcation among these concepts, it argues that Pakistan's obsession like pursuit to attain and subsequently sustain the parity/symmetry in nuclear deterrence with India has weakened the overall prospects of power-equilibrium in Indo-Pak relations for an advantage to the latter against the former.

In a sharp contrast to the widely held strategic conception that Pakistan's alleged nuclear parity with India has diminished the effectiveness of the conventional deterrence in Indo-Pak relations, the text establishes that hyper-fixation on attaining the nuclear parity with India has generated a discourse of strategic-foreclosure which perpetually remains in operation in exclusion of other possible deterrent components. Such a strategic-foreclosure has evolved a clear historical pattern of incommensurability between conventional deterrence and nuclear deterrence.

The rhetorical assertion that Pakistan has a symmetrical balance with India in the domain of nuclear deterrence, which presupposes an asymmetry in other domains of deterrence in relation to India, is precisely the assertion and its

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subsequent strategic execution which has caused serious damage to power equilibrium in Indo-Pak relations. By harnessing all the vital resources and subsequently channelling them to sustain the symmetrical equation of nuclear capability with India, Pakistan is increasingly drifting towards an unprecedented disturbance of equilibrium in Indo-Pak relations and the wider South Asian region.

Capabilities and deterrence are developed to pursue certain objectives of national interest, including the nuclear capability. They are means to secure the foreign policy interests. Perhaps never in another time in history than in our contemporary situation, these capabilities have been harnessed to the unprecedented degree by states to preserve the collective way of living of a group of people.

At the turn of this century, the discourse of politics took a very radical shift which goes by the name of 'ontological-turn', wherein the infrastructure of politics represented by state and its all corresponding tangible and intangible capabilities externally and internally seemed to be engaged in singular perpetual effort to guard the supposed collective way of living of a group of people. Keeping in view this background, these assertions constitute rather precarious singularity of the Pakistani state whose' nuclear capability has played virtually no role in fending-off the hegemonic ambitions of different states to preserve the collective way of living of its people. In this context, the nuclear deterrence rather than being mean to an end has become an end in itself.

There is no discursive clarity regarding the ends which a mean of Pakistani nuclear deterrence is supposed to achieve other than preserving the borders of a geographical contiguous-landmass. The ends which this nuclear deterrence seeks to pursue are not ideational or value-oriented, rather these are incoherently-accumulated priorities which are seemed to be linked with some sort of

geographical status-quo with India.

In this context, the vital question is: Why Pakistani nuclear deterrence has not been successful to the degree equivalent with any other nuclear deterrence in the world, in order to secure the basic end of its foreign policy (namely, a sovereign foreign policy)?

Social is the composition of infinite constituent elements in a given geographical area inhabited by a group of people. Political and its corresponding state infrastructure maximises and manages the capability of those infinite elements which constitute the social. Therefore, every constituting element of the social does have its capability, which is pooled together by the political to develop a conventional and non-conventional capability of a given state. Such a capability develops a concept of the power of a given state.

The value of every constitutive element is relative to time and the

perceived others'/enemy's corresponding, constituting elements of capability. Nuclear capability is one of the constituting elements of the social which the political harnesses to project its capability which is: therefore, relative to the time and the perceived enemy. In Pakistani case, the over-all deterrence of state has been subjugated and reduced to the nuclear deterrence at an alarming degree. It stands as a sort of incommensurable, absolute entity in relation to other constituent elements of the deterrence such as economic, cultural and political etc.

Rather than being treated as a commensurable contributory element in securing the national interest, its deterrence is perceived generally as the quintessential singular factor regarding the conduct of Pakistani foreign policy. Therefore, due to this gross sequential-imbalance among the different contributory factors to deterrence particularly the nuclear deterrence, it has caused substantial attrition to the overall balance of power

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in Indo-Pak relationship. In other words, to maintain symmetry in nuclear deterrence with India, Pakistan's position in construing the alternative general power-equilibrium with India has been negatively affected by the advantage of India.

Neo-colonialism and Deterrence:

To what an extent, the Pakistani nuclear deterrence is normal in comparison to other nuclear deterrence states? By any strand of the argument or yardstick, the single differentiating variable between the nuclear deterrence of Pakistan and the nuclear deterrence of other states is the degree of effectiveness in which the efficient nuclear deterrence demonstrates the capability to deter the hegemonic ambitions of the other state. On such contrasting patterns, the degree of the effectiveness of Pakistani nuclear deterrence (by any standard of the measurement) is lower than any other state's nuclear deterrence in the world. Pakistan has remained a neo-colonial state despite having a nuclear-capability, wherein different states or alliances of the state particularly the Anglo-American alliance after WW-II effectively influenced the domestic and foreign policy of this country.

This feature is the negative hallmark which marks the substantial difference to the degree of uniqueness of the Pakistani nuclear deterrence, in relation to any other nuclear-deterrence state. Therefore, the nuclear deterrence of Pakistan is not a normal deterrence. By this effect, this nuclear deterrence is the contained-deterrence. It means that its deterrence is managed from without rather than within. This without influence is substantial, and its operation is effective to the degree wherein its impact depletes and subsequently perpetuates this depletion of the

autonomy of Pakistani nuclear deterrence.

In this backdrop, the autonomy of this Pakistani nuclear deterrence has been historically compromising since its very inception. Rather than pursuing the supposed ends of Pakistani foreign policy by harnessing this variable as a vital component of overall-capability, its own autonomy is degraded to the degree of mere-survival-level. In such a situation, the reverse is empirically appearing true in which a major goal of Pakistani foreign policy has been to restore the depleted degree of the nuclear-deterrence in order to secure parity/symmetry with Indian nuclear deterrence rather than the other way around.

Therefore, the nuclear deterrence of Pakistan needs to be democratised and pluralised so that the parity/symmetry could be incorporated and subsequently be harnessed in order to envision a viable power-equilibrium in Indo-Pak relations and the South Asian region. A holistic concept of deterrence should be developed which incorporates the nuclear deterrence also, in order to develop a regional power-equilibrium to check the regional hegemonic ambitions of India for sustainable peace.

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Source: <https://dailytimes.com.pk/>, 27 April 2018.

OPINION – Uday Bhaskar

20 Years After Pokhran II

It is 20 years since India made that momentous decision to cross the Rubicon, after keeping the nuclear option open for decades and living with considerable unease in the world's most complex security environment

The May 11, 1998 'Shakti' nuclear tests carried out by India (aka Pokhran II) under the leadership of

then PM Atal Bihari Vajpayee, who was heading the BJP led NDA I government, marked the arrival of the world's sixth de-facto nuclear weapon state and served to redress Delhi's WMD asymmetry apropos the regional strategic environment.

It is 20 years since India made that momentous decision to cross the Rubicon, after keeping the nuclear option open for decades and living with considerable unease in the world's most complex and opaque security environment. India had been grappling with a proximate nuclear challenge since October 1964 when China acquired its nuclear weapon capability and Beijing became the fifth member of the global nuclear club. Consequently India's strategic profile had to contend with this reality of a nuclear armed neighbor with whom it had a very strained relationship post the October 1962 border war.

India sought to redress this imbalance by carrying out a PNE in May 1974 but then PM Indira Gandhi refrained from weaponizing this capability – which at best was a technology demonstrator. This resulted in the USA imposing stringent technological sanctions against India and Delhi being ostracized by the larger US led western alliance.

Through the 1980's Pakistan pursued a covert nuclear weapon program, which was also enabled by China and this marked the beginning of Sino-Pak WMD cooperation that was unprecedented for its depth and opacity. Consequently by mid 1990 the Pakistan army had acquired a covert nuclear weapon and India's nuclear asymmetry and vulnerability became even more stark. This was exacerbated by the manner in which Pakistan used this nuclear capability as a shield to intensify its terror attacks against India, thereby patenting what has been described as nuclear weapon enabled terrorism (NWET).

Against such a dark nuclear clod, India was relatively alone in December 1991 when the Cold War ended with Boris Yeltsin astride a tank (the visual image that symbolized the collapse of the formidable Soviet Union) in dealing with this harsh new world. The USA, the remaining superpower at the time which was looming large and triumphant

having trampled Iraq in the war for Kuwait in January 1991, was determined to impose its template of nuclear non-proliferation. This iniquitous NPT sought to retain the sanctity of the nuclear club and the exclusive strategic capability that was accorded unto the five NWS members.

This framework was inimical to India's overall strategic and security profile and successive Indian Prime Ministers from Rajiv Gandhi to Narasimha Rao sought to redress the various coercive initiatives that were being imposed to fetter India and compel Delhi to renounce the nuclear capability in perpetuity – the central objective of the NP. India rejected the NPT as being the equivalent of 'nuclear apartheid.'

In the mid 1990's this US led pressure was increased and the Clinton administration unveiled its 'cap, roll-back and eliminate' strategy to compel India accede to two other treaties – the CTBT and the FMCT – which if entered into would have the same substantive impact as signing the NPT as a NNWS.

In December 1995 PM Narasimha Rao sought in vain to carry out a nuclear test and establish India as a de-facto NWS but this was foiled by the USA. The political disarray that followed in Delhi was not conducive to a nuclear weapon test and finally it was the determination of PM Vajpayee that led to India crossing the Rubicon on May 11, 1998. India had successfully demonstrated its strategic autonomy, albeit in a limited, restrained and responsible manner.

Almost immediately, after the second set of tests on May 13th, Delhi announced that it would not carry out any further tests (a unilateral moratorium) and adopted a NFU policy as the sixth nuclear weapon state – but outside the NPT. It is often asked as to what May 11, 1998 achieved for India and critics aver that it did not prevent Pakistan sponsored terrorism (Mumbai 2008), or for that matter the Chinese intrusion in Doklam was not averted.

The comparison is misleading. The fact that the USA has the world's most formidable WMD arsenal did not prevent 9/11 and the terror attack on New

York. The acquisition of nuclear weapons by PM Vajpayee had a core security objective – namely to ensure that India would never be subjected to any form of nuclear blackmail or intimidation. That objective has been achieved.

Source: <https://www.livemint.com/>, 11 May 2018.

