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## OPINION — Manpreet Sethi

### Counter Pak Nuke Tactics

In Pakistan's nuclear strategy, the primary task of its nuclear weapons is not to deter that of India's, but to avoid an engagement with a superior military capability. Rawalpindi is aware of the risk of having to confront India as long as it pursues terrorism. But, it believes its nuclear weapons provide a shield that constrains India from militarily punishing it.

India has responded to this strategy by suggesting and illustrating (with Kargil) that there is space to fight a conventional war even in the presence of nuclear weapons. Over time, India has also tweaked its military doctrine to make this viable. This has obviously disturbed Pakistan. For, if an Indian conventional response can still be tailored to remain below Pakistani red lines, then its nuclear weapons have obviously failed.

Pakistan cannot afford this. It has to keep its nuclear weapons relevant and in the face of India, and the world, if it has to prevent a military offensive provoked by self-sponsored terrorism. It is in this context that the idea of battlefield use of nuclear weapons, or what are colloquially called TNWs, comes in handy. The very nature of such weapons projects a lowering of the nuclear threshold. The objective is to reclaim the space that India maintains exists for a conventional war despite the presence of nuclear weapons.

In playing this game, Pakistan is not seeking to exploit the military aspect of the TNW. It has no illusions about the military

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effectiveness of the weapon. At the same time, Pakistani decision makers well understand that escalation control, even in the event of a single use of a tactical nuclear weapon, could well have profoundly tragic consequences. But, the policy of brinkmanship is used by the country for deterrence. In TNW, Rawalpindi has found another tool of keeping India, and by extension the international community, on the edge. In its scheme of things, Pakistan would not have to use the TNW, but only the

threat of their use, to deter India.

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Pakistan is using its TNWs, therefore, to send a political signal, not to win on the battlefield. In fact, it realises that in order to prevail even in a tactical situation, it would need a large TNW arsenal, which may be beyond the capacity of its fissile material accumulation. But, the purpose of the threat to use low-yield nuclear weapons on military targets is not to cause battlefield damage of a substantive nature, but to threaten to create a new situation that deters India from a conventional response.

Pakistan's strategy of exploiting the political potential of TNWs is based on two assumptions. One, their use would bring about a sufficient material and psychological shift in hostilities to stun India into a halt. Confronted with the prospect of further escalation, the nature of Indian polity would choose war-termination over escalation.

This, Pakistan believes, would checkmate India's ability to exploit its superior conventional capability since it would not have the will to act. A second assumption that Pakistan makes is that TNW use would not be seen as provocation enough by India, or the rest of the world, to merit a nuclear response that would lead to further escalation. So, the international community will stop India from continuing its conventional campaign or undertaking nuclear retaliation. As is evident, Pakistan is not miscalculating India's capability, but its credibility to act.

India's response to Pakistan's TNW must address these assumptions. In fact, India does not need to develop TNWs of its own, but to focus on enhancing the credibility of its nuclear deterrence. Pakistan does not doubt India's capability, but its political will in mounting retaliation. It tends to believe that India, despite the use of the TNW, would face an asymmetry of interests in mounting a nuclear

response. The doubt in the mind of the adversary appears to be whether India with a strategic culture of military restraint would find it prudent, and more importantly, morally acceptable to inflict damage (and risk more on itself) in response to a threat that is not itself mortal.

It is this doubt that India must remove from the adversary's mind. Having based its deterrence on the threat of punishment, it is imperative that the assuredness or the certainty of retaliation to cause

**The purpose of the Indian nuclear weapon is narrow and limited to safeguarding the country against nuclear coercion, blackmail or its possible use. The path it has chosen to achieve this is through the suggestion of deterrence by punishment. This strategy seeks to deter nuclear use by conveying a certainty of retaliation in response to a first use, irrespective of its yield or choice of target. For India, therefore, any use of the nuclear weapon would have strategic implications. Pakistan may have introduced a new element with TNW, but India must let it be known that it would play the nuclear game according to its own rules.**

unacceptable damage be sufficiently and credibly conveyed. This could be achieved by reinforcing the public profile of the nuclear command and control at both the military and the political levels. There is need for greater transparency of structures and processes that assure nuclear retaliation. Knowledge of the fact that measures are being taken (without these being disclosed) to ensure survivability of the arsenal, as well as the chain of command at the primary, secondary and tertiary levels, and of the communication systems, should be occasionally mentioned. Secondly, it should also be made widely known that Indian troops have the ability to fight through

tactical nuclear use. This would send a message of preparedness to handle such use without bringing conventional operations to a halt or even confronting the political leadership with the choice of war termination, as assumed by Rawalpindi.

Thirdly, strengthening the profile of the SFC in public perception is necessary. The knowledge of the existence of the organisation that is mandated and is prepared to handle deterrence breakdown would assure the Indian public, while also sending a signal of intent and purpose to the adversary. Fourthly, better evidence and communication of political resolve to undertake retaliation is necessary. Periodic statements from authoritative levels like the National Security Adviser or Commander-in-Chief, SFC, or occasional news reports about meetings of Political Council of the NCA would signal the seriousness of government's attention to the nuclear backdrop that confronts India.

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Source: <http://www.newindianexpress.com/>, 24 July 2014.

**OPINION – Samir Saran and Abhijit Iyer Mitra**

**Knowing India’s Nuclear Credentials**

There has been a concerted attack on India from the usual suspects in recent days even as it was entering into negotiations to formally accede to the NSG. As if on cue, *Jane’s Intelligence Review* carried out a “(non)-exposé” of an Indian military nuclear facility in Karnataka. As exposés go, it was lame even by Jane’s standards. The nature of the facility and location have been publicly available since 2010. Yet, this new “exposé” was carried by all mainstream print news outlets and predictably sensationalised with everyone feigning alarm and anxiety. This

manufactured outrage culminated with a sanctimonious editorial in *The New York Times* that was remarkable for the sheer incoherence of its own arguments. As the designated chief of the non-proliferation ayatollahs (with blinkers) and representative of a motley anti-India group in the US that is shrinking ever so rapidly, this too was on expected lines.

**Assault on Credentials:** Nevertheless, it is important to dismantle the uneasy arguments of this concerted assault on India’s credentials. The first proposition that must be taken issue with is the propagation of a falsehood that Pakistan and its reckless build-up of nuclear stockpile is somehow driven by India’s

posture. While Pakistan’s careless impulse may be a result of more than one central factor, it is important to understand that this may have a lot to do with its suspicion of American intentions. The oft-quoted argument is that Pakistan seeks to equalise the conventional mismatch with India through a misguided reliance on numbers of strategic and tactical warheads. The irrationality and illogic of this behaviour has been proven by the fact that a country like North Korea has deterred both the US and South Korea with explosions that may not even have been nuclear. Pakistan’s vertical proliferation has no mooring to India’s strategic programme — only to its own paranoia. The question is what fuels this? There is no denying the fact that Pakistan was able to obtain “nuclear immunity” for its sub-conventional activities against India with even 10 warheads. It may

well be the fear of the US that motivates its build-up today.

One motivator is the pressure the US has been applying on Pakistan (without success due to the China factor) to sign onto the FMCT, which will forever cap the Pakistani arsenal. Contrary to what the commentary would have us believe, the FMCT, instead of curbing fissile material, has demonstrably accelerated Pakistan’s programme. So much for flawed logic. The second is the fear of the American “Plan B”, which involves the seizure and confiscation of much of Pakistan’s nuclear arsenal. The former has driven Pakistan to enrich their extant stockpile of

radioactive material to weapons grade at breakneck speed. The latter has ensured that Pakistan is rapidly weaponising its fissile stock, in order to disperse and complicate any such weapons seizure plans. These facts are well understood in Washington policy circles. The exposés and op-eds of the past weeks are for most just another edition of Aesop’s fables.

The second issue has to be the demonstrated lack of understanding of the reality that shaped the landmark civil nuclear agreement between the US and India. This nuclear deal was based on one clear principle — that India’s military programme would irrevocably be separated from the civilian programme. This was not an optimal solution for

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India or for the P5, but like all international agreements it was based on arriving at an outcome that would benefit all parties and enhance the global order.

IAEA Director General Mohammed El Baradei in an op-ed in the *Washington Post*, specifically welcomed the deal without reservation, his rationale being "either we begin finding creative, outside-the-box solutions or the international nuclear safeguards regime will become obsolete." This is now accepted wisdom.

The IAEA has gained unprecedented access to India's nuclear facilities. India has accepted additional protocols this June, and has strengthened its own export laws. Significantly, the same journals and reports confirm that India's own arsenal has remained stable over the period with no increases despite the turbulence in the neighbourhood. The benefits of bringing India inside the 'non-proliferation tent' are therefore vast, visible and tangible.

While these editorials and reports may very well have got their facts and numbers right, the analysis is so convoluted that the facts they quote cease to be relevant. The argument goes that India needs to sign the FMCT, the CTBT, and agree to mutual weapons reduction with China and Pakistan, since it is the nuclear deal with the US that has set the cat amongst the pigeons. Here then is some measure of reality. India is already providing active support to the FMCT negotiations — it is a work in progress, not yet a concrete treaty. It has been Pakistan that has been blocking the work at the conference on disarmaments negotiations.

Additionally, India's signature on the CTBT is explicitly linked to a similar US and Chinese commitment. As long as they do not ratify these two treaties, India has a voluntary unilateral moratorium on testing. What is holding up Indian accession is US and Chinese accession. Experts in Beijing claim that China's expansion and modernisation of its nuclear forces is being driven

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by the ill-advised and deeply destabilising withdrawal of the US from the ABM treaty. This has nothing whatsoever to do with India. India, therefore, is first being made the whipping boy for the failure of the American non-proliferation lobby in their own country and then it has to accept blame for the complex relations the US shares with Pakistan and China that is driving these Asian allies to increase their arsenals. Can we get real, please?

