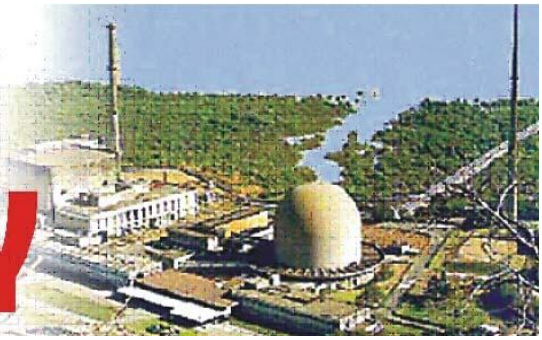
NUCLEAR SECURITY



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

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OPINION –Sitakanta Mishra

Contours of India's Nuke Politics

During the last half-decade, the aptness of India's nuclear doctrine has been mused, in both academic and political circles. In March 2011, senior BJP leader Jaswant Singh was quoted saying that the Government cannot "sit in yesterday's policy". The Delhi-based IPCS had constituted a Task Force in 2011 to formulate an alternative blue print of what could be India's nuclear doctrine (2012). In light of the BJP assuming power with an overwhelming majority under NarendraModi as PM, the issue of 'change and continuity' of India's nuclear posture merits serious introspection.

In the pursuit of examining the contours of India's future nuclear posture, keeping in mind the BJP's pledge to "revise and update" the nuclear doctrine, four overlapping trends can be analyzed. **First**, compared to the role of political parties, national political leadership is paramount in nuclear matters. **Second**, nuclear policy does not change with the change of government, but sometime changes despite the same party forming the government. **Third**, the stature of the PM in the party he/she belongs to is the determining factor. **Lastly**, when the PM's position in the party is stable but not the national political scenario, major nuclear decisions have been arrived at mainly via the initiative of the Prime Minister. To substantiate these trends, let's analyze the six decades of political-nuclear interface in India.

First, compared to the role of political parties, national political leadership is paramount in nuclear matters. Second, nuclear policy does not change with the change of government, but sometime changes despite the same party forming the government. Third, the stature of the PM in the party he/she belongs to is the determining factor. Lastly, when the PM's position in the party is stable but not the national political scenario, major nuclear decisions have been arrived at mainly via the initiative of the Prime Minister.

Nehru's leadership of the Congress Party and his ideas on foreign policy and defencematterswere unquestionedand unchallenged. Mainly after the Sino-Indian border debacle, there emerged some dissent among Congress party members on Nehru's defence policies. However, subsequent leaders of the Party have seemed not to have such a grip over the Party, therefore, decisions on nuclear issues in subsequent years have facedmêlée.Forexample, LalBahadurShastri, a Gandhian and against nuclear weapons, succumbed to Party pressure and authorized the SNEP.

By the time Indira Gandhi became PM, the split between "pro-bomb" and "no-bomb"

within the Congress Party was wide. But Mrs. Gandhi was more into stabilization of her leadership and her government. During her second-term as PM, she had absolute control over the Party, and her equation with Party Presidents like Jagjivan Ram, Shankar Dayal Sharma, and Dev KantaBorooah was cordial. Moreover, the East Pakistan crisis and her decisive action won her the identity of a 'strong' leader. It is believed that during this time she ordered the nuclear explosion.

The Congress Party under the leadership of Rajiv Gandhi won 415 out of total 542 Lok Sabha seats in 1984. With the image as a young dynamic leader, Rajiv Gandhi advocated for eventual and phased elimination of nuclear weapons in the UN General Assembly. Had his proposal been seriously taken, Rajiv would have given a different tilt to India's nuclear posture. Realizing the difficulty in nuclear disarmament initiatives, he constituted a committee which prescribed for a minimum credible deterrent of about 100 warheads to be developed in about seven years and with the cost about Rs 7,000 crore.