OPINION – Harsh V. Pant, Yogesh Joshi

India's Nuclear Policy: China, Pakistan and Two Distinct Nuclear Trajectories

In May 1998, India and Pakistan conducted twentieth century's last nuclear tests. The events of May 1998 were seminal insofar as it created a triangular matrix of nuclear weapon states in South Asia – India, China and Pakistan – which shared not only disputed territorial borders but also deep historical animosities vis-à-vis one another. However, the India-China nuclear equation is much more stable than the India-Pakistan nuclear dyad. India and China have never issued a veiled or overt nuclear threat to each other. Nuclear blackmail does not figure in their military strategies vis-à-vis one another. On the other hand, all military crises between India and Pakistan have suffered from a nuclear overhang.

If Pakistan's penchant for nuclear risk-taking is apparent in its nuclear doctrine of full spectrum deterrence, India has been equally vocal in calling Pakistan's bluff. It stands to reason, therefore, that the India-Pakistan rather than the India-China nuclear dyad is often considered as a nuclear flashpoint. The difference in these two nuclear equations is not simply a matter of their nuclear and military strategies, however. It is equally a product of their unique nuclear histories.

India's nuclear history disproves the linear model of nuclear weapons proliferation where insecurity vis-à-vis a bigger and hostile nuclear power is the principal source of a state's motivation to pursue nuclear weapons as was the case with the Soviet Union, China and to a certain extent both the United Kingdom and France. The Indian case interpreted correctly, disproves the linear model of nuclear proliferation: Pakistan rather than China was the most important reason for India to

go nuclear. India's reaction to Chinese nuclear threat in the 1960s and the Pakistani nuclear threat in the 1980s was markedly different.

The Chinese nuclear test in October 1964 presented India its first nuclear adversary. It took India a decade to conduct its first nuclear test in May 1974. However, by that time,

Indian decision-makers were convinced that China "will not use nuclear weapons against India." After the 'peaceful nuclear explosion' of 1974, Indian decision-makers abstained from weaponizing its nascent nuclear weapons capability nor did they seek a nuclear weapon status. Until the mid-1980s,

India practiced a policy of 'nuclear refrain.' As the Pakistani nuclear program matured into an existential threat, India prepared for 'catalytic' response. In 1988, India decided to acquire a deliverable nuclear arsenal. Within a decade, it had not only operationalized the first leg

of its nuclear delivery capability based on fighter aircrafts but had also declared itself a nuclear weapon state with a series of nuclear tests in May 1998.

This 'differential response' can only be understood by taking into account not only the variation in India's perceptions of the Chinese and the

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India's nuclear history disproves the linear model of nuclear weapons proliferation where insecurity vis-à-vis a bigger and hostile nuclear power is the principal source of a state's motivation to pursue nuclear weapons as was the case with the Soviet Union, China and to a certain extent both the United Kingdom and France.

Pakistani nuclear threat respectively but also the methods which Indian decision-makers employed to counter them.

China's acquisition of a nuclear weapon capability did not fundamentally threaten Indian security as was the case with Pakistani nuclear weapons. First, rather than perceiving Chinese nuclear capability as a direct threat, New Delhi situated China's quest for nuclear weapons in the great power nuclear rivalry of the Cold War. The threat perception vis-à-vis Pakistan was entirely different: Islamabad's nuclear drive was considered as an existential threat given its historical penchant for revisionism in South Asia. Second, in the aftermath of the 1962 War, India learned that a robust conventional defence against China would help preserve the status quo on the border. Nuclear weapons were not essential for maintaining this territorial status quo. Even today, Indian military strategy vis-à-vis China remains largely conventional. Pakistan, on the other hand, had consistently challenged the territorial status quo even when it is a relatively inferior military power in the India-Pakistan dyad. In New Delhi's calculus, therefore, nuclear weapons in Pakistani possession would have only exacerbated latter's inclination for a military resolution of the territorial conflict.

This difference in New Delhi's threat perceptions of China and Pakistan is borne out in various military crises on the Sino-Indian and Indo-Pakistani border. Neither China nor India have ever issued a veiled or overt nuclear threat to each other in any of their military crises along the Himalayan border; it has remained purely conventional. However, since the Brasstacks crisis of 1986-87, Pakistan has always leveraged its nuclear arsenal to influence any Indian decision to pursue conventional operations across the border.

India's threat perceptions of Chinese and Pakistani nuclear capability therefore differed

substantially; so, have been the methods which India employed to counter them. Against China, India primarily relied on implicit nuclear security guarantees from the two great powers during the Cold War: the US and the Soviet Union. New Delhi's calculation was simple but profound: any use or threat of use of nuclear weapons by Beijing against India involved a risk of nuclear retaliation from the great powers. This minimal risk rather than absolute credibility of great power response was sufficient to deter the Chinese decision-makers. This assumed both rationality and restraint on Beijing's part. India's historical experiences vis-à-vis Pakistan however betrayed both these

assumptions. Pakistani nuclear capability was solely directed against New Delhi. Given its penchant for risk-taking, it also posed a fundamental threat to the Indian state. Therefore, to deter Pakistan, an indigenous nuclear capability was a must.

India's threat perceptions vis-à-vis China and Pakistan therefore explain the gradual evolution of India's nuclear weapons program in the first two decades after the Chinese nuclear tests in 1964 and the catalytic response to Pakistani nuclear program thereafter. Not all nuclear adversaries are the same after all. Two decades after Pokhran-II, New Delhi's nuclear policy is still coming to terms with two different kinds of adversaries on its frontiers, despite occasional talks of a 'two front' war.

Source: Observer Research Foundation, 11 May 2018.

OPINION – Bharat Karnad

India Must Revise its Nuclear Policy and Keep its Strategy Opaque

The Shakti series of underground tests 20 years ago were the last, stifled, hurrah of the Indian nuclear weapons programme. Stifled because the thermonuclear device tested on May 11, 1998 was

a dud, and the last hurrah because the weapons unit at the Bhabha Atomic Research Centre, Trombay, thereafter, went into eclipse, its best and brightest abandoning it. After all, what scientific and technological challenge is there when there are no

After all, what scientific and technological challenge is there when there are no advanced fission, fusion and tailored-yield armaments to design and develop? Worse, official Indian thinking on deterrence is contradictory. Mired in minimalism, it has relied on threats of "massive retaliation."

advanced fission, fusion and tailored-yield armaments to design and develop? Worse, official Indian thinking on deterrence is contradictory. Mired in minimalism, it has relied on threats of "massive retaliation". This mandates responding with a large number of nuclear bombs to dissuade Pakistan from nuclear "first use" and, therefore, an extensive nuclear armoury of our own. So, the nuclear deterrent cannot be "minimum".

The confused nuclear milieu has been obtained by the Indian government under three prime ministers — Atal Bihari Vajpayee, Manmohan Singh and Narendra Modi. With the 'no testing' pre-condition of the 2008 nuclear deal with the United States in mind, it has decided that, the country's strategic arsenal is perfectly adequate now and

In lieu of nuclear testing, which Indian prime ministers have not resumed, two things need to be done to configure and laboratory-test sophisticated thermonuclear weapons designs. The laser inertial confinement fusion facility at the Centre for Advanced Technology, Indore, needs to be refurbished on a war-footing, and a dual-axis radiographic hydrodynamic test facility constructed.

in the future with just the 20 kiloton weapon/warhead, the only tested and proven weapon in the inventory. Also, under American pressure, the Indian government has put the brakes on the 12,000km-range ICBM project and the testing of the indigenous MIRV (multiple independently-targetable re-entry vehicles) technology to launch several warheads from a single missile that's been available for the last 15 years.

In this period, countries who prize their strategic security accelerated their capability build-up. North Korea shrugged off US pressure, answered American bullying with brinkmanship of its own, successfully tested a two-stage 250-350 KT hydrogen bomb, for good measure acquired the

Hwasong ICBMs able to hit US cities, and silenced US President Donald Trump. Nearer home, Pakistan, ahead of India with 130 nuclear weapons/warheads and counting, boasts of the most rapidly growing nuclear arsenal. It has four 50MW weapon-

grade plutonium producing reactors operating in Khushab. Meanwhile, India has yet to build the second 100MW Dhruva WgPu reactor sanctioned in the mid-1990s. North Korea and Pakistan are where they are courtesy the active "rogue nuclear triad" run by China which guarantees that Islamabad too will brandish thermonuclear weapons of Chinese provenance.

Delhi eschews anything similarly disruptive (like nuclear missile-arming Vietnam) because our leaders are more intent on polishing the country's reputation as a "responsible power" and winning plaudits from the US for showing "restraint" than in advancing national interest. So, the country's strategic options end up being hostage to the interests of foreign powers.

India's do-nothing policy has eroded its relative security, and its stature in Asia and the world as a strategically autonomous and independent-minded country.

India can recover its strategic policy freedom by taking several steps. It should fast forward the second Dhruva military reactor and ICBM development, and test-fire the MIRV-ed Agni-5s. In lieu of nuclear testing, which Indian prime ministers have not resumed, two things need to be done to configure and laboratory-test sophisticated thermonuclear weapons designs. The laser inertial confinement fusion facility at the Centre for Advanced Technology, Indore, needs to be refurbished on a war-footing, and a dual-

axis radiographic hydrodynamic test facility constructed.

As regards the software of hard nuclear power, the nuclear doctrine has to be revised — something promised in the BJP's 2014 election manifesto. Without much ado, the newly-founded Defence Planning Committee should rework the doctrine to stress flexible response, with ambiguity enhanced by publicising the fact of doctrinal revision and the jettisoning of the "no first use" principle, but nothing else. India will thus join the rest of the nuclear weapons crowd in keeping every aspect of its nuclear policy, doctrine and strategy opaque. There are good reasons why, other than in India, there's no enthusiasm for nuclear "transparency".

In keeping, moreover, with the passive-defensive mindset of the government and expressly to throttle aggression by a militarily superior China, technologically simple, easy-to-produce, atomic demolition munitions have to be quickly developed for placement in the Himalayan passes that the Chinese Liberation Army is likely to use, backed by forward-deployed canisterised Agni-5 missiles for launch on warning. The onus for India's nuclear first use will thus rest entirely with China.

Source: www.hindustantimes.com/, 11 May 2018.

OPINION – Andrew Buncombe

Iran Nuclear Deal: What Happens Now Donald Trump has Pulled the US Out of Accord?

What are the options for Donald Trump?