Source: <http://www.thehindu.com/>, 24 July 2014.

**OPINION — Gurmeet Kanwal**

**India-US: Nuclear Ayatollahs and the Politics of Non-Proliferation**

In a completely partisan and somewhat condescending editorial in early-July 2014, *The New York Times* wrote: "If India wants to be part of the nuclear suppliers group, it needs to sign the treaty that prohibits nuclear testing, stop producing fissile material, and begin talks with its rivals on nuclear weapons containment."

The editorial is sharply critical of and vehemently opposes India's efforts to acquire membership of the NSG. It bases its criticism on a report by IHS Jane's that India is in the process of enhancing its capacity to enrich uranium – ostensibly to power the nuclear reactors on the INS Arihant and future SSBNs, but much in excess of the requirement. This, the editorial says, is causing anxiety to the Pakistanis and has raised the spectre of an arms race in Southern Asia.

It is obvious that the editorial writer understands neither the background to nor the present context of India's nuclear deterrence. As stated in a letter written by then PM Vajpayee to US President Clinton after India's nuclear tests at Pokhran in May

1998 (in an unfriendly act, the letter was leaked to the media by the White House), the primary reason for India's acquisition of nuclear weapons was the existential threat posed by two nuclear-armed

states on India's borders with both of which India had fought wars over territorial disputes. The China-Pakistan nuclear and missile nexus, including the clandestine transfer of technology from China to Pakistan, has irrevocably changed the strategic balance in Southern Asia by helping Pakistan to neutralise India's superiority in conventional forces and has helped Pakistan to wage a proxy war under its nuclear umbrella.

Since then, the nuclear environment in Southern Asia has been further destabilised. China's ASAT test, BMD programme, efforts aimed at acquiring MIRV capability and ambiguity in its NFU commitment, while simultaneously rapidly modernising the PLA and its efforts to establish a 'string of pearls' by way of ports in the Indian Ocean, are a cause for concern for India.

Similarly, Pakistan is engaged in the acquisition of 'full spectrum' nuclear capability, including a triad and TNWs, which invariably lower the threshold of use. Pakistan has stockpiled a larger number of nuclear warheads (100 to 110) than India (80 to 90) and is continuing to add to its numbers as it has been given unsafeguarded nuclear reactors by China. In view of several mujahideen attacks on Pakistan's armed forces' establishments during the last few years, there is apprehension in the international community, entirely justified, that some of Pakistan's nuclear warheads could fall into jihadi hands.

Some statements made by *IHS Jane's* in its report are factually incorrect. The research group has assessed that the new Indian uranium enrichment facility at the Indian Rare Metals Plant near Mysore would enhance India's ability to produce 'weapons-grade' uranium to twice the amount needed for its planned nuclear-powered SSBN fleet. The report does not say how the research group arrived at this deduction. Also, the nuclear power reactors of SSBNs require uranium to be enriched only up to 30 to 40 per cent. Weapons-grade uranium must be enriched to levels over 90 per cent.

For the record, the Government of India has denied reports that it is 'covertly' expanding its nuclear arsenal. An Indian official told *The Hindu* (Atul Aneja, "India trashes report on covert nuclear facility," 22 June 2014) that the report was "mischievously timed" as it came just before a meeting of the NSG. He said, "It is interesting that such reports questioning

India's nuclear credentials are planted at regular intervals."

... The Indo-US civil nuclear cooperation agreement of 2005 gives an exemption to India's nuclear weapons facilities and stockpiles of nuclear weapons fuel from inspections by the IAEA and India is at liberty to set up additional military facilities using unsafeguarded materials if these are considered necessary. India has agreed to bring 14 nuclear power reactors under international safeguards. Eight military facilities, including reactors, enrichment and reprocessing facilities and three heavy water reactors will remain out of the purview of IAEA safeguards.

India has been a responsible nuclear power and has a positive record on non-proliferation.

India has consistently supported

total nuclear disarmament and is in favour of negotiations for the FMCT. Non-proliferation ayatollahs should channelise their efforts towards identifying and shaming the real proliferators.

Source: <http://www.eurasiareview.com/>, 17 July 2014.

#### **OPINION – Amit R. Saksena**

#### **Incertitude of Indian Nuclear Doctrine: BJP's Stand on the Issue**

BJP's recent election manifesto fiasco brought to the fore a startling and alarming revelation. Is our political cohesion so weak, that a mere media misinterpretation can raise a furore over an issue, as sensitive as the national nuclear doctrine? Why were top level politicians themselves confused and making contradictory statements about a topic, which should have an explicit level of understanding amongst the political echelon? Or has the significance of the nuclear doctrine depreciated to the point of no credibility? Has the BJP lost its confidence in the very policy instated by the party only 16 years ago?

Fortunately, the answer to the last question seems to be a reassuring negative. Narendra Modi and other senior party officials independently told members of the press in different interviews how the NFU was a 'well thought-out stand of the [former BJP-led coalition government]', and a 'reflection of our cultural inheritance', and the new government will not scrap the policy. But in that case, what does

the point on 'Independent Strategic Nuclear Programme', tucked away at the bottom of the said manifesto entail? Allocating more resources to further increase the nuclear arsenal, it seems.

This would also answer the question on the present credibility of the doctrine. For BJP, the primary issue is to deal with Pakistan and China, along the line of 'zero tolerance' on internal as well as external security, as promulgated by the party. With Islamabad's recent nuclear technological development trend (MIRVs, TNWs), and Beijing's sheer number of warheads, substantial increase in the arsenal as well as developing competitive weapon systems is the only way to counter these perceived threats. Mitigating the threat further by deploying a sea-based deterrence mechanism, to complete its nuclear triad, should be on BJP's priority list. Also, shifting towards a more transparent nuclear posture that is both reassuring to the Indian public and more credible vis-à-vis adversaries is what is desirable.

India's nuclear doctrine, especially NFU has for long been criticized for not being in tandem with 'credible minimum deterrence'. Nuclear Doctrines are salient features of any national security architecture, and declaring their revision from time to time credits the competence of a government. However, actually revising the NFU in an unprovoked state of affairs would only abolish the psychological and ethical barriers constricting the possible use of nuclear devices. It is no surprise then that top bureaucrats and national security architects often speak about revising India's NFU.

Pakistan's position and the fear that China may be discarding its own nuclear strategy are the major points that Shiv Shankar Menon mentioned in his 2010 speech, advising NFU to be applicable only against non-nuclear states. Former Foreign Secretary Kanwal Sibal believes reconsidering the

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**The NFU is a core principle for the Indian Nuclear Doctrine, providing the basis not only for all the other elements (CMD, punitive retaliation), but also for India to possess nuclear weapons in the first place. Revising the NFU policy will lead to New Delhi losing its credibility with the NSG, from where India has been sourcing its nuclear fuel requirements for its civil energy programme, allowing the miniscule domestically procured uranium to be used in the weaponization efforts.**

Indian doctrine to ditch NFU, will be 'a useful lever to push Pakistan towards a no-first use policy'.

Justified in their opinion, however, the opponents of revising NFU do hit the spot when they say this move will only be seen as a provocation to allies and enemies alike, without affecting the status quo at the moment. In fact, the only future projection for such a move can be an increase in

Islamabad's nuclear proactiveness, and an alerted Beijing, taking charge of matters long ignored (for public record, China does not recognize India as a nuclear capable state).

Breaking away from the pledge of NFU will certainly grant India the flexibility it requires to enhance its military and diplomatic conduct. However, on the downside, India will fritter away any credibility and strategic gains of being a de facto nuclear power, re-inviting diplomatic disdain and possible economic sanctions. The cons heavily outweigh the pros in this case. The NFU is a core principle for the Indian Nuclear Doctrine, providing the basis not only for all the other elements (CMD, punitive retaliation), but also for India to possess nuclear weapons in the first place. Revising the NFU policy will lead to New Delhi losing its credibility with the NSG, from where India has been sourcing its nuclear fuel requirements for its civil energy programme, allowing the miniscule domestically procured uranium to be used in the weaponization efforts. And with

countless other issues at hand, international criticism for reverting back to a savage nation state is something the new government can do without.

The government's confused stance on the nuclear doctrine can be evidenced by the fact that since declaring NFU, back in 1998, New Delhi has twice tried to dilute the constrictive nature of it (in 2003 by taking WMD's in provision for nuclear retaliation, and then in 2010 by limiting NFU to non-nuclear states only). However, this remains speculative

unless the upcoming government confirms the trend by amending the doctrine again.

On an entirely different note, to accuse the Congress to have 'fritted away' the nuclear advantage is strident on the BJP's part. Under Manmohan Singh's stewardship, India got reacceptance into the global mainstream nuclear consortium, which further abetted development and arsenal build-up, leading to several technological strides (Agni ICBM Series, the Prithvi ADS, Arihant and Dhanush, etc.).

Conclusively, it is a given that NFU is a unilateral commitment, and can be discarded. If New Delhi had even an iota of confidence in the policy, it would have taken the Chinese guarantee at face value, and not proceeded with Operation Shakti. Should BJP come to power, a better alternative would be to get China, and by that extension, Pakistan, to sign a regional NFU agreement. Regardless of policies, should the situation ever present itself when all conventional options have been exhausted to the brink of total destruction, India too would ditch the NFU and go for the silos, irrespective of which government sits at the center.

Source: <http://www.eurasiareview.com/>, 18 July 2014.

**OPINION – Isamu Ueda**

**Japan Remains Committed to Non-Nuclear Principles**

In recent years, Japan has found itself in a rapidly changing security environment. The global balance of power has shifted and various new threats have emerged within the region, including the development of weapons of mass destruction and ballistic missile systems that may soon be capable of delivering them. These changes have sparked serious debate within Japan about how best to meet the changing security needs of the people of Japan and to protect their lives and livelihoods.