The strong will among centrist parties to unite together not to allow the BJP to come to power helped PMNarasimha Rao to strengthen his position and sustainhis coalition government. By this time, the divide between pro-bomb and no-bomb had waned and the question was whether any government could test and manage the wrath of the world community. Rao gave the go-ahead for a nuclear test in 1995. Behind Manmohan Singh's resolve for the Indo-US nuclear deal was the strong backing of a cohesive, strictly hierarchical Congress Party devoid of internal dissent on nuclear issues. Similarly, absolute unanimity can be observed among the BJP cadres on nuclear issues. Atal Bihari Bajpayee, L.K Advani, Jaswant Singh, Jaswant Sinha, Rajnath Singh, SusmaSwaraj, ArunJetly and Venkeiya Naidu, etc. have unanimous view without doubt. Though Vajpayee took the 1998 nuclear test decision without taking all members into confidence, his policy was not in contrast to any other BJP members.

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Replacement of one government by another party has not always brought shifts in India's nuclear weapons policy. For example, after Nehru, Shastri despite his anti-nuclear stance kept the nuclear option open by saying that "India should not embark on nuclear weapons programme *now*." Indira Gandhi did not take any substantial nuclear policy decisions during her first term as PM, as her main focus was strengthening her position, but did authorize a test in her second term. Subsequently, the Janata Party-led coalition under Moraji Desai did not roll back India's nuclear policy though it was averse to nuclear weapons. Reverse was the case with Congress Government under Rajiv Gandhi which was prepared for phased elimination of nuclear weapons provided all other nuclear powers were ready to do so. But his successor Narasimha Rao, leading a multi-party coalition, gave an order for test preparations. When the BJP came to power, it robustly pursued and carried forward the nuclear policy of Narasimha Rao.

Moreover, except for LalBahadurShastri, all other PMs seem to have taken important nuclear weapons decisions when their position within the party they belonged to was stable, but not the national political scenario. Indira Gandhi went for Pokhran-I test when her position within the Congress was dominant but the political scene at the centre was not smooth. In 1998, when Vajpayee went for Pokhran-II tests, his position within the BJP was unchallenged but the national political situation was unstable owing to the absence of a clear majority in the legislature. Lastly, when Manmohan Singh decided to separate India's strategic nuclear programme from the civilian, mainly for pushing through the civil nuclear cooperation with US, his position within the Congress Party was devoid of dispute but the national political situation was no better as he was heading the UPA coalition where the CPI(M) was hesitant to go along.

Given these patterns of nuclear decision making in India, one can extrapolate how the BJP and Modi will pursue their pledge to "revise and update" India's nuclear doctrine. The BJP has promised an "Independent Strategic Nuclear Programme" that constitutes: (a) study in detail India's nuclear doctrine, and revise and update it, to make it relevant to challenges of current times; (b) maintain a credible minimum deterrent that is in tune with changing

geostatic realities; (c) invest in India's indigenous Thorium Technology Programme.

First, to understand what an Independent Strategic Nuclear Programme means to BJP, one needs to keep in mind the reason why it criticized the Indo-US nuclear deal. It viewed the nuclear deal as "a trap", more discriminatory than treaties like the NPT and CTBT. A section of the Party, ideologically closer to the RSS,virulently opposed the deal as "capitulation of the country's sovereignty and national interests". The specific reason "why BJP opposes the deal" is over a provision in the treaty that threatens to demand the return of all equipment and fuel supplied by the US if India tests any nuclear weapons. Therefore, an 'independent nuclear programme' of BJP would largely mean independent nuclear decision making, devoid of US pressure, and restoring India's right to further nuclear tests which it views as having been "frittered away" by the Congress Party under the Indo-US civil nuclear deal. However, revising the terms and conditions of the Indo-US nuclear deal to restore India's right to test would be impossible unless the Indo-US nuclear deal is scrapped.

Second, the promise to study in detail India's nuclear doctrine, and revise and update it to make it relevant to challenges of current times is a relatively easy task now as NarendraModi in a TV interview has clarified that he would not alter the doctrine that Vajpayee had laid down, especially the 'no first use' posture. Most probably, BJP may authorize the NSAB to debate on the utility of current doctrine and do nothing thereafter. Of course, one can explore alternative postures India may opt for, but not without costs.