Under the terms of the deal, the US has issued waivers to longstanding sanctions imposed long before Mr Trump came to office that have sought to punish Iran for its nuclear programme. Iran, in turn, restricted its programme and allowed more international inspections. The US president must decide whether to renew the waivers that eased

one basket of sanctions: those on Iran's central bank, intended to hit Iranian oil exports, and which would force global companies to reduce their purchases of oil from Iran. The Associated Press said another basket of sanctions' waivers are up for renewal on July 11, and three of those focus on more than 400 specific Iranian companies, individuals and business sectors.

One of Mr Trump's options, being called "the nuclear option" by some experts, would re-impose all the sanctions at once. That would put the US in immediate violation of the deal's terms, which say sanctions remain lifted as long as Iran is complying with its terms. Almost everyone, including US Secretary of State Mike Pompeo, has said Iran is complying. The most recent

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IAEA compliance report was in February

What is Mr Trump's motivation?

Mr Trump has never hidden his distaste for the Iran nuclear deal, which he has referred to as the "worst deal ever". At the same time, he has expressed a willingness to work to improve the arrangement. He has particularly objected the accord's sunset clause, which allows Iran to resume part of its nuclear programme after 2025.

While Mr Trump may have concerns about the deal, many observers believe he is being put under pressure from hawks in his party who never liked the deal and, figures such as Israeli leader Benjamin Netanyahu, who considers Iran an existential threat. The prime minister of the only country in Middle East generally believed to already possess nuclear weapons, claimed Tehran was in breach of the 2015 deal and had been hiding its true intentions from the other signatories to the deal. It also seems Mr Trump likes the idea of being able to turn to his core supporters and say: "Look, I've delivered on another promise".

Yet, there is concern that Mr Trump has not thought through where this will lead. In a conference call

for the media, organised by Diplomacy First, a group of former diplomats and officials seeking to retain US participation in the deal, Jake Sullivan, former Deputy Assistant to Barack Obama and a senior advisor during the negotiations, said: "What will be immediately obvious after May 12th is that President Trump is throwing the United States and the Iran deal into a new nuclear crisis, essentially to cater to his political base, and neither the president nor his administration appear to have any strategy or plan for what comes next." ...

What will Iran do?

Iran wants the US to remain in the deal, which has helped improve the country's economy and strengthened the hand of relative political moderates such as the nation's president, Hassan Rouhani. Mr Rouhani said the US would regret any decision to leave the deal and vowed to resist US pressure. "If they want to make sure that we are not after a nuclear bomb, we have said repeatedly that we are not and we will not be," he said in a televised speech, according to Reuters. "But if they want to weaken Iran and limit its influence whether in the region or globally, Iran will fiercely resist."

Observers believe the hand of hardliners would be strengthened if the US pulled out. Tehran has already said it would step up its nuclear activities if sanctions were to be reimposed. It would also increase its testing of missiles and support for militant groups. "We are not worried about America's cruel decisions...We are prepared for all scenarios and no change will occur in our lives next week," said Mr Rouhani. "If we can get what we want from a deal without America, then Iran will continue to remain committed to the deal. But if not, Tehran will continue its own path."

The AP highlighted that while Iran would still technically remain obligated to permit inspections as a signatory of the NPT, it would no longer be

bound by the more rigorous inspections regime by the IAEA that it agreed to in the deal. That regime included the so-called Additional Protocol, which expanded the IAEA's access to sites in Iran, including giving inspectors insight into all parts of the nuclear fuel cycle, access on short notice to all buildings at an acknowledged nuclear site, and the right to obtain samples from military sites...

What is Mr Trump most likely to do?

One thing the US president has proven since he entered the White House, is that it can be a hopeless task to try and guess his actions. Mr Sullivan, the former Obama advisor, said "all signs right now point to the administration deciding not to issue the waivers that are coming up for renewal on May 12th, 2018". But things are not necessarily

so black and white. There are at least three possible steps Mr Trump could take.

Firstly, he could sign the waiver again as he has done every four months since taking office, but add a series of demands and caveats. This would keep the

deal alive and allow those European nations who have said they will work to fix the deal, to try to do so. Secondly, he could refuse to sign the waiver but not push immediately for the reintroduction of sanctions.

Anshel Pfeffer of Haartez, wrote: "The sanctions that target Iran's central bank, and are mainly aimed at hampering its international oil deals, do not come into effect for another 180 days - effectively giving the administration and the other signatories five more months to search for a compromise. "At this point, the Europeans will be scrambling in both directions: To try to find a solution that could still make Trump backtrack and sign the waivers, better late than never; and, at the same time, prevent the Iranians from pulling out of the JCPOA."

The third scenario, the one that Iran, Europe and the other signatories of the deal want to avoid is, Mr Trump refusing to sign the waiver and pushing

President Trump is throwing the United States and the Iran deal into a new nuclear crisis, essentially to cater to his political base, and neither the president nor his administration appear to have any strategy or plan for what comes next.

ahead with new US sanctions, putting Washington at sharp odds with its supposed allies in Europe. "Trump could go to the UN and start the process demanding UN sanctions," said Jeffrey Lewis, director of the East Asia Nonproliferation Programme at the Middlebury Institute of International Studies. "I think this is the least likely as it would trigger a major crisis."

Source: <https://www.independent.co.uk>, 09 May 2018.

OPINION – *The Guardian*

Trump Creates a Narrative for War

Donald Trump's voice in foreign affairs is one that slips between brash arrogance and oily smugness. He touts supremacy from behind thinly concealed contempt. In withdrawing America from the Iran nuclear agreement ...Mr Trump risks pushing Iran out into the cold, triggering a nuclear arms race in the Middle East and handing power to the hardliners in Tehran. In place of the UN-approved deal is little more than Mr Trump's bombastic promises of greater American independence and fewer unnecessary constraints.

Mr Trump all but declared war on Iran in a speech largely estranged from fact. Contrary to his claims, Iran has abided by the agreement, as UN weapons inspectors attest. Tehran is not on the "cusp of acquiring the world's most dangerous weapons". In fact the deal allows Iran to continue to enrich uranium – but it is neither allowed nor technically able to use this process to produce weapons-grade uranium. Under the agreement, Iran cannot reprocess plutonium either, an alternative path to a nuclear explosive. Mr Trump's invective should surprise no one; he relies on assertions that reinforce prejudices but have no basis in truth.

The premise of the JCPOA was to allow Iran to benefit from the global economy in exchange for denuclearisation. It is now incumbent on the US to, in Mr Trump's words, find a "lasting solution to the Iranian nuclear threat". Yet there is no plan forthcoming from the White House. The absence of American leadership in the world will mean that the Europeans – principally the main powers of the UK, Germany and France – will have to work reluctantly with Russia and China to uphold the agreement. This will require protection for firms and banks engaged in trade and financial transactions with Iran. Without Washington's support this may mean resorting to non-dollar deals to evade US sanctions. Like his rejection

of the Paris climate deal, Mr Trump opposed the Iranian nuclear deal not because he understood the details and consequences of a complex agreement's terms but because he wanted, scandalously, to signal that former US president Barack Obama did not necessarily have US interests at heart when he negotiated the agreement. When international agreements are not insulated from partisanship by constitutional principle, then deals are likely to be stop-gap solutions. North Korea will understand this lesson only too well.

The US is the author of Iran's success. Its disastrous invasion of Iraq saw Iranian influence grow along a Shia crescent in the northern Middle East. Tehran's proxies prop up the murderous dictatorship of

Bashar al-Assad in Syria and have emerged as powerful political blocks in Lebanon and Iraq. The anti-Iranian outbursts by Mr Trump and his team create a narrative in which war with Tehran is the only viable policy.

Iran, Europe and the other signatories of the deal want to avoid is, Mr Trump refusing to sign the waiver and pushing ahead with new US sanctions, putting Washington at sharp odds with its supposed allies in Europe.

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Goading Iran's hardliners to restart weapons programmes is an extremely high-risk strategy likely to trigger to a military confrontation between the US and Iran and probably the Syrian regime. The problem is that such a conflict would most likely also involve Russia and Israel, the latter an undeclared nuclear power and Iran's most vocal critic. Meanwhile Saudi Arabia is pushing for the right to either enrich or reprocess nuclear material. If it is allowed to then no doubt the United Arab Emirates, with its history of turning a blind eye to illicit nuclear weapons programmes, would want to do the same. Mr Trump is opening a Pandora's box in the Middle East. The world needs to convince him to close it.

Source: <https://www.theguardian.com/>, 09 May 2018.

OPINION – Justin Worland

How Pulling Out of the Iran Nuclear Deal Could Hurt the US Economy

President Donald Trump promised crippling sanctions targeting Iran and anyone that helps develop its nuclear program as he announced the US will withdraw from the Iran nuclear deal. "We will be instituting the highest level of economic sanction," Trump said in remarks at the White House. "Any nation that helps Iran in its quest for nuclear weapons could also be strongly sanctioned by the United States."

But one country the sanctions could also hurt that he didn't mention: the United States.

The new sanctions will target the Iranian oil sector, reducing energy companies' business with Iran and increasing the price of oil. But the reduced Iranian supply could lead to sustained high oil

prices and further geopolitical instability, in turn contributing to inflation and slowing economic growth at home...

Goading Iran's hardliners to restart weapons programmes is an extremely high-risk strategy likely to trigger to a military confrontation between the US and Iran and probably the Syrian regime. The problem is that such a conflict would most likely also involve Russia and Israel, the latter an undeclared nuclear power and Iran's most vocal critic.

The consequences of withdrawing from the agreement may not be clear in the short term. In fact, Iranian oil production will likely remain steady or even increase as foreign companies try to establish a higher baseline from which to negotiate reductions.

But the effect of sanctions will likely pick up as sanctions take effect, analysts say. A report from Barclay's bank suggests that Iranian oil supply could be reduced by up to 600,000 barrels per day, approximately a third of its exports in 2016. The country was the world's fifth greatest oil producer in 2017.

The prospect of losing Iranian oil supply is one of many factors that has led prices of the commodity to rise rapidly in recent months to more than \$70 a barrel, up nearly 50% from over a year ago. Falling production in Venezuela amidst the country's political upheaval, general geopolitical instability in the Middle East and cuts to production orchestrated by OPEC and Saudi Arabia have all contributed to high prices.

Energy companies in the US could potentially make up for some the supply difficulties by increasing

production of abundant shale and offshore oil. Indeed, some analysts say they expect the US supply could stem the effects of lost Iranian supply.