Some have gone so far as to suggest that Article 9 of the Constitution, which famously declares that, "the Japanese people forever renounce war as a sovereign right of the nation and the threat or use of force as means of settling international disputes," must be fundamentally revised if we are protect ourselves and our national interests. The Japanese

government has long taken the position that while the right of self-defence is recognised by the Constitution, this can only be exercised in response to a direct military attack against Japan and the use of force must be limited to the minimum necessary to repel the attack.

Others have sought to expand this interpretation to mean that the Japanese Constitution does not prohibit any form of self-defence that is recognised as legal under international law, including forms of "collective self-defence" sanctioned, for example, by a United Nations resolution. Taken to its logical conclusion, this could mean that Japanese troops would find themselves in combat roles in places far from the homeland. This would run counter to the pacifist spirit of the Constitution

and Japanese people's strong desire for peace. It could provoke grave concern among our Asian neighbors, who still bear the bitter memories of Japanese military aggression in the 20th century.

Since its founding in 1964, the New Komei party has remained dedicated to a peaceful path for Japan. Central to this is our commitment to the Japanese peace constitution as a self-willed undertaking by the Japanese people to refrain from any use of force beyond the minimum requirements of self-defence. We see Japan's "peace constitution" as an expression of high and universal ideals in international relations, specifically, the peaceful resolution of conflict through diplomacy and dialogue. As members of the ruling coalition, we also have a responsibility to deal with the real challenges facing Japan, including questions in the security realm – how best to protect the lives and peaceful existence of the Japanese people.

In May 2014, we began deliberations with our coalition partners, the Liberal Democratic Party, on how to clarify the constitutional limits on self-defence in ways that contribute to deepening mutual trust within the US-Japan Alliance and to stability within East Asia.

**Underlying Spirit of the Peace Constitution:** We approached these discussions with the determination to protect and preserve the underlying spirit of the peace constitution which, along with the US-Japan alliance, has been central to Japan's prosperity and security in the decades

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since the end of WW II. At the outset, we insisted that any interpretation must be based on and logically consistent with past government interpretations. This, we argued, was essential if Japan was to be recognized as a nation of laws. PM Abe expressed his support for this approach at the beginning of the discussions. On July 1, 2014 agreement was reached on a Cabinet Decision which, among other things, establishes three core conditions limiting the use of force.

These are: 1) that an armed attack against a foreign country with which Japan has a close relationship produce a clear danger that Japan's national survival will be threatened and its citizens' right to life, liberty and the pursuit of happiness fundamentally undermined; 2) that there are no other appropriate means available to protect Japan's citizens; and 3) that any use of force be kept to the minimum necessary. These strictly defined conditions limit potential military actions to those that are genuinely necessary for Japan's defence. They do not open the path to the overseas dispatch of Japan's SDF in the exercise of military force. The Cabinet Decision reaffirms Japan's commitment to the three non-nuclear principles of not possessing, not producing and not permitting the introduction of nuclear weapons in its territory.

It also clarifies that Japan has no interest in becoming the kind of military power that would present a threat to other countries. Rather, the revised interpretation would enable a more closely coordinated response by Japan's SDF and US forces to situations arising in the country's immediate vicinity that could gravely impact the nation's peace and security. This Cabinet Decision only provides guidance for future legislative measures. Such laws, which scrupulously define the limits of permissible action by the SDF, must be debated and adopted by Japan's parliament to give effect to the new policy. We hope to use the process of legislative deliberation as an opportunity to inform world public opinion and gain wider understanding of Japan's true intent in making these changes.

Among the goals stated in the Cabinet Decision is that "the Government, first and foremost, has to create a stable and predictable international

environment and prevent the emergence of threats by advancing vibrant diplomacy..." In keeping with this, it adopts the policy that Japan should be a country that makes proactive contributions to peace. For the New Komei party, this means engaging in multifaceted diplomacy based on the spirit of the peace constitution.

**China:** Nowhere is such diplomacy more vitally important than with China, South Korea and our other neighbours in Asia. Over the decades, the New Komei party has engaged actively with our Chinese counterparts, seeking to maintain and develop the bonds of trust and friendship that can serve as the basis for mutually beneficial relations. In January 2013, the leader of New Komei, Natsuo Yamaguchi, traveled to Beijing to meet with General Secretary Xi Jinping. He brought with him a letter from PM Abe and took the opportunity to urge the early holding of a Sino-Japanese summit, stressing his confidence that differences between China and Japan can be resolved through persistent efforts at dialogue. Ultimately, if Japan is to live up to the promise of our unique and remarkable constitution, it must be through an unwavering commitment to "advancing vibrant diplomacy" on many fronts. This must be our proactive contribution to peace.

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Source: <http://www.eurasiareview.com/>, 21 July 2014.

**OPINION – P.R. Chari**

**Thinking the Unthinkable: Promoting Nuclear Disarmament**

In a barely noticed event, forty bishops, scholars and activists had gathered in the Catholic University of Notre Dame in end-April to explore how the world could eliminate nuclear weapons. University President Rev Jenkins cited Pope John XIII's message after the Cuban Missile Crisis (1962) that "nuclear weapons are morally tolerable only for the purpose of nuclear deterrence, and even then, only as a step on the way toward progressive disarmament."

Apropos, non-proliferation advocates had met in New York in May 2014 for a two-week Preparatory Committee meeting to pave the way for the NPT Review Conference in 2015. The bland statement issued by them after their confabulations urged the NWS to hasten their efforts to achieve nuclear

disarmament in an “irreversible, transparent and verifiable manner,” as envisaged in Article VI of the NPT. However, the preparatory meeting also expressed its disappointment that a conference to discuss the establishment of a nuclear weapon-free zone in the Middle East, visualised at the last NPT Review Conference in 2010, has not yet been held. It is no secret that this proposal is directed against Israel's undeclared nuclear weapons arsenal, which has motivated its regional neighbours to stockpile chemical and biological weapons to deter Israel.

More distressingly, the Preparatory Committee meeting could not even negotiate a final document for being placed before the 2015 NPT Review Conference.

In other negative developments, India, though not a NPT signatory, has revealed that it had tested an intermediate-range ballistic missile from an underwater platform. They are planned to equip its nuclear submarine INS Arihant. North Korea has declared that it means to carry out a fourth nuclear test. Analysts believe this would accelerate Pyongyang's development of a miniaturised warhead to be delivered by a ballistic missile. South Korea's President Park Geun-hye warned that another nuclear test by Pyongyang would trigger a “nuclear domino” effect, since both South Korea and Japan would be under great domestic pressure from their alarmed people to develop and deploy nuclear weapons to deter North Korea. Neither country is believed to be very far from becoming a nuclear weapon power if they so choose in view of their advanced atomic energy programmes.

Efforts to rein in Iran's nuclear progress by bringing its uranium enrichment programme under safeguards have received a setback with the rise of Islamic (Sunni) forces in Syria and Iraq. Iran is needed to balance these disruptive forces. Its ambitions to acquire nuclear weapons might, therefore, get placed on the backburner. Should Iran go nuclear a “nuclear domino” effect could ensue in the Gulf and

Middle East regions with many regional countries seeking nuclear weapons to deter Iran. Further, the technological abilities of several developing countries have been growing rapidly. Non-proliferation efforts cannot succeed much longer by gating the spread of technology, but require the difficult political issues driving nuclear proliferation to be addressed.

In its latest Annual Report on Armament and Disarmament the SIPRI has assessed the total number of nuclear weapons worldwide to be around 16,300, with 93 per cent being held by the US and Russia. The remaining are held by the seven other NWS viz. UK, France, China, India, Pakistan, Israel and North Korea. SIPRI has noted that India and Pakistan continue to increase their nuclear stockpiles, and that there is no “genuine willingness to work toward complete dismantlement of their nuclear arsenals. The long term modernization programs under way in these states suggest that nuclear weapons will remain deeply embedded elements of their strategic calculus.” The modernisation of the nuclear arsenals held by the US and Russia like in the sphere of missile defense has gained much attention, but the steady efforts being made by other NWS to improve their arsenals proceed under the radar screen.

Naturally, the non-nuclear adherents to the NPT view these developments askance, and their resentments could surface in the 2015 Review Conference with threats to withdraw from the NPT.

The question now arises whether nuclear non-proliferation is a lost cause and whether nuclear disarmament remains a desirable but elusive goal? The simple answer to this despairing question is “No.” Why? Nuclear weapons are different in that they can effect global destruction in very short time frames; the consequent radiation effects would last for centuries. And, this massive devastation could occur, not by deliberate use, but by accident. The nuclear age is replete with examples of near-misses

**In other negative developments, India, though not a NPT signatory, has revealed that it had tested an intermediate-range ballistic missile from an underwater platform. They are planned to equip its nuclear submarine INS Arihant.**

**The modernisation of the nuclear arsenals held by the US and Russia like in the sphere of missile defense has gained much attention, but the steady efforts being made by other NWS to improve their arsenals proceed under the radar screen. Naturally, the non-nuclear adherents to the NPT view these developments askance, and their resentments could surface**

that could have led to the use of nuclear weapons by misapprehension or inadvertence. Nuclear theology urges that these weapons are irreplaceable to provide deterrence against adversaries. But reliance on nuclear weapons is hazardous and is becoming less effective with the passing years.

Again, why? There is little controversy that, at present, the main security threat to nations arises from terrorism and non-military threats like climate change or migration. Nuclear weapons have no utility to meet them.

Source: <http://www.eurasiareview.com/>, 22 July 2014.

**OPINION – Paul Ingram**

**Iran: Beyond Concessions and Expectations**

As predicted, the six-month deadline for negotiations over Iran's nuclear programme passed without a final agreement this July 2014, yet negotiators claim significant progress was made and have extended the deadline into November, 2013. What are the chances of an agreement over the coming four months given the apparently insurmountable distance between the negotiating positions — and are parties simply engaged in wishful thinking? Much of the commentary on these talks has focused on the technical gulf that separates the parties.