Three plausible postures can be envisaged. No visible alteration in the provisions of the doctrine can be a safe option keeping in mind its acceptability today and India's aspiration for NSG membership in the future. India would look for a doctrine which can provide "flexible response" options "allowing policy makers every possibility in a crisis – pre-emptive strike, counter-force and counter-value targeting, even assured destruction through massive retaliation." This is more easily said than done. Lastly, by going the extra mile in the Indo-US strategic partnership and civil nuclear cooperation, the BJP may bargain for retaining India's right to further tests with assurance of not exercising this right. This would be an equally difficult option to obtain.

Third, the BJP's promise to "maintain a credible minimum deterrent that is in tune with changing geostatic realities" is debatable, but not necessarily alarming. Currently, India maintains a credible minimum deterrent in principle, and the BJP must make it more robust. Certainly the geopolitical realities have changed, especially with Pakistan possessing TNWs. With nuclear-capable cruise missiles and miniaturized nuclear warheads, Pakistan has lowered the nuclear threshold in South Asia significantly. The imperative for India therefore is to develop a robust cruise missile defence or defence against short-range missiles threat. On the other hand, though Sino-Indian relations are largely smooth now, Chinese military modernization and its ASAT capabilities should be taken seriously. Therefore, the third leg of India's nuclear deterrent with SLBMs, BMD, MIRV and hypersonic cruise missile programme can be promoted to bestow upon India capabilities far beyond the minimum credible deterrent. In this pursuit, Modi government need not revise the nuclear doctrine significantly.

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One may argue that a revision of India's nuclear doctrine is long overdue. Western scholars view India's current doctrine as similar to the US doctrine of massive retaliation during the 1950s. Since the debate has surfaced in the political arena now, one can expect that the doctrine will undergo official scrutiny sooner or later. Nevertheless, how the BJP will go about it and what shape it will culminate in is too early to conclude. As nuclear weapons are a sensitive issue, and for Modi as a new political leader in the national scene, the future contours of India's nuclear deterrent would largely rest on his evolving stature in the Party.

If past trends in nuclear decision making vis-à-vis domestic politics are any guide, Modi would first strengthen his position in the Partywhileshapingthe

functioning of his government accordingtohis own conceptions. Though the national political situation seems stable with the endofthe three-decade coalition era, the position of the new PM vis-à-vis the party he belongs to is yet to be consolidated. How Modi's equation with other stalwarts of the Party would evolve is a matter of conjecture. Therefore, equating BJP's nuclear tests decision in 1998 with its urge to revise India's nuclear doctrine today would be misleading, more so when other pressing foreign policy concerns need immediate attention.

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Source: http://www.southasianvoices.org/, 21 May 2014.

OPINION – C UdayBhaskar

Passing the Nuclear Baton from Manmohan Singh to Narendra Modi

The charismatic, larger-than-life Narendra (bhai) Modi succeed[ed] the reticent and soft-spoken Dr Manmohan Singh. A grave and onerous responsibility will devolve on the new PM and along with the numerous issues whose stewardship will need the incumbent's personal attention, there is none more sensitive and opaque than the nuclear weapon capability of India.

In short, the nuclear baton will pass from Singh to Modi. But when and how institutional acumen is transferred is part of the opacity that envelops this strategic capability that India acquired in May 1998 when Atal Bihari Vajpayee, the first BJP Prime Minister of India, took the bold decision that he did.

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Given the harsh US-led sanctions imposed on India after the May 1974 PNE which was carried out with Indira Gandhi at the helm, the nuclear issue in India has perforce been a cloistered domain. The keepers of this secretive pursuit were a chosen few scientists and civil servants – no written records were kept – and the lighter vein quip is that the oral narrative was conducted in chaste Tamil, which is why the Americans never got to know in May 1998!