But those companies face their own set of challenges. The US oil and gas industry faces a labor shortage particularly in some of its high-growth regions and the industry has struggled to build the pipeline infrastructure necessary to ship their product around the country. The companies

are likely to spend additional revenue from higher prices on share buybacks, distributions to shareholders and paying down debts, says Sharenow.

Americans consumers may soon notice the pinch. Retail gas prices have ticked up and are expected to be at the highest summer levels in four years, according to a projection from the Energy Information Administration. Consumers in the past have cut spending as gas prices eat into their discretionary budget.

The White House appears aware of the threat that rising oil prices pose to the economic growth of the Trump era. Trump himself targeted OPEC on Twitter in April as oil prices continued to rise. Beyond tweets, the Administration could try to push Saudi Arabia and other oil rich allies to increase production. But Saudi Arabia benefits from increased prices and the IMF estimates that the country will need prices at \$70 a

barrel to break even. Saudi officials have said they would like to see prices continue upward. Indeed, the country orchestrated a production cut with OPEC and Russia to nudge prices in that direction. But Saudi officials also do not want prices to cross \$100 a barrel, according to a Wall Street Journal report. "The Saudis have signaled that they're interested in continuing," says Antoine Halff, a researcher at Columbia University's Center on Global Energy Policy and the former chief oil analyst at the International Energy Agency. "Their price appetite is only increasing." That means a higher bill for the US — and a new economic and geopolitical challenge for Trump.

Source: <https://www.msn.com/>, 09 May 2018.

OPINION – Suzanne Maloney

After Dumping the Nuclear Deal, Trump has No Strategy for Iran

After months of speculation and a flurry of last-minute European diplomacy, Donald Trump has taken perhaps the most consequential decision

of his unconventional presidency with the re-imposition of US sanctions on Iran in a deliberately provocative breach of the 2015 nuclear agreement. By torpedoing US adherence to the accord, Trump has all but guaranteed its collapse, a move that opens the door to the unfettered resumption of Iran's nuclear program and unleashes unpredictable escalatory pressures in an already volatile Middle East.

The premediated American dismantling of an agreement that was the product of more than a decade of intense diplomacy and economic pressure marks a staggeringly counterproductive step. That it was undertaken over the vocal objections of Washington's closest allies and without a clear strategy of mitigating the newly heightened risks of Iranian proliferation and conventional retaliation represents an abdication of American leadership on the international stage that is unparalleled in recent history.

Trump's silence on this point illustrates more than simply his own limited familiarity with the complex issues at stake in the deal, known as the Joint Comprehensive Plan of Action or JCPOA, which he disparaged as "defective at its core." It highlights the absurd logic that his administration has deployed in grappling with the challenges posed by Tehran.

Notably, it was precipitated by a president who could not even respond to a single, simple question, shouted by a reporter as Trump signed the order to re-impose sanctions with a flourish of his pen, about how his decision might make the country safer. That is the only question that matters: How is America safer now that the United States is unravelling its end of a bargain that curbed Iran's nuclear activities?

Trump's silence on this point illustrates more than simply his own limited familiarity with the complex issues at stake in the deal, known as the Joint Comprehensive Plan of Action or JCPOA, which he disparaged as "defective at its core." It highlights the absurd logic that his administration has deployed in grappling with the challenges posed by Tehran. If the president truly believes that the JCPOA's far-reaching inspections regime and its restrictions of 10, 15, and 25 years on various aspects of Iran's nuclear activities are somehow insufficient to guard against Iran's unshakeable yearning for a nuclear weapon, what

risks then are posed by the evisceration of all constraints?

The inevitable consequence of American abrogation of the deal is the attrition of its constraints. American investment in negotiating a resolution to Iran's nuclear ambitions—undertaken first by the George W. Bush administration and culminated by Barack Obama—furnished the requisite quid pro quo that persuaded Tehran to make historic concessions. Absent America, Tehran has ceded those ambitions for little more than European goodwill; trading diamonds for chocolates, as an influential Iranian politician once ridiculed a prior nuclear accord. Tehran walked away from that agreement, and over time it is sure to abandon the wreckage that remains of the JCPOA.

For Trump, the decision is all ego; dismembering the Iran deal satisfies a multiplicity of petty personal interests—in undoing his predecessor's legacy, making good on his own campaign promises, and stroking his inflated sense of his own negotiating prowess as manifestly superior to Obama, who he charged with conceding "maximum leverage" in exchange for a "giant fiction."

By contrast, for Trump's advisors—most notably National Security Advisor John Bolton—and many others in Washington especially within the Republican policy establishment, the madness is the method. Guided by their mantra that Tehran only responds to force, Trump administration hawks have embraced the theory that the United States needs to be prepared to disrupt the status

quo across the region, precisely because Iran has found it a conducive context for enhancing its own influence. They have no ready explanation for precisely how disruption will rebalance the regional power equation in America's favor, and the only prior application of this strategic vision—the 2003 US invasion of Iraq—is hardly a reassuring precedent.

For better or, as is likely, for worse, this "chaos theory" dovetails neatly with the array of possibilities available to Tehran in responding to the demise of the nuclear deal. Iran's president, Hassan Rouhani, moved quickly to forestall any sense of a regime in crisis by taking to state television immediately after Trump concluded his own remarks. His reassurance was primarily aimed at his own jittery population, whose trepidations about mounting pressure had helped collapse the value of the domestic currency in recent months.

Iran can muddle through a considerable amount of economic pressure and turmoil, thanks to a diversified economy as well as long experience and well-honed tactics for mitigating and evading sanctions. But the reality is that despite profound international resentment over Trump's tactics, the re-imposition of US sanctions will present much of the world with only one viable choice, to abstain or wind down trade and investment with Tehran rather than risk US penalties. European assurances to Tehran can do little to change the calculations of the private sector, especially when the upside rewards of opportunities in Iran remain modest in comparison to the potential liabilities.

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And as the benefits of the deal wane, Tehran will contend with its own saber rattlers, whose worldview was shaped by the isolation and existential conflict of the revolution's early years. They will seek to match American pressure with Iranian pushback and demonstrate the country's capability to outmaneuver American forces on the range of battlefields across the region where they are in close proximity with Iran's Revolutionary Guard and its proxy militias.

Trump has repeatedly insisted that he will steer clear of embroiling America in yet another long, messy, costly conflict in the Middle East, but his decision to target the nuclear deal elevates the odds of Iranian escalation and, with it, even greater threats to US interests and allies. The irony is acute; Trump derided the JCPOA because "it didn't bring calm, it didn't bring peace," but undoing the deal will only inflame a region already riven by extremism and sectarian rivalries, making it harder for the United States to extricate itself as the president himself has promised. Until and unless the administration resolves the contradictions between the president's maximalist objectives, his disinclination to take on the Iranians on the ground, and Washington's divergence from its core allies on this question, Trump cannot hope to make progress on any element of the Iranian challenge.

Trump peppered his speech with incongruous notes of triumphalism about his as-yet inconclusive diplomatic gambit toward North Korea as well as the expectation that Iran's leaders "are going to want to make a new and lasting deal, one that benefits all of Iran and the Iranian people. When they do, I am ready, willing, and able. Great things can happen for Iran." Although it might prove a clever gambit for managing the fallout, neither Rouhani nor his harder-line rivals in the security establishment are likely to take Trump up on his offer to "make Iran great again" by returning to the negotiating table. Given the widespread public support for the deal among Iranians, Trump's announcement dealt a visceral blow to the national dignity well beyond the regime itself; no serious politician would survive an effort to engage with Washington any

time soon.

From the start, the inflated expectations underpinning the deal on both sides threatened its viability. Iran's leadership promoted the nuclear deal as a total victory that meant the wholesale removal of economic restrictions and an expressway to diplomatic and economic revival. In reality, Iran faced a continuing web of US sanctions, international trepidation, and a dysfunctional economy that resisted an easy jumpstart.

President Obama was far more circumspect in his rhetoric, taking care to describe the deal as resolving only one element of the threat posed by Iran. But his officials routinely posited that the deal could generate other avenues of cooperation with Iran, and the logic beneath the agreement's time-limited restrictions on Iran's nuclear program presupposed Iran's evolution into a responsible and respected member of the international community. The reality turned out very differently there too, as Tehran maintained and in some cases intensified its efforts to extend its influence across the region through any means necessary. The disconnect between the text of the deal and the aspirations attached to it set the stage for rising frustration and bitterness on both sides, paving the way for Trump's demand to "fix" the agreement by fundamentally revising the trade-offs at its core. The increasingly frantic European efforts to provide the president with the appearance of a victory while leaving the essence of the agreement untouched proved in the end to be a wild goose chase....

With his announcement...Trump has jettisoned that transaction for the far more ambitious goal of Iran's transformation. That will require far more than the stroke of a pen: For this gambit to succeed, the White House now has to devise a strategy that can compel or persuade Tehran to make unprecedented concessions on an array of vital security policies. When the nuclear agreement was first concluded, Rouhani described it as an "end and a beginning" for Iran. With Trump's termination of the nuclear deal, the formidable challenge of trying to get more with less is just beginning.

Source: <https://www.brookings.edu>, 09 May 2018.

Opinion – Ramesh Thakur

The Long Road to Nuclear Disarmament

This is crunch time for the global nuclear order. By 12 May 2018, US President Donald Trump must decide whether to recertify the Iran nuclear deal or reimpose sanctions. Only a few weeks later, he is expected to meet North Korean leader Kim Jong-un for a summit that will have implications for that country's nuclear program.

With Trump surrounded by hawkish advisers – like Secretary of State Mike Pompeo and National Security Adviser John Bolton – the odds are good that efforts to denuclearize will suffer setbacks before the month is out. For this reason, it is more important than ever that the international community upholds existing treaty obligations, starting with the 1968 NPT. But to do that, tough conversations must be had.

Multilateral agreements are always prone to gaps in application; the international non-proliferation regime is no different. For example, while neither Israel nor India have signed the NPT, both states are considered responsible members of the nuclear-weapons club. Israel has never been sanctioned for its bomb, and India has a waiver from the Nuclear Suppliers Group, as well as several civil nuclear agreements with the United States, Australia, Canada, and Japan. Pakistan's nuclear weapons, on the other hand, are tolerated but not accepted; North Korea's de facto nuclearization is considered intolerable; and Iran's nuclear program was curbed before a weapon could be developed.