While it has already made significant concessions by freezing the expansion of its operations, halting its production of uranium enrichment to 20 per cent and down-blending its stocks or fabricating fuel plates from them for its research reactor, Iran wants to keep its centrifuges (it has around 10,000 operating and another over 9,000 in reserve) and maintain its enrichment facilities at Natanz and Fordow (the latter deeply buried in a mountain, a fact deeply provocative to the United States and

Israel who seem to believe that they have a right to hold Iranian nuclear facilities at risk of attack). This issue over enrichment capacity, alongside the sticky issue of the time period Iran would be in special measures, is at the crux of the negotiations because it is directly associated with the chosen measure of break-out time: the time it would take for Iran to enrich sufficient fissile material for a nuclear weapon after throwing out inspectors.

The narrative widely held in much of the world is that while Iran may not have made a concrete decision to develop nuclear weapons, their actions point to a clear desire to pursue this end at some future stage. Thus, Iran is seen to be undermining the non-proliferation treaty and flouting its obligations, in spirit if not the letter, and that this threatens future stability and non-proliferation norms. This assumption is deeply held because otherwise Iran's nuclear programme appears to make little rational sense. Why invest so heavily in developing its enrichment capability when its only power reactor, based in Bushehr, has been supplied by Russia and can only be fuelled for the indefinite future by uranium fuel rods from Russia?

The current supply contract lasts until 2021, but Iran does not possess the intellectual property rights nor the technology to manufacture its own fuel rods. Any other reactors requiring fuel are well over a decade away from operation, and will probably have similar limitations on the fuel they accept. Iran's response, that it has experienced politically-motivated restrictions in the past around its access to uranium fuel is factually correct, but does not actually answer the practical challenge that the Russians — for now — have a contractual and technical stranglehold over their supply, with or without a fully-functioning domestic enriched uranium supply.

And unless the Iranians convert the heavy water

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Arak reactor, currently under construction, into a light water reactor, they will not need enriched uranium for that either. However, just because the uranium enrichment programme does not make economic sense, does not in itself prove that Iran is developing it for military purposes. Many of those countries most critical of Iran have themselves pursued dimensions of civil nuclear power programmes that make little economic sense, sometimes because of a military dimension, but often not. Just look at the extreme white elephant of the UK's THORP, one of the country's largest engineering projects ever attempted, and now largely defunct. There are several drivers behind Iran's nuclear power programme: national prestige linked to the perception of this technology being cutting-edge, a symbol of modernity; the narrative of challenging technological apartheid; the need for energy diversity in an age of climate change and limited reserves. It is not difficult to explain the psycho-nationalistic factors behind the country's enthusiasm for the nuclear programme that have little or nothing to do with possible military options. Nevertheless, in the west the perception of Iran as an Islamic revolutionary regime with an agenda to export its ideology suggests its leadership would pursue tools to challenge the international status quo. The prevention of nuclear proliferation is a powerfully persuasive agenda in its own right, but to keep nuclear weapons out of the hands of those who would seek to assertively challenge the current world order must surely sit at the top of the international agenda. But perhaps the most powerful explanation is that developing a nuclear capability is the path that many western states, particularly those indoctrinated in the value of nuclear deterrence, would themselves take if faced with the same strategic circumstances as Iran.

BASIC's Trident Commission earlier in July 2014, for example, recommended Britain renew its nuclear deterrent, not because of any imminent threat, but because there still remains possible (unlikely,

though not negligible) scenarios in which a British nuclear deterrent could play a decisive role. It is inconceivable that this logic does not have influence upon Iranian leaders too, when they face far more salient and urgent security challenges to their national integrity. In this way, western empathy with the Iranian position may actually lead to a position more hostile to Iran's nuclear programme.

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international system. And while Iran is taking some time to develop efficient working centrifuges, they can only improve, and their capacity to enrich efficiently will also advance.

The current metrics so often referred to — Iran's technical ability to break out and the imperative to lengthen this time through negotiations — is like King Canute turning back the waves. We may witness in these negotiations some form of agreement in the next few months that involve some dissatisfying restraint on the part of the Iranians (which is better than no deal) in return for some level of sanctions relief (though far from a full removal—that's not in the president's gift even if he were minded to offer it). We can and must develop ever more sophisticated inspection and verification technologies and procedures that can coincide with stronger non-proliferation measures to assure the international community that nuclear programmes are strictly civil in nature, and whose material and technology cannot be diverted.

**Ultimately, however, the only longer-term barrier to nuclear proliferation is a system that is non-discriminatory and cooperative, cemented in international agreement in the interests of global security. And this means far more serious moves towards a world free of nuclear weapons. The problem with this approach is that, taken to its logical conclusion, it demands even deeper changes in posture by the 'world powers' than it does by the Iranians.**

Ultimately, however, the only longer-term barrier to nuclear proliferation is a system that is non-discriminatory and cooperative, cemented in

international agreement in the interests of global security. And this means far more serious moves towards a world free of nuclear weapons. The problem with this approach is that, taken to its logical conclusion, it demands even deeper changes in posture by the 'world powers' than it does by the Iranians. It requires them to exercise self-restraint in the use of their power, just as domestically the kings of old came to realize the hard way that their exercise of arbitrary justice had such a devastating impact upon their domestic legitimacy. And it requires those world powers to take their responsibilities towards global security and stability as members of the UN Security Council far more seriously, and to temper their pursuit of national security and influence at the expense of others.

Forget the straw man that says that if the British were to scrap their nuclear weapons it would have little or no effect on the predisposition of countries like Iran to forgo their nuclear programme. It is clear that the modernisation programmes within the nuclear weapon states are sending a clear signal to the majority of NPT member states, like Iran, that have already expressed their support of the non-proliferation regime that their confidence is unwarranted. And states that feel betrayed or made a fool of – particularly when it comes to something as critical as national security – do not take such lessons lying down forever.

Source: <http://newagebd.net/>, 28 July 2014.

**NUCLEAR STRATEGY**

**INDIA**

**India to Get Two More Missile Test Facilities**

India will set up two more missile test range facilities, one each in Andhra Pradesh and Andaman and Nicobar Islands, parliament was informed on July 25, 2014. Defence Minister Arun Jaitley told the Lok Sabha that there was no proposal to set up a Missile Launcher Project in the newly formed state of Telangana. But the DRDO had identified Rutland Island in Andaman and Nicobar Islands in Krishna district in Andhra Pradesh for setting up missile test range facilities.

Source: <http://www.ndtv.com/>, 25 July 2014.

**BALLISTIC MISSILE DEFENCE**

**SOUTH KOREA**

**US Missile Defense on Korean Soil not Related to China: Seoul**

South Korea on July 21, 2014 brushed aside Chinese concerns about the possible deployment of an advanced US missile defense system on its soil, stressing its purpose would be to detect North Korean missiles launches. As an integral part of the US-led air defense system for the region, the THAAD is designed to intercept short-, medium- and intermediate-range ballistic missiles at high altitudes in their terminal phase.

Its possible deployment on Korean soil has drawn keen attention as it would mean Seoul joining the US MD system, also joined by Japan, which mainly aims to counter the rising influence of China in the region.

"The system, if deployed, would not cover beyond the Korean Peninsula, so we can say that it does not much relate to China," defense ministry spokesman Kim Min-seok told a regular briefing. Noting that neither its range nor altitude would

threaten China, he said the possible deployment of "X-Band Radar also does not carry significance for China as its main objective is to detect ballistic missiles fired from North Korea." As part of a THAAD battery, X-Band Radar, which operates independently, would provide the US detection capabilities extending across much of eastern China. "China has not directly mentioned the THAAD system in an official fashion so far," Kim said.

But Beijing has long voiced its opposition, with Chinese Vice Foreign Minister Liu Zhenmin saying earlier in July that he believes Seoul will be "cautious" on the issue and that his country does not want to "see tension or an arms race" in the region. South Korea has made it clear that it has no plan to buy the THAAD battery for deployment on the Korean Peninsula, but that it is not opposed to the US deploying it here to better protect its forces stationed in Korea.

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Seoul has been working to develop its own defense system known as KAMD, a low-tier, multiple-interception program, while trying to upgrade its current Patriot Advanced Capability-2 interception system to the PAC-3 system and develop L-SAM.

Source: <http://english.yonhapnews.co.kr/>, 21 July 2014.

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### **US Dismisses Russian Concern about THAAD System in S. Korea**

The United States said on July 24, 2014 an advanced missile defense battery it plans to deploy to South Korea is not aimed at Russia, after Moscow expressed concern that the system would negatively affect the regional situation and provoke an arms race. The US military plans to bring a THAAD missile defense battery into South Korea to help deter threats from North Korea. The US has conducted a site survey for the system, though no decision has been announced as to where to put it.

Russia's foreign ministry voiced concerns about the plan, saying in a statement earlier on July 24, 2014 that the plan "cannot but cause concern" and claiming that it will "inevitably have a negative impact on the strategic situation in the region and could provoke an arms race in Northeast Asia." State Department deputy spokeswoman Marie Harf dismissed such concerns. "We have very clearly said that we are committed to missile defense, but also to missile defense cooperation with Russia, which would enhance the security of both NATO and of Russia," Harf told reporters at a Foreign Press Center briefing.

"I understand there are strong opinions in Russia about missile defense. We have been very clear that it is not aimed at them and we are looking at a variety of other threats and we will continue talking to them and being transparent with them about why we are doing what we are doing," she said. Harf said the US remains firm in its position that North Korea should first take concrete steps to demonstrate it is committed to giving up its nuclear program before

the long-stalled six-party talks on denuclearization reopen. ...