For students of India's higher defence management, nuclear capability ranks at the highest rung and much of the understanding of how this capability has been nurtured and progressively made credible is based on conjecture, inference and some anecdotal accounts that are selectively shared. And accidental proximity with some of the key players allows one to make a few broad observations that acquire a certain relevance in the current transition.

India's nuclear capability was nurtured assiduously by successive PMs who followed Indira Gandhi, particularly her son Rajiv and the matter acquiredurgencyon theNarasimha Rao watch in the mid-1990s. The Cold War had ended in the most unexpected manner in December 1991, the Soviet Union became 'former' and following France and China joining the NPT in 1992, global pressure was mounting on India to cap-roll back and eliminate its nascent nuclear capability.

The inscrutable Rao planned to carry out a nuclear test even as India was encouraged to co-sponsor the CTBT at the UN along with the US. The unstated logic was if India carried out a nuclear test successfully before the CTBT came into force, it would be in a better position apropos its security interests which had been muddied by the covert China-Pakistan nuclear weapon and missile cooperation. However, the Rao initiative was thwarted by the US and India continued to occupy the nuclear twilight zone and kept its options open.

Then followed the Vajpayee decision to 'cross the Rubicon' in May 1998 and as part of the higher defence matrix, the post of a NSA was created. A veteran diplomat and Vajpayee confidante, the late Brajesh Mishra, also the Principal Secretary to the PM, became India's first NSA. Given the enormity of what India had embarked upon, it was deemed necessary that the same individual wear two hats. This was a prudent decision and in this period, the Vajpayee government released a nuclear doctrine

based on NFU and also created the Strategic Forces Command. Evidently, the Vajpayee-Mishra team learnt on the job – about how the political apex in a democracy like India is to manage the apocalyptic nuclear weapon, rightly described as WMD.

How did the poet-turned-PM Vajpayee prepare for this onerous sui generis task? After all, the NFU also meant India had to deter a first strike by an adversary with zero-error margin. Here there is some public domain information to suggest that when Vajpayee became the PM — as Modi will soon become – he consulted his predecessor, the reticent Rao, who by then had been ostracised by the Congress. However, given the texture of the personal relationship between these two leaders (Vajpayee was accused by his detractors of being Nehruvian and Rao was castigated for being a secret 'parivar' sympathiser), it turned out that there was a quiet passing of the baton and acumen. One PM shared with his successor whatever was deemed appropriate.

The oral history of that period indicates that on May 16, 1996, when Vajpayee assumed office – albeit for a fortnight – he had the benefit of a personal briefing on the nuclear issue from Rao. How useful and how detailed, one can only conjecture. The next transition of PM of significance was post May 1998, when India had become a nuclear weapon power.

By then the PM had an NSA to advise him and a more formal command and control structure had been put in place by the Vajpayee government. On May 19, 2004, Vajpayee stepped down and was succeeded by Singh. Did the latter receive sage counsel on the nuclear issue along with the baton from his illustrious predecessor? One does not know and at this stage it is only the esteemed Singh who can shed light on this matter. However, as observers of the political dynamic in Delhi, one can make a reasonable assumption that the Rao-Vajpayee relationship was very different from that of Vajpayee-Singh.

How does the transition take place at the next rung? An attempt at seeking to glean some insight from the NSA at the time was deflected. As part of this author's study of higher defence management, I had queried Mishra and the context was the 1962 China War. It is well-known that Krishna Menon, the defenceminster at the time, had directed that there be no written record of discussions about the conduct of the war when he was in the Chair. My question was about the current practice with specific reference to the nuclear issue. The matter was elided with the faintest smile and the response was: "Mani knew more than me", the reference being to the late JN Dixit who succeeded Mishra as NSA.

When Modi is sworn in, the metaphorical 'football' (which contains the nuclear button) will be part of the crown of thorns that adorns the PM's halo. One hopes that the sharing of the acumen that is part of the PM-NSA combine will be normative and not marred by party animosities. The PMO twitter handle transition does not augur well.