Amid this imperfect framework, many countries have become frustrated by the refusal of NPT signatories to discuss their own disarmament. Article VI of the NPT obliges parties to pursue "in good faith" negotiations to disarm, but the

nuclear-weapons states that have ratified the treaty do not interpret this as a prohibition on their possessing a nuclear arsenal. Rather, buoyed by the doctrine of deterrence, they argue that reductions would weaken global security.

Perhaps not surprisingly, non-nuclear-weapon states see things differently. And, last year, they committed their views to a supplementary treaty at the UN. Today, the Treaty on the Prohibition of Nuclear Weapons (TPNW) has been signed by 58 countries and ratified by eight, and if it ever comes into force will ban the use, threat of use, or possession of nuclear arms. Better known as the "ban treaty," the TPNW is an important step toward the establishment of a new international

norm. It is also a logical consequence of the NPT's failings. But, because the ban treaty goes beyond the NPT in two key respects, it has also drawn heavy opposition. The ban treaty would prohibit so-called nuclear sharing arrangements, whereby allies of nuclear weapon states could store weapons on these states' territory.

Moreover, it undermines the logic of deterrence by making the "threat of use" illegal. If the global non-proliferation regime is to remain viable, the competing visions reflected in the NPT and the ban treaty must be reconciled. For that to happen, the international community needs to agree on a strategy to achieve an international order in which the reduction of nuclear stockpiles reinforces, rather than jeopardizes, regional and global security.

No doubt these will be difficult discussions, but the alternative is far worse than a few bruised egos. Some experts have suggested that hardline opposition to the ban treaty could prompt a backlash from countries that have grown disillusioned with the NPT, leading to widespread withdrawal from the 1968 treaty. Needless to say, this would be hugely counter-productive. Not only would it destabilize the existing nuclear order and

If the global non-proliferation regime is to remain viable, the competing visions reflected in the NPT and the ban treaty must be reconciled. For that to happen, the international community needs to agree on a strategy to achieve an international order in which the reduction of nuclear stockpiles reinforces, rather than jeopardizes, regional and global security.

heighten many countries' sense of insecurity; it would also deepen armed states' attachment to the bombs they already have.

Its flaws notwithstanding, the NPT has brought years of nuclear stability. Even countries that have refused to sign the treaty have a stake in its survival, with or without the ban treaty, given the serious global security implications of its unraveling. Therefore, all sides must urgently rediscover their common interest in practical and effective disarmament.

The two treaties can converge in a framework that minimizes nuclear threats in the near term; reduces the number of nuclear weapons in the medium term; and aspires to the complete, verifiable, and irreversible elimination of nuclear weapons in the long term. This approach was outlined in 2009 by the International Commission on Nuclear Non-Proliferation and Disarmament; a version of it must be resurrected today.

By the end of this week, the fate of the Iran nuclear deal will be clear; Trump's refusal to recertify it would very likely signal its demise. But, regardless of what becomes of Iran's nuclear program, or of North Korea's for that matter, a weakening of the NPT – the bedrock of the global nuclear order for a half-century – represents the biggest threat of all.

Source: <https://www.project-syndicate.org>, 07 May 2018.

OPINION – Jeffrey D. Sachs

Denuclearization Means the US, Too

There are two types of foreign policy: one based on the principle "might makes right," and one based on the international rule of law. The United States wants to have it both ways: to hold other countries accountable to international law while exempting itself. And nowhere is this truer than on the matter of nuclear weapons. America's approach is doomed to fail. As Jesus declared, "all they that take the sword shall perish with the sword." Rather than perishing, it's time to hold all countries, including the US and other nuclear powers, accountable to the international rules of

non-proliferation.

The US demands that North Korea adhere to the provisions of the NPT, and on that basis has encouraged the United Nations Security Council to impose sanctions on North Korea in pursuit of denuclearization. Similarly, Israel calls for sanctions or even war against Iran to stop the country from developing a nuclear weapon in violation of the NPT. Yet the US brazenly violates the NPT, and Israel does worse: it has refused to sign the treaty and has claimed the right to a massive nuclear arsenal, acquired through subterfuge, that it refuses to acknowledge to this day.

.... First, nuclear-weapon states pledge not to transfer nuclear weapons or to assist non-nuclear states' manufacture or acquisition of them, and non-nuclear states pledged not to receive or develop nuclear weapons. Second, all countries have the right to the peaceful use of nuclear energy. Third, and crucially, all parties to the treaty, including the nuclear powers, agree to negotiate nuclear – and indeed general – disarmament. As the NPT's Article VI puts it: "Each of the Parties to the Treaty undertakes 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."

The core purpose of the NPT is to reverse the nuclear arms race, not to perpetuate the nuclear monopoly of a few countries. Still less is it to perpetuate the regional nuclear monopoly of countries that have failed to sign the treaty, such as Israel, which now seems to believe that it can evade negotiations with the Palestinians because of its overwhelming military power. Such is the self-destructive hubris conjured by nuclear weapons.

Most of the international community – with the conspicuous exception of the existing nuclear powers and their military allies – reiterated the call for nuclear disarmament by adopting in 2017 the Treaty on the Prohibition of Nuclear Weapons. The treaty calls on every nuclear-armed state to

cooperate "for the purpose of verifying the irreversible elimination of its nuclear-weapon program." Whereas 122 countries voted for it, one voted against, one abstained, and 69, including the nuclear powers and NATO members, did not vote. 58 countries had signed the treaty and eight had ratified it.

The US demands that North Korea live up to its NPT obligations and denuclearize, and the Security Council agrees. Yet the brazenness with which the US demands not true denuclearization, but rather its own nuclear dominance, is stunning. The Trump administration's Nuclear Posture Review, published in February, calls for a massive modernization of the US nuclear arsenal while paying no more than lip service to its NPT treaty obligations:

"Our commitment to the goals of the Treaty on the NPT remains strong. Yet we must recognize that the current environment makes further progress toward nuclear arms reductions in the near term extremely challenging....This review rests on a bedrock truth: nuclear weapons have and will continue to play a critical role in deterring nuclear attack and in preventing large-scale conventional warfare between nuclear-armed states for the foreseeable future."

In short, the US demands that only other countries denuclearize. Denuclearizing itself would be "challenging" and would violate the "bedrock truth" that nuclear weapons serve US military needs.

Aside from America's failure to abide by its NPT obligations, another huge problem is that US military needs are not really about deterrence. The US is the major war-making entity in the world by far, fighting wars of choice in the Middle East, Africa, and elsewhere. Its military has repeatedly engaged in regime-change efforts during the past half-century, wholly in violation of international law and the UN Charter, including two recent

operations to overthrow leaders (Iraq's Saddam Hussein and Libya's Muammar el-Qaddafi) who had acceded to US demands to end their nuclear programs.

We can put it this way: power corrupts, and nuclear power creates the illusion of omnipotence. Nuclear powers bluster and boss rather than negotiate. Some overthrow other countries' governments at their whim, or at least aim to do so. The US and its nuclear allies have repeatedly arrogated to themselves the right to ignore the UN Security Council and the international rule of law, such as the illegal NATO attacks against Qaddafi's regime in Libya and the illegal military incursions by the US, Israel, the United Kingdom, and France in Syria in the effort to weaken or overthrow Bashar al-Assad.

By all means, let us urge a rapid and successful denuclearization of North

Korea; but let us also, with equal urgency, address the nuclear arsenal of the US and others. The world is not living under a Pax Americana. It is living in dread, with millions pushed into the vortex of war by an unrestrained and unhinged US military machine, and with billions living in the shadow of nuclear annihilation.

Source: <https://www.project-syndicate.org>, 07 May 2018.

STATEMENT - Mike Pompeo, Secretary of State, USA

On President Trump's Decision to Withdraw from the JCPOA

As we exit the Iran deal, we will be working with our allies to find a real, comprehensive, and lasting solution to the Iranian threat. We have a shared interest with our allies in Europe and around the world to prevent Iran from ever developing a nuclear weapon. But our effort is broader than just the nuclear threat and we will be working together with partners to eliminate the threat of Iran's ballistic missile program; to stop its terrorist

activities worldwide; and to block its menacing activity across the Middle East and beyond. As we build this global effort, sanctions will go into full effect and will remind the Iranian regime of the diplomatic and economic isolation that results from its reckless and malign activity.

Source: <https://www.state.gov/>, 08 May 2018.

NUCLEAR STRATEGY

INDIA

20 Yrs after Pokhran-II, India Begins Inducting Agni-5 ICBM

India has kicked off the process to induct its first intercontinental ballistic missile Agni-V into the SFC, 20 years after the country conducted the five Pokhran-II underground nuclear tests under 'Operation Shakti'. Defence sources said "several systems and subsystems" associated with the over 5,000-km-range missile, which brings the whole of China as well as parts of Europe and Africa under its strike range, "are being handed over" to the new Agni-V unit raised under the SFC.

"The second pre-induction trial of Agni-V is slated to take place soon (the first one was on January 18 this year, after four developmental trials since April 2012). If successful like the earlier tests, the Agni-V unit with its missiles can be shifted to a strategic base," said a source. ...

Source: Rajat Pandit, <https://www.indiatimes.com/>, 12 May 2018.

BALLISTIC MISSILE DEFENCE

IRAN

Iran Backed Houthi Militia Target Riyadh's Inhabited Areas with 2 Missiles

Two ballistic missiles were fired at the Saudi capital Riyadh on 09 May 2018, according to the coalition battling rebels in neighboring Yemen who claimed the attempted attack. Saudi Arabia's air defenses "intercepted" one of the missiles, while another crashed into a desert area south of Riyadh, coalition spokesman Turki Al-Maliki said.

The missiles were "unquestionably" fired at the city "with the intention of hitting inhabited areas," he added. Maliki blamed the attack on "militiamen and terrorists, vassals of Iran" who try to "threaten the security of Saudi Arabia, the region and the world." Yemen's Houthi rebels quickly claimed responsibility for attacking "Riyadh Dry Port and other economic targets" in the Saudi capital with Burkan 2H ballistic missiles. State-run Saudi Press Agency said the country's air defenses hours earlier had also intercepted a ballistic missile targeting the southern city of Jizan.... Maliki accused the Houthis of firing the missile from the northern Yemeni province of Saada and of "deliberately targeting populated civilian zones." He said such "hostile action" proves the involvement of Iran in the Yemen conflict, repeating Riyadh's long-standing claim that regional rival Tehran is supplying the Houthis with ballistic missiles.