Harf stressed that Washington is not ignoring the North Korean nuclear issue, adding that the US has "a whole team very focused on working with our partners and the rest of the six parties as well to see if we can get back to the table." Asked for comment on the recent agreement on the

establishment of a hotline between the South Korean and Chinese defense ministries, the spokeswoman said the concept of hotlines in general is good because it could be helpful in resolving territorial disputes like those surrounding the South and East China seas. ...

Source: <http://english.yonhapnews.co.kr/>, 24 July 2014.

## **NUCLEAR ENERGY**

### **INDIA**

#### **PM Narendra Modi Wants Nuclear Power Capacity to be Tripled**

Underlying the importance of nuclear energy in India's energy basket, PM Modi asked scientists from DAE to ensure India's nuclear power capacity is tripled from present 5,780 MW by fiscal 2024 and within the allocated budget. Modi, on his first visit to Mumbai after taking over as the country's PM on 26 May, 2014 was interacting with scientists from DAE at the BARC.

A statement issued by the PIB said the PM had reiterated his belief that energy security, which was increasingly based on clean and reliable sources of energy, was the critical driver of rapid and sustained long-term development. He saw an essential role for nuclear energy in India's energy strategy, given the scale of demand in India, the statement said.

Source: <http://www.livemint.com/> 21 July 2014.

### **JAPAN**

#### **Japan Nuclear Watchdog Says Two Reactors Safe to Switch Back On**

**Asked for comment on the recent agreement on the establishment of a hotline between the South Korean and Chinese defense ministries, the spokeswoman said the concept of hotlines in general is good because it could be helpful in resolving territorial disputes like those surrounding the South and East China seas.**

Japan's nuclear watchdog said on July 16, 2014 that two atomic reactors were safe enough to switch back on, marking a big step towards restarting the country's nuclear plants which were shuttered after the Fukushima crisis. But fresh protests — and accusations that the regulator is a puppet of the powerful atomic industry — have highlighted the challenges PM Shinzo Abe faces in bringing back a technology that many Japanese have forever sworn off.

Abe has been trying to persuade a wary public that the world's third largest economy must return to an energy source which once supplied more than a quarter of its power. Widespread anti-nuclear sentiment has simmered in Japan ever since an earthquake and tsunami in March 2011.... NRA officials on July 16 issued a more than 400 page safety report on the Sendai plant in southern Japan, technically giving the operator the green light to switch on its two reactors — in what would be the first restart since Japan ushered in tougher regulations in 2013. But any restart was unlikely before autumn at earliest, following a month-long public consultation period and the need to win over communities near the plant. "This is a step forward," Abe said. "I will work towards restarting the plant while getting the understanding of local people."

Business groups have backed Abe's push to bring nuclear power plants back online after Japan's energy bills soared when it was forced to turn to pricey fossil fuels. Some of the country's utilities — including Sendai's operator Kyushu Electric Power — have received billions of dollars in bailout money to rescue their finances which suffered when the plants went offline. NRA chairman Shunichi Tanaka said the Sendai plant would have to operate under some of the world's toughest safety standards to reduce the risk of another major accident. "But it is

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often misunderstood when we talk about safety... we can never say there is zero risk," he told reporters in Tokyo.

**'Controversial Decisions'**: At a public meeting to finalise their decision, Tanaka and his colleagues were met with shouts of "Shame on you!" from a small

band of protesters, while demonstrators also gathered outside the Sendai plant. "The NRA has yielded to the enormous pressure of the nuclear industry and the Abe government... instead of putting the safety of people first," said Kazue Suzuki from Greenpeace Japan.

... Complicating matters, there was no clear roadmap on who would make the final decision to restart reactors, especially if there was strong local opposition. "It's a problem that the decision-making system is not clear," said Tomoaki Iwai, a politics professor at Nihon University. "Because no one wants to take responsibility for a controversial decision like this, the PM probably make the final call." Abe is facing opposition, with one local assembly calling for the Sendai site to be decommissioned, while an anti-nuclear politician won a tight election....

**Battle Lines Drawn**: Former parliamentarian Taizo Mikazuki, 43, narrowly won on July 13, 2014 to become governor of Shiga prefecture, beating a candidate backed by Abe's ruling Liberal Democratic Party. The region borders Fukui prefecture, host to 13 idled reactors, and where the battle over nuclear power could see its biggest fight. Mikazuki has demanded that Tokyo get his approval before any reactor restarts in Fukui. ...

Source: <http://www.nuclearpowerdaily.com/>, 16 July 2014.

**SOUTH AFRICA**

**S. Africa Sees New Nuclear Plants Operational After 2020**

South Africa expects planned new nuclear plants, needed to address power constraints, to become operational after 2020, Deputy President Cyril Ramaphosa said. South Africa plans to add 9,600 megawatts of nuclear energy to the national grid to reduce reliance on coal, which provides more than 90 percent of the nation's power, according to the government's resources plan. Areva SA (AREVA), EDF SA, Toshiba Corp. (6502)'s Westinghouse Electric Corp., China Guangdong Nuclear Power Holding Corp., Rosatom Corp. and Korea Electric Power Corp. (015760) have expressed interest in building the plants.

It "is going to take a long time to build up" to generating 9,600 megawatts, Ramaphosa told reporters in Cape Town on July 24, 2014. "We are looking way beyond 2020." The National Treasury said in February 2013 that the 300 billion-rand (\$29 billion) nuclear program was in the final stages of study. ... State-run Eskom Holdings SOC Ltd. operates a 1,800-megawatt nuclear power station at Koeberg, near Cape Town. In December, 2013 Energy Ministry published a revised 20-year energy plan, which projected that new nuclear power will not be required until at least 2025.

Source: <http://www.bloomberg.com/>, 24 July 2014.

**URANIUM PRODUCTION**

**GENERAL**

**Uranium Seen Rebounding as Japan Readies Nuclear Restarts**

Uranium may rebound from the lowest prices in nine years as Japan moves closer to restarting the first of its idled nuclear reactors, signaling a potential increase in consumption of the atomic fuel. Japan's nuclear regulator vouched for the safety of two facilities in the country's south, setting in motion the

possible return of atomic power. A resumption of plants may boost uranium prices that slid after the 2011 disaster in Fukushima, said Cantor Fitzgerald LP, a New York-based broker.

Uranium has fallen about 60 percent since the meltdown at Tokyo Electric Power Co. (9501)'s Fukushima Dai-Ichi plant in March 2011 led to the closing of Japan's nuclear reactors, reducing demand as supply swelled. The restart will make the nation less reliant on imports of fossil fuels such as liquefied natural gas and boost uranium producers from Australia to Kazakhstan, some of whom canceled projects and closed mines as prices declined.

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"Nuclear reactor restarts in Japan have been viewed as a vital catalyst for uranium prices," Rob Chang, an analyst at Cantor Fitzgerald in Toronto, said. "The restart is much needed as Japan deals with its first summer without any nuclear power in 40 years." The atomic fuel dropped to \$28 a pound on May 19, the lowest since May 2005, according to data from Ux Consulting Co. in Roswell, Georgia. Prices have decreased 17% in 2014 and closed at \$28.50 on July 15, 2014. Kyushu Electric Power Co.'s

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reactors at its Sendai facility in southern Japan passed safety checks, the Nuclear Regulation Authority said in a draft report. It's the first safety assessment of a Japanese nuclear plant from the regulator, which was set up after a predecessor ignored warnings before the disaster in Fukushima.

**Uranium Glut:** Restarts are the "most important psychological catalyst for the uranium space," David Sadowski, a Vancouver-based analyst at Raymond James Ltd., said on June 19. The financial adviser predicts a surplus of 10 million pounds in 2014.

The supply overhang is cutting off any price upside, Morgan Stanley said in a July 8, 2014 note, reducing its 2014 price forecast by 21 percent to \$30.81 a

pound. The bank also lowered its 2015 estimate by 21% to \$36. Paladin Energy Ltd. said in February 2014 it will halt its Kayelekera operation in Malawi while Russia's Atomredmetzoloto in 2013 shuttered Honeymoon in Australia. Kazakhstan, the world's biggest producer, said in November, 2013 it will halt all projects aimed at increasing output. The NRA's commissioners approved the draft safety report at a meeting on July 16, 2014 and agreed to move to the next step of seeking public comment. Japan has been without atomic power since September, 2013. ...

Source: <http://www.bloomberg.com/>, 16 July 2014.

**KAZAKHSTAN**

**Kazakhstan Plans to Remain World Uranium Leader, Says Kazatomprom Head**

The chairman of Kazatomprom, Kazakhstan's National Atomic Company, has said that the country plans to remain a world leader in uranium supply. Speaking at a recent meeting in the village of Shieli Priaralie, Vladimir Shkolnik, said Kazakhstan's share in world uranium production over the past year has reached 38 percent, making the country first in this category. Interviewed by the Astana Times Shkolnik and Deputy Regional Governor Galym Amreyev examined developments in the nuclear industry over recent years and also addressed issues regarding key strategic enterprises. "I'd like to note that the company finished 2013 successfully and all desired indicators of the physical volume of production were met," Shkolnik said in opening the meeting.

The head of Kazatomprom reminded that there are complicated conditions in the uranium industry, especially in connection with the accident at the Fukushima nuclear power plant in Japan. Almost all uranium producing entities bear losses. However,

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**With the International Energy Agency forecasting a doubling of nuclear power generation out to 2035, Australia has said it could soon start exporting uranium to India. Australia holds about a third of the world's recoverable uranium resources, and exports nearly 7,000 tonnes a year.**

Kazatomprom was an exception and the company completed last year with a profit of over 30 billion tenge (USD 163 million.) Nevertheless, it is not difficult to imagine the scale of the losses of nuclear companies taking into account the fact that the global market prices for natural uranium decreased from 55 to 28 dollars per pound.