Source:http://www.southasia monitor.org/, 24 May 2014.

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OPINION –Gareth Porter

Why Iran Wants Its Own Nuclear Fuel

Iran's insistence on having its own capability to enrich uranium for its nuclear reactors stems from its bitter experience when forced to rely on outside suppliers that were susceptible to international political pressures…. Russia in the stalemated talks between the six powers and Iran over the future of the latter's nuclear program, the central issue is not so much the technical aspects of the problem but the history of the Middle Eastern country's relations with foreign suppliers – and especially with the Russians. The Obama administration has dismissed Iran's claim that it can't rely on the Russians or other past suppliers of enriched uranium for its future needs. But the US position ignores a great deal of historical evidence that bolsters the Iranian case that it would be naïve to rely on promises by Russia and others on which it has depended in the past for nuclear fuel.

Both Iran and the P5+1 are citing the phrase "practical needs," which was used in the Joint Plan of Action agreed to November 2013, in support of their conflicting positions on the issue of how much enrichment capability Iran should have. Limits on

the Iranian program are supposed to be consistent with such "practical needs," according to the agreement. Iran has argued that its "practical needs" include the capability to enrich uranium to make reactor fuel for the Bushehr nuclear power plant as well as future nuclear reactors. Iranian officials have indicated that Iran must be self-sufficient in the future with regard to nuclear fuel for Bushehr, which Russia now provides. It announced in 2008 that another reactor at Darkhovin, which is to be indigenously constructed, had entered the design stage.

Former senior State Department official on proliferation issues Robert Einhorn has transmitted the thinking of the Obama administration about the negotiations in recent months. In a long paper published in late March 2014, he wrote that Iran had "sometimes made the argument that they need to produce enriched uranium indigenously because foreign suppliers could cut off supplies for political or other reasons."The Iranians had "even suggested," Einhorn wrote, "that they could not depend on Russia to be a reliable supplier of enriched fuel." This Iranian assertion ignores Russia's defiance of the US and its allies in having built Bushehr and insisting on exempting its completion and fuelling from UN Security Council sanctions, according to Einhorn.

Iran has argued that its "practical needs" include the capability to enrich uranium to make reactor fuel for the Bushehr nuclear power plant as well as future nuclear reactors. Iranian officials have indicated that Iran must be self-sufficient in the future with regard to nuclear fuel for Bushehr, which Russia now provides.

Einhorn omits, however, the well-documented history of blatant Russian violations of its contract with Iran on Bushehr – including the provision of nuclear fuel – and its effort to use Iranian dependence on Russian reactor fuel to squeeze Iran on its nuclear policy as well as to obtain political-military concessions from the US.Rose Gottemoeller, now Under Secretary of State for Arms Control and International Security, described the dynamics of that Russian policy when she was director of the Carnegie Moscow Centre from early 2006 through late 2008. She recounted in a 2008 paper how the Russians began working intensively in 2002 to get Iran to end its uranium enrichment program. That brought Russia's policy aim in regard to Iran's nuclear program into line with that of President George W. Bush's administration (2001-2009).

Russia negotiated an agreement with Iran in February 2005 to supply enriched uranium fuel for the reactor and to take back all spent fuel. Later in 2005, Moscow offered Iran a joint uranium enrichment venture in Russia under which Iran would send uranium to Russia for enrichment and conversion into fuel elements for future reactors. But Iran would not gain access to the fuel fabrication technology, which made it unacceptable to Tehran but was strongly supported by the Bush administration.

Bush administration officials then began to dangle the prospect of a bilateral agreement on nuclear cooperation – a "123 Agreement" – before Russia as a means of leveraging a shift in Russian policy toward cutting off nuclear fuel for Bushehr. The Russians agreed to negotiate such a deal, which was understood to be conditional on Russia's cooperation on the Iran nuclear issue, with particular emphasis on fuel supplies for Bushehr. The Russians were already using their leverage over Iran's nuclear program by slowing down the work as the project approached completion.