Saudi Arabia launched a military coalition in Yemen in 2015, aimed at rolling back the Houthis and restoring the internationally

recognized government to power. The Houthis have in recent months intensified missile attacks against Saudi Arabia. The latest salvo came a day after US President Donald Trump exited the Iran nuclear agreement, which he criticized for excluding measures to curb Tehran's ballistic missile program.

Source: <http://www.arabnews.com/>, 11 May 2018.

URANIUM PRODUCTION

GENERAL

Demand for Uranium Expected to Grow with Nuclear Energy

Uranium prices have remained relatively stable at around \$21 per pound this year. Prices have significantly dropped since the crash of 2008 and further during the Fukushima Daiichi plant incident in Japan in 2011.

The market is driven by surging demand and dependency on nuclear energy, as many countries transition to become more environmentally

efficient. There were a total of 440 nuclear power plants operating around the world in January, delivering about 11% of the world's energy, according to WNA. Fifty more reactors are being constructed, notably in China, India, UAE and Russia, as demand for cleaner electricity is projected to grow. "That's when you will see a dramatic change," Borshoff told Reuters in an interview. "The whole issue of fear of lack of supply will start to seep in when they realize they are competing for rare pounds of uranium." ...

Source: <https://www.prnewswire.com/>, 10 May 2018.

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been very quiet about those negotiations. It's very hard to get information out of either the Saudis or the US government exactly where that stands."

Riyadh has previously stated it wants to tap its own uranium resources for "self-sufficiency in

producing nuclear fuel," according to Reuters. "The stock market is there to serve you and not to instruct you" Hear what else Buffett has to say. But the Saudi pursuit of nuclear energy has made many observers nervous. In March, Saudi Crown Prince Mohammed bin Salman told CBS News that, if Iran were to build a nuclear bomb, so would Saudi Arabia....

Source: <https://www.cnn.com/>, 10 May 2018.

NUCLEAR ENERGY

SAUDI ARABIA

US Engineering Giant Sees 'Tremendous Opportunity' in Saudi Nuclear Energy Plans

There is a "tremendous opportunity" for US firms to get involved, Stuart Jones, regional president for Europe and Middle East at Bechtel, told CNBC's Hadley Gamble in Manama, Bahrain. ... Earlier this year, Saudi Arabia's foreign minister called on the US to give it the same rights as other nuclear nations in its push to process its own nuclear fuel. The official also revealed that the kingdom is in talks with other countries should America refuse. Saudi Arabia has said it plans to construct 16 nuclear power reactors over the next 20 to 25 years, costing more than \$80 billion. It has invited US firms to take part in the program but acceptance from Washington requires a country to sign a peaceful nuclear cooperation pact.

..."That negotiation is still going on (and) that also requires congressional approval," Jones said, adding he didn't know if such an approval will come. "We'll see. They're working at it and they've

But the Saudi pursuit of nuclear energy has made many observers nervous. In March, Saudi Crown Prince Mohammed bin Salman told CBS News that, if Iran were to build a nuclear bomb, so would Saudi Arabia.

UK

UK Labour Party Split over Nuclear Power

The Labour party is divided over whether to back nuclear power stations in the UK, creating further uncertainty over the future of several new plants that are seen as crucial to Britain's energy security. The high cost of the Hinkley Point power station, under construction for £20bn in Somerset, has prompted questions across Westminster about whether nuclear still represents value for money.

The debate is especially intense within the opposition Labour party, where some MPs favour the industrial benefits of building power stations, while a growing faction wants to support only renewable wind and solar energy programmes.... Labour's wrangling over energy policy comes at a sensitive time for the UK, as it plans a new generation of nuclear plants to replace ageing reactors and dirty coal-fired power stations. Theresa May...held talks in Downing Street with Hiroaki Nakanishi, chairman of Hitachi, about a proposed nuclear plant to be built by the Japanese company's Horizon subsidiary at Wylfa in Anglesey.

The UK and Japanese governments have been in discussions with Hitachi for months about potential financial support for the project. But that backing could be thrown into doubt if Labour were to win the next election. In its general election manifesto last year, Labour said it would “support further nuclear projects and protect nuclear workers’ jobs and pensions”.

Rebecca Long-Bailey, shadow business secretary, remains adamant that Labour should continue to support Wylfa, as well as another project at Moorside in Cumbria. “Public investment in nuclear energy would bring huge benefits through the nuclear supply chain and energy security,” she said...Ms Long-Bailey’s position is also supported by Sue Hayman, shadow environment secretary, whose constituency is in Cumbria. Large unions, including Unite and the GMB, are also strong advocates of nuclear energy.

Other senior Labour figures are arguing for a U-turn, unless the cost of new nuclear plants can be reduced sharply. One compromise under consideration could see Labour keep the commitment it made in last year’s manifesto by supporting smaller “modular” reactors, rather than bigger, more expensive schemes such as Wylfa and Moorside.

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John McDonnell, shadow chancellor, is officially in favour of new nuclear projects, but was previously opposed. As a backbench MP in 2012, he suggested a Labour government should announce an end to nuclear power within the first 100 days of taking office.

In private, Jeremy is against, as is the majority of the shadow cabinet, but no one wants to put Rebecca [Long-Bailey] in an awkward position. The big question is whether John [McDonnell] would personally sign off all the loan guarantees and subsidies needed, which I don’t believe [he would]...“In private, Jeremy is against, as is the majority of the shadow cabinet, but no one wants to put Rebecca in an awkward position,” said one of his allies. “The big question is whether John

[McDonnell] would personally sign off all the loan guarantees and subsidies needed, which I don’t believe [he would].”

Hinkley Point C, the UK’s first new nuclear power station since the 1990s, was approved by Mrs May last year, but the project continues to attract widespread criticism for the hefty subsidy to be paid by consumers for its electricity. The government signed a deal in 2013 guaranteeing EDF, the French company leading the project, £92.50 per megawatt hour for Hinkley’s power. That compares with £57.50/MWh for electricity from the latest UK offshore wind projects, although advocates for nuclear point out that wind power is not available all the time...

Horizon and other nuclear developers are aiming to reduce the cost of constructing nuclear plants by 20 to 30 per cent compared with Hinkley, in an effort to remain competitive against the

falling cost of renewables. Senior people in the nuclear industry said they remained confident about Labour’s continued support for their projects, because of the strength of union backing.

Source: Jim Pickard and Andrew Ward, <https://www.ft.com/>, 06 May 2018.

NUCLEAR COOPERATION

USA–SAUDI ARABIA

Washington’s Plan for a Nuclear Agreement with Saudi Arabia may be in Jeopardy

President Trump’s decision to “nix” the Iran Nuclear Deal was reckless. However, it provides a golden opportunity for the Trump administration to bolster nuclear negotiations with another Middle Eastern State, Saudi Arabia. The two countries are negotiating a nuclear-cooperation agreement but a sticking point has involved whether the Saudis will agree to forego dual-use technologies that can be used to produce either nuclear energy or nuclear weapons. Given the Trump administration’s claim to have left the Iran

deal based on nonproliferation concerns, it now has leverage to apply the same policy to Riyadh.

The administration hopes to submit a final agreement with Saudi Arabia for congressional approval by mid-June. Such an agreement is necessary for the United States to transfer significant nuclear material, equipment, or components from the United States to

Saudi Arabia and could considerably help US companies like Westinghouse be shortlisted later this year to build the country's first two nuclear reactors. By submitting the deal by mid-June, the administration would meet the deadline for the shortlist as well as legal requirements that the current Congress have ninety days to block the deal or have it automatically approved.

Trump's claim that his withdrawal decision from the Iran deal will strengthen his hand in negotiating a better Iran deal is yet to be proven. But Trump can prove that he truly wants to prevent an arms race in the Middle East by insisting on specific provisions in the nuclear cooperation agreement with Saudi Arabia that will make it harder for Riyadh to use its nuclear energy program for weapons purposes.

An outstanding issue in the talks is whether the Saudis will agree to forego uranium enrichment and spent fuel reprocessing, two dual-use technologies that can be used to produce fuel useable in nuclear reactors but can also be used to produce the highly enriched uranium or separated plutonium needed for nuclear weapons. A decade ago, Iran' and Saudi Arabia's neighbor, the United Arab Emirates, pledged not to engage in any enrichment or reprocessing activities whether the materials and facilities were supplied by the United States or others. Saudi Arabia has resisted making a similar unconditional pledge.

Given the Trump administration's claim to have left the Iran deal based on nonproliferation concerns, it now has leverage to apply the same policy to Riyadh. The administration hopes to submit a final agreement with Saudi Arabia for congressional approval by mid-June.

To secure an agreement with the United States that will pass Congress, the Saudis may agree on a moratorium on enrichment and reprocessing. But in order not to lag too far behind Iran's capabilities, they would likely tie their pledge to Iran's enrichment activities.

Other nonproliferation measures that could ensure the Saudi energy program will not be used

for weapons purposes would include the adoption of the Additional Protocol, an agreement that provides the IAEA additional monitoring and access rights, acquisition from foreign suppliers of nuclear fuel for the entire life of the reactor, and the

return of the spent fuel from the reactor to the supplier.

To secure an agreement with the United States that will pass Congress, the Saudis may agree on a moratorium on enrichment and reprocessing. But in order not to lag too far behind Iran's capabilities, they would likely tie their pledge to Iran's enrichment activities. In an interview in mid-

March, Saudi Crown Prince Mohammed bin Salman warned: "Without a doubt, if Iran developed a nuclear bomb, we will follow suit as soon as possible." Given the United States just exited the Iran deal, it is unclear for how much longer Iran will abide by its enrichment

restrictions.

According to President Trump's announcement, the United States will now reimpose stringent sanctions on Iran and is considering new penalties. If the Trump administration reimposes all US nuclear-related sanctions, including secondary sanctions targeting international trade with Iran...under such a situation, Iran may decide that its main reason for joining the deal, namely economic recovery through foreign investments, cannot be achieved, and withdraw from the deal. This does not mean that Iran will start enriching above the 5 percent agreed in the deal immediately, but Iran's nuclear chief Ali Akbar Salehi has said that if such a decision is made by Iran, then it will "only need four days to ramp up

to 20% enrichment.”