Kazatomprom is looking to remain dominant in the market, Shkolnik said, noting that the company has been recognised as best in the world in a long series of parameters, including the availability of technologies and financial indicators, efficient use of capital and investments. It is unlikely that world leadership in uranium production will change. As for uranium industry forecasts, they differ, but are optimistic. A rise is expected in one or two years or perhaps even earlier. The latter forecast is advanced by analysts of banks and companies who determine pricing policies. The head of the company discussed three strategic directions in their work defined by

the government. "The first task is the development of the full nuclear fuel cycle. In the past year, we became co-owners of a uranium enrichment plant. Our product - enriched uranium, was exported to foreign markets and the company profited," he said.

In addition, Kazatomprom, together with French and Chinese partners is involved in the construction of a plant for heat-transmitting assemblies to be used in the nuclear industry. "During President Nursultan Nazarbayev's visit to China, it was officially confirmed at the highest level that we will design and construct a plant for heat-transmitting assemblies together with Chinese companies. The project has already been approved," he said. By 2030, China plans to build more than 100 nuclear power units, some of which are already under construction, said Shkolnik. ...

Source: <https://in.finance.yahoo.com/>, 21 July 2014.

**NUCLEAR COOPERATION**

**AUSTRALIA – INDIA**

**Australia Could Start Uranium Sales to India**

With the International Energy Agency forecasting a doubling of nuclear power generation out to 2035, Australia has said it could soon start exporting uranium to India. Australia holds about a third of the world's recoverable uranium resources, and exports nearly 7,000 tonnes a year. Energy starved India is looking to nuclear power to supplement its existing options to fuel economic growth. Australian Trade Minister Andrew Robb told newsmen that Australian uranium sales to India were very close, after he attended a G20 trade ministers meeting in Sydney in July 2014 and held talks with an Indian trade delegation. PM Julia Gillard had started talks on supplying uranium to India during a three day official visit to the country in 2012. Gillard had reversed the ban in 2011.

With a new government at the helm in Canberra in 2013, India and Australia were aiming to complete negotiations on a civil nuclear agreement for uranium supplies by the end of the year. In February 2014, Australia's foreign minister Julie Bishop had also told newswire agencies that the two countries were in the middle of their fourth round of talks for a civil nuclear cooperation agreement.

Australia has been looking for a non proliferation assurance from India, similar to the one it from other customers like China. Andrew Robb, incidentally, is continuing negotiations with Chinese officials on a free trade agreement for the supply of uranium. India has already concluded civil nuclear cooperation agreements with countries like Argentina and Kazakhstan. The chairman of Kazatomprom, Kazakhstan's National Atomic Company, recently told newsmen that the country plans to remain a world leader in uranium supply.

Source: <http://www.republicofmining.com/>, 22 July 2014.

**BRICS**

**BRICS Plans Energy Association in the Wake of New Bank**

**Russian President Vladimir Putin has announced plans to establish a BRICS "energy association" that will include a fuel reserve bank and an energy policy institute.** BRICS is a grouping of major emerging economies that includes Brazil, Russia, India, China and South Africa. Fifty of the 66 nuclear reactors currently under construction are in BRICS states." These steps would allow us to strengthen our nations' energy security and prepare us for the creation of new instruments and new institutes to trade energy resources," Putin said.

Putin made the announcement on 15 July, 2014 during the group's sixth annual diplomatic meeting in Fortaleza, Brazil between 14 and 16 July, 2014...Russia signed a number of nuclear power cooperation agreements that coincided with Putin's visit to South America.

On 12 July, 2014 Rosatom director general Sergey Kiriyenko and Argentina's minister of planning, investments and services, Julio Vido, signed an intergovernmental agreement on cooperation in the peaceful use of atomic energy. Rosatom plans to participate in the tender in the third quarter for construction of the third unit at the Atucha nuclear power plant. On 15 July, 2014 Rosatom Overseas chief executive Dzhomart Aliyev and Camargo Correa President Dalton Santos Avancini signed a memorandum of understanding with Brazilian Camargo Correa on building an additional spent fuel storage facility and a nuclear power station in Brazil.

The document envisages an expansion of bilateral cooperation in nuclear power, in particular, the construction of engineering and technical facilities at the Brazilian operational Angra nuclear power plant and partnership in the construction of new nuclear power units in Brazil. On 16 July, 2014 Putin held talks with Indian PM Narendra Modi on broadening their partnership in the energy and defence sectors. Modi has reportedly invited the Russian leader to visit the construction site of Kudankulam 2 during their annual summit in New Delhi, in December, 2014. The two countries signed a general framework agreement in April, 2014 on units 3 and 4....

Source: <http://www.world-nuclear-news.org/>, 21 July 2014.

**With the International Energy Agency forecasting a doubling of nuclear power generation out to 2035, Australia has said it could soon start exporting uranium to India. Australia holds about a third of the world's recoverable uranium**

CHINA – ROMANIA

**Candu Energy and China Nuclear Power Engineering Company Sign Cooperation Agreement for Two CANDU Reactors in Romania**

Candu Energy Inc., an SNC-Lavalin company, on July 24, 2014 signed a binding and exclusive cooperation agreement with CNPEC Ltd. for the construction of CANDU Units 3 and 4 at the Cernavoda Nuclear Power Plant in Romania. Signed in Vancouver, the agreement was witnessed by senior representatives of China's National Energy Administration and Natural Resources Canada.

Romania already has two operating CANDU 6 nuclear reactors, which came into service in 1996 and 2007. Combined, they are the largest power producer in the country, accounting for about 20 per cent of Romania's energy supply. This agreement follows a letter of intent signed by CNPEC's parent company China General Nuclear Power Group (CGN) and Romanian utility Societatea Nationala Nuclearelectrica (SNN) in November 2013 for investment in and development of two additional nuclear units at the Cernavoda site.

"Candu Energy looks forward to working with CNPEC to meet Romania's growing nuclear energy requirements. This is an exciting opportunity to build on CANDU technology's international track record for the highest levels of safety, reliability and efficiency," said Preston Swafford, Candu Energy President and CEO. "Today's agreement deepens our strong ties with both the Romanian and Chinese nuclear industries, as CANDU reactors have operated in both countries for more than a decade." ...

Source: <http://www.digitaljournal.com/>, 24 July 2014.

INDIA – JAPAN

**Indian PM's Upcoming Visit to Japan: A New Alliance in the Making?**

**Indeed, over \$60 billion worth of nuclear contracts in India are currently on hold because a civilian nuclear agreement is yet to be concluded between Tokyo and New Delhi. Therefore if Modi and Abe can come to terms in the nuclear energy field, the floodgates will be opened for joint construction and engineering projects.**

... As Japan wants to maximize its industrial and infrastructure-related exports under Abe, nuclear energy sales offer an unmatched potential in this regard. Japanese firms produce key components for nuclear reactors, and Japanese PM Abe is determined to build numerous reactors and sign lucrative contracts with countries which wish to take advantage of

Japanese experience in this field. Even though the Japanese public is utterly sensitive to the nuclear issue, the Abe administration today has the capacity and willingness to convince the country of the reliability and profitability of nuclear cooperation with a key partner like India for Japan's best interests in the 21st century.

In this respect, Abe can start by explaining to the Japanese parliament, i.e. Diet, that the NSG, a prominent international body which was initially established as a reaction to India's nuclear tests, will also back his decision to pursue nuclear cooperation with India, as its members, including the US, are all confident of India's goodwill. Indeed, over \$60 billion worth of nuclear contracts in India are currently on hold because a civilian nuclear agreement is yet to be concluded between Tokyo and New Delhi. Therefore if Modi and Abe can come to terms in

**Liability is a major source of concern for potential nuclear investors in India, and all that these companies have for assurance is a single clause in contracts that they've signed with the NPCIL. In this respect, Modi's government needs to insulate foreign investors from intrusions if it wishes to develop the country's prospects for foreign direct investment and nuclear cooperation in particular.**

the nuclear energy field, the floodgates will be opened for joint construction and engineering projects. Another stumbling block on the road to cooperation is the patchy and insufficiently implemented, complex legal framework covering the subject of nuclear cooperation. Foreign nuclear vendors investing in India are vulnerable to the local government's predation and the central government's arbitrary measures which can inhibit their profitability and threaten their businesses at large. Liability is a major source of concern for

potential nuclear investors in India, and all that these companies have for assurance is a single clause in contracts that they've signed with the NPCIL. In this respect, Modi's government needs to insulate foreign investors from intrusions if it wishes to develop the country's prospects for foreign direct investment and nuclear cooperation in particular. ...

Source: <http://www.turkishweekly.net/>, 24 July 2014.

**NUCLEAR PROLIFERATION**

**IRAN**

**IAEA Worried About Slow Progress in Iran Nuclear Probe**

The UN nuclear watchdog is concerned about Iran's current lack of engagement with an investigation into its suspected atomic bomb research, ahead of a deadline in August 2014 for Tehran to step up cooperation, diplomatic sources said on July 22, 2014. Western officials want Iran to address questions by the IAEA on allegations of past efforts to develop a nuclear weapons capability, something the country denies.

They say Iran clarifying the IAEA's concerns would also influence a diplomatic push by six world powers to negotiate an end to a decade-old standoff over the Islamic Republic's nuclear programme, suggesting some sanctions relief may depend on it. Iran says it is a peaceful project to generate electricity. It rejects the IAEA's suspicions as based on false and fabricated information from its enemies, but has promised, since pragmatist Hassan Rouhani became president in mid-2013, to work with the Vienna-based UN agency to clear them up.

Under a phased cooperation pact hammered out late in 2013 an attempt to jumpstart the long-stalled IAEA

**The slow pace of cooperation may reinforce an impression in the West about continuing Iranian reluctance to give the IAEA the information and access to sites and people that it says it needs for its investigation. There was no immediate comment from Iran or the IAEA.**

investigation, Iran agreed in May 2014 to implement five nuclear transparency measures by August 25, 2014 two of which directly dealt with the nuclear bomb inquiry. However, so far there appears to have been little - if any - movement by Iran to engage on them, the sources said on condition of anonymity.