A US diplomatic cable 06 July 2006 and released by WikiLeaks reported that Russ Clark, an IAEA nuclear safety official who had spent time studying the Bushehr project, said in a conversation with a US diplomat, "[H]e almost feels sorry for the Iranians because of the way the Russians are 'jerking them around'."Clark said the Russians were "dragging their feet" about completing work on Bushehr and suggested it was for political reasons. The IAEA official said it was obvious that the Russians were delaying the fuel shipments to Bushehr because of "political considerations," calculating that, once they delivered the fuel, Russia would lose much of its leverage over Iran.

In late September 2006, the Russians changed the date on which they pledged to provide the reactor fuel to March 2007, in anticipation of completion of the reactor in September, in an agreement between the head of Russia's state-run company Atomstroyexport, and the vice-president of Iran's Atomic Energy Organization.

But in March 2007, the Russians announced that the fuel delivery would be delayed again, claiming Iran had fallen behind on its payments. Iran, however, heatedly denied that claim and accused Moscow of "politicizing" the issue. In fact, Russia, with US

encouragement, was "slow rolling out the supply of enriched uranium fuel," according to Gottemoeller. Moscow was making clear privately, she wrote, that it was holding back on the fuel to pressure Iran on its enrichment policy.Moscow finally began delivering reactor fuel to Bushehr in December 2007, apparently in response to the Bush administration's plan to put anti-missile systems into the Czech Republic and Poland. That decision crossed what Moscow had established as a "red line."

Barack Obama's election in November 2008, however, opened a new dynamic in US-Russia cooperation on squeezing Iran's nuclear program. Within days of Obama's cancellation of the Bush administration decision to establish anti-missile sites in Central Europe in September 2009, Russian officials leaked to the Moscow newspaper Kommersant that it was withholding its delivery of S-300 surface-to-air missile systems for which it had already contracted with Iran.Iran needed the missiles to deter US and Israeli air attacks, so the threat to renege on the deal was again aimed at enhancing Russian leverage on Iran to freeze its uranium enrichment program, while giving Moscow additional influence on US Russian policy as well.

The Russian attempt to exploit Iran's dependence on Moscow for its reactor fuel for political purposes was not the first time that Iran had learned the lesson that it could not rely on foreign sources of enriched uranium – even when the Iranians had legal commitments to provide the fuel for Iran's nuclear reactor.

The Russian attempt to exploit Iran's dependence on Moscow for its reactor fuel for political purposes was not the first time that Iran had learned the lesson that it could not rely on foreign sources of enriched uranium – even when the Iranians had legal commitments to provide the fuel for Iran's nuclear reactor. After the Islamic revolution against the Shah in 1979, all of the foreign suppliers on which Iran had expected to rely for nuclear fuel for Bushehr and its Tehran Research Reactor reneged on their commitments.

Iran's permanent representative to the IAEA, Ali AsgharSoltanieh, sent an official communication to IAEA Director General Yukiya Amano on March 1, 2010, stating that specific contracts with US, German, French and multinational companies for supply of nuclear fuel had been abruptly terminated under pressure from the US government and its allies. Soltanieh said they were "examples [of] the root cause of confidence deficit vis-à-vis some Western countries regarding the assurance of nuclear supply."

The earlier experiences led Iran to decide around 1985 to seek its own indigenous enrichment capability, according to Iranian officials. The experience with Russia, especially after 2002, hardened Iran's determination to be self-reliant in nuclear fuel fabrication. The IAEA's Clark told the US diplomat in mid-2006 that, if the Russians did cut off their supply of fuel for Bushehr, the Iranians were prepared to make the fuel themselves.

It is not clear whether the Obama administration actually believes the official line that Iran should and must rely on Russia for nuclear fuel. But the history surrounding the issue suggests that Iran will not accept the solution on which the US and its allies are now insisting.