Given the uncertainties about Iran’s response over the next few months to Trump’s action, as well as the good will Trump’s decision has generated in Riyadh, the administration might also want to probe the possibility of extending the negotiations in order to win nonproliferation concessions and submit the agreement to a new Congress in January. By then, hopefully the direction of Iranian actions on its nuclear program and any U.S. responses will be clearer and allow Washington to tailor the Saudi agreement accordingly. To be sure, this could risk the chances for the US bid—Riyadh may want to move more quickly, or it may decide to work with a non-US company that places fewer restrictions on its enrichment and reprocessing capabilities.

But there is little practical reason that Saudi Arabia cannot postpone its bid decision and plenty of political and diplomatic reasons for it do so. Yet, even in the case that Saudi Arabia keeps to its schedule, the US nuclear industry could still play an important role. Although a reactor deal would produce the highest revenue, there are many other important areas through which the United States can assist the Saudi nuclear program—from developing its power grid, building related infrastructure to training personnel, and developing independent legislative body. The administration would be wise to coordinate strategies on both the Iran and Saudi Arabia nuclear programs. Preventing the two countries from having a nuclear-weapon capability and competing in a nuclear arms race is the goal. The rest can wait.

Source: <http://nationalinterest.org/>, 09 May 2018.

NUCLEAR NON-PROLIFERATION

IRAN

Trump pulls United States out of Iran Nuclear Deal, Calling the Pact ‘An Embarrassment’

President Trump said he is pulling the United States out of the international nuclear deal with Iran, announcing that economic sanctions against Tehran will be reinstated and declaring that the 2015 pact was rooted in “fiction.” Trump’s

decision, announced at the White House, makes good on a campaign pledge to undo an accord he has criticized as weak, poorly negotiated and “insane.”

“The Iran deal is defective at its core. If we do nothing, we know exactly what will happen,” Trump

said in remarks at the White House. “In just a short period of time, the world’s leading state sponsor of terror will be on the cusp of acquiring the world’s most dangerous weapons. “The move amounts to Trump’s most significant foreign policy decision to date. While he cast the US action as

essential for national security and a warning to Iran and any other nuclear aspirant that “the United States no longer makes empty threats,” it could also increase tensions with key US allies that heavily lobbied the administration in recent weeks not to

abandon the pact and see it as key to keeping peace in the region. They tried to convince Trump that his concerns about “flaws” in the accord could be addressed without violating its terms or ending it altogether.

After Trump’s announcement, the leaders of Britain, France and Germany issued a joint statement expressing “regret and concern” and pledging their “continuing commitment” to terms of the agreement, formally known as the JCPOA.

Given the uncertainties about Iran’s response over the next few months to Trump’s action, as well as the good will Trump’s decision has generated in Riyadh, the administration might also want to probe the possibility of extending the negotiations in order to win nonproliferation concessions.

The move amounts to Trump’s most significant foreign policy decision to date. While he cast the US action as essential for national security and a warning to Iran and any other nuclear aspirant that “the United States no longer makes empty threats.

"This resolution remains the binding international legal framework for the resolution of the dispute about the Iranian nuclear programme," British Prime Minister Theresa May, French President Emmanuel Macron and German Chancellor Angela Merkel said in their statement. "We urge all sides to remain committed to its full implementation and to act in a spirit of responsibility."

That was a plea to Iran not to take steps that would break the deal, something Iranian officials have said at times they would do if Trump followed through on his frequent threats to yank the United States out of the agreement. While the US exit does not render the rest of the deal moot, it is not clear whether there is enough incentive on the part of Iran to sustain the agreement. Relief from US banking sanctions was a main reason for Tehran to come to the table.

"In response to US persistent violations & unlawful withdrawal from the nuclear deal, as instructed by President Rouhani, I'll spearhead a diplomatic effort to examine whether remaining JCPOA participants can ensure its full benefits for Iran," Iranian Foreign Minister Mohammad Javad Zarif tweeted. "Outcome will determine our response." ...

A memorandum signed by Trump at the conclusion of his statement means that "no new contracts" with Iran will be permitted, Bolton said. Although the United States cannot prevent the Europeans or others from having financial relationships with Iran, nearly all global transactions at some point pass through dollar exchanges and US banks, arrangements that are now prohibited. Existing contracts, Bolton said, will be subject to "wind-down provisions" of 90 days to six months, after which they will be required to "phase out." Regulations giving specific time frames, he said, will be announced by the Treasury Department.

Treasury Secretary Steven Mnuchin said the administration was revoking licenses for Boeing and Airbus, which were among the biggest deals since the nuclear accord. Boeing had planned to sell IranAir about 80 aircraft worth about \$17 billion; Airbus had agreed to sell 100 aircraft worth

about \$19 billion. "The Boeing and Airbus licenses will be revoked," Mnuchin said. "The existing licenses will be revoked."

He argued that sanctions are what previously brought Iran to the negotiating table. "These are very, very strong sanctions — they worked last time," Mnuchin told reporters. "Our objective is to, again, eliminate transactions and eliminate access to their oil industry." Trump's declaration puts a variety of companies in difficult positions.

The US withdrawal from the Iran nuclear deal also boosts the outlook for crude-oil prices. Before the deal, the Obama administration squeezed traders and refiners to not buy Iranian oil, wringing a series of 20 percent cuts in purchases until more than 1 million barrels a day of Iran's exports had been taken off world markets. Fear of a similar mechanism has been one factor bolstering oil prices in recent weeks, though prices sagged. The price of West Texas Intermediate crude fell about 1.4 percent, slipping to \$69.74 a barrel.

The Iran Deal is a deeply flawed agreement. . However, without proof that Iran is in violation of the agreement, it is a mistake to fully withdraw from this deal," Rep. Michael R. Turner.

... "America will not be held hostage to nuclear blackmail. We will not allow

American cities to be threatened with destruction, and we will not allow a regime that chants 'Death to America' to gain access to the most deadly weapons on Earth," Trump said. The chant was a fixture of pro-government rallies in Iran for decades, but despite its use during a major anti-Trump rally last year, it has largely fallen out of favor as a propaganda tool. Trump invoked the current diplomatic efforts with North Korea and the possibility of a compact to rid the Korean Peninsula of nuclear weapons as emblematic of how he is conducting major international negotiations, saying any deal he cut would be airtight.

The reaction to the president's decision did not split neatly along party lines. While some GOP leaders applauded his decision, heralding it as an opportunity to strike a new and better arrangement, several other senior Republicans — including those who voted against the Iran deal — said the decision to withdraw was "foolhardy" and "a mistake." "The Iran Deal is a deeply flawed agreement. . However, without proof that Iran is

in violation of the agreement, it is a mistake to fully withdraw from this deal," Rep. Michael R. Turner (R-Ohio), a senior member of the House Armed Services and Intelligence committees, said in a statement.

Even House Speaker Paul D. Ryan (R-Wis.) said in a statement that it was "unfortunate that the United States could not come up with a way of fixing the Iran deal instead of withdrawing, and he thanked the European parties to the pact for trying to work with Washington "toward that goal." He expressed hope that they might be able to find a new way of addressing Iranian aggression before new sanctions are implemented....

"President Trump is right to abandon the Obama administration's bad deal," Sen. John Cornyn (R-Tex.) said in a statement, adding that Congress must have a role in any new agreement. Democratic leaders excoriated the president for a "rash" and shortsighted decision that they argued will compromise security in the Middle East and around the world. "The President's decision to abdicate American leadership during a critical moment in our effort to advance a denuclearization agreement with North Korea is particularly senseless, disturbing and dangerous," House Minority Leader Nancy Pelosi (D-Calif.) said in a statement.

Source: <https://www.washingtonpost.com/>, 08 May 2018.

UN's Top Nuclear Inspector Resigns Suddenly

The UN nuclear watchdog says its top inspector has quit with immediate effect, just as the agency's work in Iran is once again in focus. The IAEA didn't give a reason for the sudden resignation of Tero Varjoranta, stating...that it doesn't comment on confidential personnel matters. Varjoranta, who was in the role for almost five years, will be replaced temporarily by Massimo Aparo, an Italian nuclear engineer who was most recently the agency's top inspector for Iran. The move comes just days after US President Donald Trump announced the United States would withdraw from the 2015 Iran nuclear accord designed to keep Tehran's atomic weapons program in check. The

Vienna-based nuclear agency says it has no indications Iran is in breach of the accord.

Source: <https://www.bloomberg.com/>, 12 May 2018.

NUCLEAR PROLIFERATION

NORTH KOREA

N. Korea Says US Pressure would not be Conducive to Solving Nuclear Issue

North Korea...called on the US to stop pursuing pressure and military threats against the communist state, saying such moves would not be of any help to resolving the country's nuclear and missile programs. "It would not be conducive to addressing the issue if the US miscalculates the peace-loving intention of the DPRK as a sign of 'weakness' and continues to pursue its pressure and military threats against the latter," an unnamed spokesman for the North Korean foreign ministry said in an interview with the country's state-run Korean Central News Agency...

The statement marks a rare criticism of Washington from the North in recent weeks, with the two countries preparing for an unprecedented summit between their leaders. The meeting follows the first summit between South Korean President Moon Jae-in and North Korean leader Kim Jong-un at the border village of Panmunjom on 27 April 2018, where they affirmed the shared goal of a nuclear-free Korean Peninsula and agreed to push for a formal end to the 1950-53 Korean War.

"Recently, the US is misleading the public opinion, arguing as if the DPRK's clarification of its intention for denuclearization of the Korean peninsula made through the Panmunjom Declaration adopted at the historic North-South summit is the result of so-called sanctions and pressure," the spokesman said. "At the same time, it is making open remarks that it would not ease the sanctions and pressure until the DPRK gives up its nuclear weapons completely and also moving to aggravate the situation on the Korean Peninsula by deploying strategic assets on the peninsula and increasing its attempt to taking up 'human rights' issue against the DPRK."...

Source: <http://www.koreaherald.com/>, 06 May 2018.

NUCLEAR SAFETY

CHINA

China's Risky Plan for Floating Nuclear Power Plants in the South China Sea

On 28 April 2018, the Russian nuclear corporation Rosatom announced the official departure of its first floating nuclear power plant, Akademik Lomonosov, from Saint Petersburg, where its construction had started in 2009, to Pevek in the Arctic district of Chaunsky.