They said there was still time for Iran to meet its commitments, noting that it in the past occasionally had waited until the last minute, for example when it provided details in May 2014 about another issue that forms part of the IAEA's probe. But the slow pace of cooperation may reinforce an impression in the West about continuing Iranian reluctance to give the IAEA the information and access to sites and people that it says it needs for its investigation.

There was no immediate comment from Iran or the

**After years of what the West saw as Iranian stonewalling, Iran as a first step in May gave the IAEA information it had requested as to the purpose in developing Exploding Bridge Wire detonators, which can be used to set off an atomic explosive device. Iran says it was for civilian use. But, the diplomatic sources said, it does not appear to have started moving on the two PMD issues it agreed to clarify by late August - concerning alleged work on explosives and computer studies related to calculating nuclear explosive yields.**

IAEA. US officials say it is vital for Iran to address the IAEA's suspicions if the parallel negotiations between Tehran and the United States, France, Germany, Britain, China and Russia on a long-term deal to end the dispute are to succeed. Those talks - which were extended by four months after the sides failed to meet a July 20, 2014 deadline for an accord - aim to set verifiable, civilian limits to Iran's nuclear programme and lift punitive sanctions.

**"Past Sins":** The IAEA's inquiry focuses specifically on what it calls the possible military

dimensions (PMD) of Iran's atomic activities. After years of what the West saw as Iranian stonewalling, Iran as a first step in May gave the IAEA information it had requested as to the purpose in developing Exploding Bridge Wire detonators, which can be used to set off an atomic explosive device. Iran says it was for civilian use. But, the diplomatic sources said, it does not appear to have started moving on the two PMD issues it agreed to clarify by late August - concerning alleged work on explosives and

computer studies related to calculating nuclear explosive yields.

They were among 12 specific areas listed in an IAEA report issued in 2011 with a trove of intelligence indicating a concerted weapons programme that was halted in 2003 - when Iran came under increased international pressure - but also suggesting some activities may later have resumed. A US official described the IAEA's investigation as one among "very difficult subjects" in the Iran nuclear diplomacy. ...

Source: <https://au.news.yahoo.com/>, 23 July 2014.

### Iran Warned of 'Last Chance' in Nuclear Talks After Deadline Missed

Iran faced Western pressure on July 19, 2014 to make concessions over its atomic activities after it and six world powers failed to meet a July 20 deadline for a deal to end the decade-old dispute but agreed to keep talking. The countries agreed to extend the high-stakes negotiations by four months, and let Iran access another \$2.8 billion (1.6 billion pounds) of its cash frozen abroad during that period, though most sanctions on the Islamic Republic stayed in place.

Germany - one of the major powers trying to persuade Iran to curb its nuclear programme - warned that the extended talks might be the last chance for a long time to reach a peaceful solution. Echoing the views of other envoys, a Western diplomat said there had been some progress during nearly three weeks of marathon discussions in Vienna's 19th century Coburg palace and that gaps in positions were not "unbridgeable". But, the senior diplomat added: "We cannot accept that Iran stays at current levels of enrichment." The six powers want Iran to significantly scale back its uranium enrichment programme to make sure it cannot produce nuclear bombs. Iran says the programme is entirely peaceful and wants sanctions that have severely damaged its oil-dependent economy to be lifted as soon as possible. After years of rising

tension between Iran and the West and fears of a new Middle East war, the 2013 election of a pragmatist, Hassan Rouhani, as Iran's president led to a thaw in ties that resulted in the current nuclear negotiations.

The announcement to give diplomacy until November 24, 2014 came in the early hours of July 19 2014, a day before the July 20 deadline that Iran, the United States, Britain, France, Germany, Russia and China had earlier set for an agreement. ... Under the terms of the extension of the negotiations, Iran will be able to access during this time a relatively small portion of an

estimated more than \$100 billion held abroad, in return for limits to its nuclear programme. It prolongs - with some adjustments - an interim deal hammered out in Geneva last year, under which Iran halted its most controversial nuclear work in exchange for some easing of sanctions. The six-month deal - which allowed Iran to receive \$4.2 billion in funds held abroad - was designed to create time and space for the negotiation of a permanent agreement. US officials stressed that most sanctions against Iran Republic would remain in place for now. ...

**Iran's "Feet to the Fire":** It remains uncertain whether four more months of talks will yield a final deal, since major underlying differences remain after six rounds of meetings since February, 2014. ... In exchange for the \$2.8 billion, Kerry said, Iran agreed to take several steps, including to keep neutralizing its most sensitive uranium stocks - uranium that has been enriched to a level of 20 percent purity - by converting it to fuel for a research reactor in Tehran used to make medical isotopes.

French Foreign Minister Laurent Fabius told Reuters in Cairo that major disagreements remained though some had been resolved. ... Some members of US Congress are eager to impose new and tougher sanctions on Iran. US officials said on July 19, 2014 they would continue to oppose new sanctions as long as the negotiations were underway but would drop their opposition if the talks collapsed. ...

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Iran says it would be willing to delay development of an industrial-scale uranium enrichment programme for up to seven years and to keep the 19,000 centrifuges it has installed so far for this purpose, but Washington says this is still too many. ... European Union foreign policy chief Catherine Ashton - who leads the talks for the powers - and Iranian Foreign Minister Mohammad Javad Zarif said in a joint statement that the talks would resume in the coming weeks.

Source: <http://uk.reuters.com/>, 19 July 2014.

**NUCLEAR NON-PROLIFERATION**

**IRAN**

**Iran Eliminates Sensitive Stockpile under Interim Nuclear Deal – IAEA**

Iran has moved to eliminate its most sensitive stockpile of enriched uranium gas under an interim nuclear deal reached with six world powers in 2013, according to a monthly update by the UN nuclear watchdog obtained by *Reuters* on July 20, 2014. The report by the IAEA showed that Iran had met the terms of the six-month agreement, under which it limited its atomic activities in exchange for some easing of sanctions that are crippling its economy.

The preliminary accord had been due to expire on July 20 but will be extended with some adjustments, after Iran and the six powers failed during negotiations in Vienna to meet a self-imposed July 20 deadline for a long-term deal to end the decade-old nuclear standoff and agreed to continue talking. The four-month extension underlines the difficulties negotiators face in settling the dispute permanently even if Iran has met its commitments under the initial agreement, as July 20's IAEA report suggests.

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**The report by the IAEA showed that Iran had met the terms of the six-month agreement, under which it limited its atomic activities in exchange for some easing of sanctions that are crippling its economy.**

**The IAEA update also showed that Iran had started up a long-delayed facility to convert some of its lower-grade enriched uranium gas into oxide and had fed about 1,500 kg of the material into the conversion process, as agreed in November 2013. Western experts say it would take more time to make a bomb from uranium oxide than from gas, lowering any risk of a quick breakout for a nuclear weapon.**

... Under the accord reached in Geneva on Nov. 24, 2013 designed to buy time for talks on a comprehensive solution, Iran halted the most controversial aspect of its nuclear program - enrichment of uranium gas to a fissile concentration of 20 percent. It also undertook to dilute or convert to oxide its remaining stockpile of the material - nearly 210 kg - during the half-year period, which the July 20, 2014 IAEA report showed it had now completed. That stockpile was closely watched by the West as the level of enrichment represented a relatively short technical step away from that required for nuclear weapons. Iran says it is only refining uranium to fuel nuclear power plants or research reactors, not to develop a nuclear weapons capability as the West suspects.

**Interim Deal A "Success" – US:**

The IAEA update also showed that Iran had started up a long-delayed facility to convert some of its lower-grade enriched uranium gas into oxide and had fed about 1,500 kg of the material into the conversion process, as agreed in November 2013. Western experts say it would take more time to make a bomb from uranium oxide than from gas, lowering any risk of a quick breakout for a nuclear weapon. As the IAEA confirmed in a series of monthly updates since the agreement took effect on Jan. 20, 2014 that Iran lived up to its part of the deal, the Islamic Republic has gradually gained access to some of its frozen cash held abroad.

After July 20's IAEA report, it looked set to receive a last installment of \$550 million out of a total of \$4.2 billion over the half-year period. During the extra four-month period it will receive an additional \$2.8 billion for continuing to comply with the interim deal and for undertaking some new measures, including turning 20 percent uranium oxide into

nuclear fuel. US officials say Iran still has more than \$100 billion in foreign assets which it has problems accessing due to financial sanctions imposed in recent years over its nuclear program. A US official said on July 19, 2014 that 2013 agreement had been "a success in halting the progress of the Iranian program and rolling it back in exchange for a relatively modest relief that has been provided over the six months". But it remains unclear whether the in exchange for a gradual end to sanctions, experts and diplomats say. ...

Source: <http://www.newsdaily.com>, 20 July 2014.

## LITHUANIA

### **Ignalina 2 Decommissioning Work Starts**

Lithuania agreed to shut down Ignalina 1 and 2 – both Soviet-design RBMK reactors - as a condition of its accession to the European Union. Unit 1 was shut down in 2004 and unit 2 in 2009. A total of 1000 tonnes of ECCS equipment will be dismantled, the company responsible for the plant said on 21 July. After treatment and decontamination, 99% of this is to be sold, while the rest is to be disposed of. The company did not say what exactly would be sold or how. In the turbine hall, 20,500 tonnes of different equipment is to be dismantled, it said.

Work on the two projects can start following the passing of a 17 June law on Ignalina nuclear power plant decommissioning, the company said. The two light-water, graphite-moderated reactors came on line in 1983 and 1987, respectively. In 1994, Lithuania agreed to accept funds from the Nuclear Safety Account administered by the European Bank for Reconstruction and Development – to support a safety improvement program at Ignalina.