Source: http://consortiumnews.com/, 20 May 2014

OPINION –Andrew Gibson

Obama is Still Right: A World without Nuclear Weapons is Possible

In 2009, Barack Obama gave a powerful speech in Prague, asserting that nuclear disarmament will be at the heart of his foreign policy. His announcements (such as the opening of talks on the New START treaty) and his rhetoric (a "world without nuclear weapons") caused a flurry of activityamong campaigners and diplomats,and some critics. Obama's initiative had some success. New START was ratified, the US hosted a majorsummit on securing nuclear materials, and Iran's uraniumenrichmentprogramme isweaker.However, the recent breakdown in US-Russia relations has led some to question whether further progress can be made. The *Guardian's* Julian Borger claimed that a spat over Ukraine disrupted a G8 initiative to halt the spread of fissile material. He also noted the view of several experts that progress on tactical nukes is now unlikely.

Elsewhere, one could be forgiven for thinking that nuclear weapons are here to stay:France, among others, recently reasserted the centrality of nukes to its strategic doctrines.Despite these worrying developments, the key points in Obama's Prague speech are still true. Now as then, the existence and spread of nuclear weapons is dangerous, unacceptable and must be dealt with bilaterally and

multilaterally. Now as then, states must overcome their differences at least to the extent of avoiding the catastrophic use of WMD.

There is some evidence this is happening, despite perceptions of a 'new Cold War'. The US and Russia continue to respect the provisions of the New START treaty and have kept upmutual inspections of nuclear sites throughout the Ukraine crisis. Furthermore, Russia and the US continue to participate in negotiations on Iranian nukes and work together on the destruction of Syria's chemical weapons. Today's policymakers should not be resigned or fatalistic. Rather, they should work together and redouble their efforts to disarm the world's worst weapons.

Source: http://www.leftfootforward.org/ , 20 May 2014.

OPINION –Desmond Tutu and David Krieger

We Must End the Madness of Nuclear Weapons

Some five decades ago, world leaders came together on an urgent mission to avert "the devastation that would be visited upon all mankind" in the event of a nuclear war. The five then-existing nuclear weapon states – the US, Soviet Union (now Russia), UK, France and China – signed the international nuclear NPT. They agreed to negotiate in good faith to end the nuclear arms race at an early date and to achieve a world without nuclear weapons.Five decades later, the nuclear threat has only increased. Four more states – Israel, India, Pakistan and North Korea – now have nuclear weapons. The world is more dangerous because the signatories of the NPT have failed to keep their promises and have undermined the rule of law.

The US exploded 67 nuclear weapons there between 1946 and 1958, including a bomb 1,000 times more powerful than the one dropped on Hiroshima. Marshall Islanders still suffer high cancer rates and environmental poisoning as a result. They are not seeking compensation; in fact, their bold stance could potentially jeopardize the essential funding and protection the US provides them.

Until now, no one has held them accountable. In April 2014, the Republic of the Marshall Islands courageously took the nine nuclear weapons-wielding Goliaths to the ICJ to enforce compliance with the NPT and customary international law.This tiny Pacific nation's firsthand experience with nuclear devastation compelled it to take a stand. The US exploded 67 nuclear weapons there between 1946 and 1958, including a bomb 1,000 times more powerful than the one dropped on Hiroshima. Marshall Islanders still suffer high cancer rates and environmental poisoning as a result.They are not seeking compensation; in fact, their bold stance could potentially jeopardize the essential funding and protection the US provides them. Yet their desire to protect their fellow humans from the pain and devastation wrought by nuclear weapons outweighs fear of retribution.

Nuclear weapons are fundamentally immoral because they have only one purpose: to indiscriminately destroy human life at the push of a button, without regard for whether they kill innocents or combatants, children or adults. In 1996, the ICJ warned, "The destructive power of nuclear weapons cannot be contained in either space or time. They have the potential to destroy all civilization and the entire ecosystem of the planet."No government, army, organization or individual should have the ability to impose nuclear devastation on other humans. This truth is enshrined in Article VI of the NPT: "Each of the Parties to the Treaty undertakes to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a treaty on general and complete disarmament under strict and effective international control."