In that northern most town of Russia, Akademik Lomonosov will be connected to the grid and provide electricity for the locals through its two 35-MWe KLT-40S nuclear reactors. While touted by Rosatom as a major achievement of the Russian nuclear industry and a potential product for the nuclear export market, the deployment of Akademik Lomonosov has also caused concerns from environmental activists, citing safety risks due to the rough environment of the Arctic Ocean, where the nuclear power barge will be operated, and its limited protection features in comparison with modern land-based nuclear power plants. Although naming the barge a "Floating Chernobyl" or a "Nuclear Titanic," as Greenpeace already did, may be premature given Russia's decades of experiences operating nuclear-powered icebreakers, Russia's neighbors and international organizations like the IAEA will still have to pay close attention to the operation of this new type of nuclear plant in order to protect Akademik Lomonosov from any safety or security incident with potential transboundary consequences.

The deployment of Akademik Lomonosov also serves as a reminder for Southeast Asian countries

that China has also planned to build and operate floating nuclear power platforms in the South China Sea. In 2016, two major Chinese state-owned nuclear suppliers, the China National Nuclear Corp. (CNNC) and China General Nuclear Power Group (CGN), announced a plan to jointly develop the first Chinese nuclear power barge for deployment in the South China Sea by 2020, the first of a planned 20 such reactors.

These reactors would not only provide much-needed electricity or desalinated water for the islands controlled by China, but also support oil and gas exploration by the China National Offshore Oil Corporation (CNOOC) – the owner of the HYSY981 deepwater oil platform, whose the deployment to the disputed sea in 2014 caused a major political clash between China and Vietnam. More recently, the confirmation by the state news outlet People's Daily of such plans has led to concerns that these floating nuclear power platforms, once launched to the South China Sea, could help China to accelerate its land reclamation and artificial island construction there.

Setting aside the legality and potential military dimension of the deployment of Chinese floating nuclear power plants to the South China Sea, which have been

mentioned elsewhere and deserve a separate discussion, this article focuses on a more obscure issue: the safety risk to China and the Southeast Asian countries located around the South China Sea from nuclear power barges in disputed water.

The Operational Risks: First, there are serious challenges unique to regulating the operational safety of floating nuclear power plants due to the novelty of the technology, the difficult operating

Russia's neighbors and international organizations like the IAEA will still have to pay close attention to the operation of this new type of nuclear plant in order to protect Akademik Lomonosov from any safety or security incident with potential transboundary consequences. The deployment of Akademik Lomonosov also serves as a reminder for Southeast Asian countries that China has also planned to build and operate floating nuclear power platforms in the South China Sea.

There are serious challenges unique to regulating the operational safety of floating nuclear power plants due to the novelty of the technology, the difficult operating conditions, and the inherent safety limitations of these plants (smaller containment and a higher probability of incidents, thanks to the risk of capsizing or collision).

conditions, and the inherent safety limitations of these plants (smaller containment and a higher probability of incidents, thanks to the risk of capsizing or collision). In this regards, experts have already voiced concerns over the capability of Chinese nuclear safety regulators to keep up with the rapid expansion in terms of quantity and diversity of technology in China's civil nuclear program. China currently has 39 operational land-based nuclear power plants of three different types of technologies (pressurized-water, pressurized-heavy-water, and fast-breeder) from multiple domestic and foreign vendors, and 18 other plants are under construction.

In 2011, the State Council Research Office of China found that the National Nuclear Safety Administration (NNSA), China's main nuclear regulatory body, was understaffed in comparison with similar agencies in other nuclear power countries, and the salaries of Chinese nuclear regulators are generally lower than their counterparts working for the nuclear industry. Furthermore, China has an ambitious plan to build new types of advanced reactors, including small modular reactors used for floating nuclear platforms, and export them to its neighbors, which will require the Chinese regulatory body to stretch out its workforce even more. Therefore, the NNSA and relevant organizations will face a significant challenge in ensuring the safety of China's floating nuclear fleet against the harsh weather and collision risks from the extensive maritime traffic of the South China Sea — especially in considering the fact that, unlike Russia, China has never built a nuclear-powered icebreaker and thus does not have sufficient experience in constructing, operating, or regulating floating nuclear platforms.

As the former Director General of the IAEA Mohamed ElBaradei once remarked, "A nuclear accident anywhere is an accident everywhere." Should any occur with the Chinese floating nuclear power plants — whether a radioactive spill into

the sea, or containment damage caused by tropical cyclones, or an accidental collision with passing ships — will have serious economic and psychological impacts not only for regional states like Vietnam, the Philippines, or Singapore, but also countries like Japan or South Korea that heavily depend on oil and gas supplied via maritime shipping routes over the South China Sea.

Nuclear Safety Cooperation in Jeopardy: Second, China's plan to operate floating nuclear plants in the South China Sea will also create nuclear safety cooperation issues with the coastal Southeast Asian countries. Normally, to demonstrate the safety record of its civil nuclear program to the international community, a country should ratify the Convention on Nuclear Safety and participate in the review process of the Convention by submitting a national report to the

The Southeast Asian countries to verify whether or not China has implemented necessary safety measures for its civil nuclear facilities. However, they will not be able to review such safety records for China's future floating nuclear fleet, as the Convention on Nuclear Safety is only applicable for land-based nuclear power plants.

triennial review meeting organized by the IAEA. Having put the Convention into force since 1996, China has frequently submitted to the review meetings its national report on nuclear safety, in which a map with China's claims in the South China Sea has recently been included. As these reports are often made public, it is possible for third parties like the Southeast Asian countries to verify whether or not China has implemented necessary safety measures for its civil nuclear facilities.

However, they will not be able to review such safety records for China's future floating nuclear fleet, as the Convention on Nuclear Safety is only applicable for land-based nuclear power plants. Although the countries surrounding the South China Sea can still request that China provide information in case of any accident with its floating platforms (in accordance with the Convention on Early Notification of a Nuclear Accident, which covers all types of nuclear reactors and has been ratified by all Southeast Asian countries and China), it will be obviously too late for the countries that might be affected

to implement any emergency response or mitigation plan once an accident has occurred. One might argue that this safety communication issue can be improved through the development of separate bilateral or multilateral agreements between China and the Southeast Asian states.

This was indeed the case when China and Vietnam signed an MoU on nuclear safety cooperation in November 2017 with a focus on, among other topics, information exchange and emergency preparedness and response. This MoU came not long after Vietnam looked for a better communication with China related to the safety of the Chinese nuclear power plants that have been built and operated near the Sino-Vietnamese border, including Fangchenggang, Yangjiang, and Changjiang, the first of which is located only 50 kilometers from the border between the two countries. But as the floating nuclear power plants will be deployed by China to a maritime area that is also claimed by Southeast Asian states like Vietnam or the Philippines, the conclusion of similar bilateral or multilateral agreements for these floating platforms is unlikely. These countries will not sacrifice their territorial claims for an MoU in nuclear safety.

However, without any channel to exchange information, the Southeast Asian claimants of the South China Sea islands will not be able to ensure that China will keep the highest standards of safety for its floating nuclear power plants, whereas China itself would lack an important piece of a rigorous regulatory system of nuclear safety — that is, the necessary pressure from peer reviews by other regional states.

Given such potential safety challenges facing the future Chinese floating nuclear power plants, and other problems like civil liability responsibilities in case of accidents with these platforms, or security risks from pirates or regional terrorist groups, the best-case scenario for the region would be China reconsidering the electricity supply source for its controlled islands, or at least a delay in the deployment of the fleet. But according to Chinese sources, the first demonstration prototype of a made-in-China

floating nuclear reactor will likely be tested in the Bohai Sea off China's northern coast "well before 2020."

The rapid development of the Chinese floating nuclear program makes such a best-case scenario improbable. That means that the Southeast Asian countries — with support from ASEAN and its Network of Regulatory Bodies on Atomic Energy (ASEANTOM), regional organizations and fora like the CSCAP, and other international partners with interests in the region like the United States, Japan, or South Korea — should soon seek at least a communication channel with China on how to exchange information on the safety of the fleet and the regulation of its operation, while not compromising the territorial claims of each country over the islands in the South China Sea. As the above discussion has shown, there will be no easy solution to the safety issues of the floating nuclear power plants, but finding such a solution is essential for a future South China Sea free of nuclear safety risks.

Source: <https://thediplomat.com/>, 10 May 2018.

NUCLEAR WASTE MANAGEMENT

USA

House Takes Up Bill to Revive Nevada Nuclear Waste Dump

The House is moving to approve an election-year bill to revive the mothballed nuclear waste dump at Nevada's Yucca Mountain despite opposition from home-state lawmakers.

Supporters say a bill slated for a vote ... would help solve a nuclear-waste storage problem that has festered for more than three decades. More than 80,000 metric tons of spent fuel from commercial nuclear power plants sit idle in 121 communities across 39 states.

The bill would direct the Energy Department to continue a licensing process for Yucca Mountain while also moving forward with a separate plan for a temporary storage site in New Mexico or Texas. It's past time for the federal government to "fulfill its obligation and permanently dispose

of the spent nuclear fuel sitting in our states, alongside our lakes, rivers and roadways," said Rep. John Shimkus, R-Ill., the bill's sponsor. "People are ready to do something rather than nothing," he added, predicting a strong bipartisan vote in favor of the bill.

President Donald Trump's administration has proposed reviving the long-stalled Yucca project 100 miles (161 kilometers) northwest of Las Vegas, but the plan faces bipartisan opposition from the state's governor and congressional delegation. Energy Secretary Rick Perry has said the US has a "moral obligation" to find a long-term solution to store spent fuel from its commercial nuclear fleet. Trump's budget proposes \$120 million to revive the Yucca project....

Nevada Sen. Dean Heller, a Republican, "I'm using every tool at my disposal to put an end to this administration's reckless plans to turn Nevada into a dumping ground for highly radioactive nuclear

waste," Rosen said in a statement. She called Yucca a "failed project" and "complete waste of time and taxpayer money." Nevada Democrats blame Heller for even allowing the vote, noting that he is a close friend of House Majority Leader Kevin McCarthy, R-Calif., who controls the House schedule....

While the fight over Yucca resumes, lawmakers say they hope to make progress on a plan to temporarily house tons of spent fuel that have been piling up at nuclear reactors around the country. Private companies have proposed state-of-the-art, underground facilities in remote areas of west Texas and southeastern New Mexico to store nuclear waste for up to 40 years. The nuclear industry has said temporary storage must be addressed since the licensing process for Yucca Mountain would take years under a best-case scenario.

Source: <http://www.wane.com/>, 10 May 2018.



Centre for Air Power Studies

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