Unloading the used fuel from unit 2 was expected to be done by April 2012. By April 2016, it is expected that all fuel from unit 1 and 2 will have been unloaded from the used fuel storage pools into casks and transported to the new interim used fuel storage facility, where it is to remain for 50 years. The EBRD suspended funding for this in December 2012 due to a lack of progress, but resumed it in July 2013. The total estimated cost of the Ignalina decommissioning project is more than €2.5 billion

(\$3.37 billion), with the EU having pledged €1.4 billion (\$1.89 billion).

Source: <http://www.world-nuclear-news.org/>, 24 July 2014.

## **NUCLEAR DISARMAMENT**

### **NORTH KOREA**

#### **China Calls for US to Lower Bar for Nuclear Talks with N. Korea**

Chinese Vice Foreign Minister Zhang Yesui has told a group of South Korean lawmakers that the United States must lower the bar for resuming long-stalled multilateral talks on ending North Korea's nuclear weapons program, a South Korean delegate who attended the meeting said on July 24, 2014.

The rare comments by Zhang were in line with China's policy

toward North Korea, but highlighted a fundamental gap that remains between Washington and Beijing over how to restart the six-nation talks that have been dormant since late 2008. Zhang made the comments on July 23, 2014 during a meeting with a group of South Korean lawmakers, led by Rep. Lee Seok-hyun of the main opposition New Politics Alliance for Democracy. Lee serves as a vice speaker of the National Assembly. ... Zhang also criticized the US policy of trying to "achieve its target even before the talks resume," the delegate said on condition of anonymity.

The vice foreign minister reiterated China's stated goal of "resuming the six-party talks at an early date." "Unless dialogue resumes, North Korea will have a chance to advance its nuclear capabilities. And we don't want this to happen," Zhang was quoted as saying. Zhang also told the lawmakers that China is making efforts "through various channels" to prevent North Korea from developing nuclear weapons. North Korea has warned that it will not rule out carrying out "a new form of nuclear test" since earlier in 2014. Since its third nuclear test in February last year, Pyongyang has repeatedly expressed its willingness to reopen the six-party talks "without preconditions." ...

Source: <http://www.globalpost.com/>, 24 July 2014.

**NUCLEAR TERRORISM**

**GENERAL**

**DHS Nuclear Forensics Efforts to Prevent Nuclear Terrorism Featured at IAEA Conference**

In July 2014, the DNDO joined the Departments of State and Energy, the FBI and 335 international experts and officials from 88 member states to participate in the IAEA International Conference on Advances in Nuclear Forensics, Countering the Evolving Threat of Nuclear and Other Radioactive Material out of Regulatory Control in Vienna, Austria.

Conference participants were provided an overview of IAEA guidance on how nuclear forensics can be used to help ensure successful investigation of a nuclear security event. This guidance, which DNDO helped develop, promotes international cooperation in capability development as well as during investigations.

DNDO presented our National Nuclear Forensics Expertise Development program, which can serve as a model for other IAEA member nations. Established in 2008, the program is a comprehensive US Government effort to grow and sustain the qualified technical expertise required to execute the nation's nuclear forensics mission. DNDO, together with the Department of State, also discussed the development of National Nuclear Forensics Libraries and the results of *Galaxy Serpent*—an international nuclear forensics exercise conducted by the Nuclear Forensics International Technical Working Group. The forensics libraries are an organized collection of information on nuclear or other radioactive material produced, used, or stored by a country.

**Nuclear forensics is a keystone of nuclear security, as it supports international efforts to counter illicit trafficking of material that could be used in a potential terrorist attack, and helps to identify the origin and pathway of nuclear and other radioactive materials.**

Through the exercise, we were able to determine that these libraries can play a vital role in the investigation of a transnational nuclear security event.

Also highlighted were a number of technical advances in nuclear forensics signatures and analytical methods stemming from DNDO-sponsored research and development at the National Laboratories that will continue to advance our important mission.

Nuclear forensics is a keystone of nuclear security, as it supports international efforts to counter illicit trafficking of material that could be used in a potential terrorist attack, and helps to identify the origin and pathway of nuclear and other radioactive materials. Through our ongoing efforts, both at home and with the international community, DNDO continues to help advance nuclear forensics capabilities to keep our Nation and our partners safe.

Source: <http://www.dhs.gov/blog/>, 15 July 2014.

**NUCLEAR SAFETY**

**HUNGARY**

**Hungary MEP Benedek Javor Goes to EC Over Paks Nuclear Deal**

Together-Dialogue for Hungary MEP Benedek Javor has asked the EC to investigate the 'Paks II' nuclear power plant expansion deal that the government and Russian contractor Rosatom signed without a public procurement process in January, 2014. Javor questions the existence of a government impact study on the construction of the two blocks at Paks, for which Russia will reportedly offer a credit line of up to EUR 10 billion. The agreement may also break European competition law, the MEP adds.

**Together-Dialogue for Hungary MEP Benedek Javor has asked the EC to investigate the 'Paks II' nuclear power plant expansion deal that the government and Russian contractor Rosatom signed without a public procurement process in January, 2014. Javor questions the existence of a government impact study on the construction of the two blocks at Paks, for which Russia will reportedly offer a credit line of up to EUR 10 billion. The agreement may also break European competition law.**

... According to Jávör, National Development Minister Miklós Seszták maintains that the impact study exists, "yet has so far failed to produce studies with concrete facts and numbers. All that has been handed out by the ministry is general information with no direct relevance to the project". Jávör's case will also question the safety, transparency, legality and financial prudence of the agreement. "The EC can review the tendering failure, illegal state aid, the incident in 2003 when fuel cells were damaged at Paks and other issues. We think the planned investment today is not feasible within the European regulatory environment, as it obviously distorts the internal energy market." Jávör noted that "the Hungarian government is not planning to incorporate investment costs into energy prices. The Treaty on the Functioning of the EU also requires member states to stabilize their finances and to reduce government deficits during economically advantageous periods. Committing to a EUR 10 billion state loan clearly endangers this commitment."

The government special commissioner for Paks, Attila Aszódi, paints a far more glowing picture of the nuclear power plant extension, however. "Everyone is really content and happy around the plant," he told ATV. With the government line seemingly that transparency can be retroactive too, Aszódi explained that "Hungary is drafting three agreements in preparation for discussions with Rosatom executives: on the planning, construction and launch of the new blocks, the delivery and disposal of nuclear fuel, and the operation and upkeep of the blocks."

Whatever the ultimate motivation for the Paks deal, whether to plug a budget hole, as former economy minister Lajos Bokros claims, or to secure Hungary's energy future, the deal has been shrouded in secrecy from the get-go. MP of the centrist, green party LMP Bernadett Szél said: "...Paks will serve as a major and definitive hindrance to all non-nuclear energy prospects in Hungarian energy policy for a century to come."

Source: <http://budapestbeacon.com/>, 20 July 2014.

### SWEDEN

#### Sweden's Nuclear Plants Forced to Cut Output Due to Warm Weather

Sweden's top nuclear power generators have been forced to cut output because of exceptionally warm weather in Scandinavia, and their output could be reduced for over a week, their operators said on July 23, 2014. Oskarshamn, part of Germany's E.ON and Forsmark, operated by Swedish utility Vattenfall have both cut output because warm sea water temperatures are limiting their ability to cool down. "For each degree above 23 degrees Celsius in the cooling water, each unit has to decrease power by 3 percent," Forsmark said in a market message. "It is uncertain how long this will last, but according to meteorologists, the warm weather will last for at least 11 more days." Temperatures exceeded 30 degrees in the southern part of Scandinavia, hitting their highest level in years.

The Forsmark nuclear power generator has three units with over 3,000 megawatts of built in capacity and data from the plant showed it was operating at about 92 percent of its built in capacity. If sea temperatures reach 26 degrees, block 3 has to be shut, while at 28 degrees, the other two have to be closed as well, a Vattenfall spokesman said. Sea temperatures are currently around 22-23 degrees, according to the Swedish weather service. Oskarshamn, which currently operates two blocks with around 1,950 megawatt of built in capacity, has had to reduce output by about 90 megawatts because of warm cooling water temperatures, a spokesman said. Data from the plant showed it was operating at 93 percent of its built in capacity.

Source: <http://news.yahoo.com/>, 23 July 2014.

### NUCLEAR WASTE MANAGEMENT

#### RUSSIA

#### Russia Waste Transport Ship Completes Test Mission

The *Rossita* was launched at La Spezia, Italy in December 2010 destined for a role transporting submarine waste in north-west Russia. Atomflot took delivery of the vessel in early 2011 and was to put it to work shuttling between Gremikha, Andreeva Guba, Guba Sayda, Severodvinsk and

other areas where submarine dismantling work is taking place.

In its first mission, completed on 20 July, 2014 the ship transported ten 20-tonne containers filled with solid radioactive waste from submarines at the formal naval base of Gremikha to the Sayda Bay storage facility. SevRAO is responsible for the cleanup of Gremikha. The ship returned to Atomport's icebreaker facility at the port of Murmansk July 21, 2014. "This was a test voyage, but active export of used nuclear fuel from Andreyeva Bay will start in 2016," Atomflot first deputy director general Mustafa Kashka said. The company will complete this task by 2030, he added.

The *Rossita* was given to Russia as part of Italy's commitment to the former G-8 global partnership

plan to inject \$20 billion into funding post-Soviet nuclear remediation projects between 2003 and 2013. The *Rossita* was built by Fincantieri at the Mudzhano shipyard following the framework of a 2003 agreement on bilateral cooperation in dismantling Russia's submarine fleet. The construction itself was agreed in July 2008 after the G8 summit in Kananaskis, Canada, where leaders agreed the Global Partnership Against the Spread of Weapons and Materials of Mass Destruction. The vessel measures 84 metres in length by 14 metres in width and has two temperature-regulated cargo holds. It can carry a cargo of up to 720 tonnes over distances of up to 3000 km.

Source: <http://www.world-nuclear-news.org/>, 22 July 2014.

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Centre for Air Power Studies

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

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