The five original nuclear weapon states signed onto this statement, but have failed to honor their commitments. The four more recent nuclear weapon states – Israel, India, Pakistan and North Korea – have followed their lead in defying international legal obligations.Instead of working to end the insanity of the nuclear age once and for all, these nine countries waste trillions of dollars on their nuclear arsenals, in violation of both the treaty and customary international law. We can no longer afford this perilous game of nuclear roulette. Every day that world leaders delay action on disarmament, they impose the unacceptable menace of nuclear devastation upon every human on the planet.

Addiction to nuclear weapons costs us all in other ways as well. The price of these weapons keeps rising. The nuclear nations spend a combined $100 billion on them every year. Imagine how far this amount could take us in providing access to education, health care, food and clean water for the people of the world.The people of the Marshall Islands are standing

up to say that it's time to end the era of nuclear madness. They are joined by Nobel Peace Laureates, and leaders and experts from every field who support this historic legal action.We call on President Obama and the leaders of the other nuclear weapon states to fulfill their legal obligation to negotiate in good faith to achieve a world free of nuclear weapons. It is not unrealistic to ask that the world's most powerful governments start obeying the law and keeping their promises.

Nothing good has ever come of nuclear weapons. Nothing good ever will. For the sake of all humanity, current and future, it's time to respect the law and keep the promise.

Source: http: //www.truth-out.org/, 20 May 2014.

OPINION –K.S. Parthasarathy

Final Word on the Health Risks from Fukushima Accident

People in Fukushima may receive on average less than 10 mSv due to the accident over their whole lifetime. The lifetime dose from natural background radiation is 170 mSv.Discernible changes in future cancer rates and hereditary diseases are not expected as the exposures people received were very low.

In its report titled "Levels and effects of radiation exposure due to the nuclear accident after the 2011 great east-Japan earthquake and tsunami," published on 02 April 2014, the UNSCEAR stated that any increase in cancer among the public is unlikely following the accident. The committee concluded that cancer levels are likely to remain stable in the wake of the nuclear power accident. Discernible changes in future cancer rates and hereditary diseases are not expected as the exposures people received were very low. "... the expected low impact on cancer rates of the population is largely due to prompt protective actions on the part of the Japanese authorities following the accident." a press release from UNSCEAR revealed.

The committee estimated that people in Fukushima may receive on average less than 10 mSv due to the accident over their whole lifetime. This may be compared with 170 mSv lifetime dose from natural background radiation that people in Japan typically receive at the rate of 2.1 mSv annually.According to the committee, the most important health effect is on mental and social well-being, related to the enormous impact of the earthquake, tsunami and nuclear accident, and the fear and stigma related to the perceived risk of exposure to radiation.The committee noted the theoretical possibilitythat the risk of thyroid cancer among the group of children most exposed to radiation could increase and concluded that the situation needs to be followed closely.

Thyroid cancer is rare among young children. Specialists have observed an appreciable increase in thyroid cancer among children exposed during the accident at Chernobyl nuclear power station.The Committee analyzed worker doses reported by the management and also independently assessed doses for some of the workers. Its assessments are broadly consistent with reported doses, but uncertainties remain for exposures during the early phase of the accident.In the case of workers, the Committee concluded that no discernible increase in cancer or other diseases is expected; however, the most exposed workers will receive regular health checks.

The most important health effect is on mental and social well-being, related to the enormous impact of the earthquake, tsunami and nuclear accident, and the fear and stigma related to the perceived risk of exposure to radiation.The committee noted the theoretical possibilitythat the risk of thyroid cancer among the group of children most exposed to radiation could increase and concluded that the situation needs to be followed closely.

The Committee estimated the effects of radiation exposure on both terrestrial and marine ecosystems and found that any effects would have been transient."For marine ecosystems, the possibility of effects on flora and fauna was limited to the shoreline area adjacent to the power station and the potential for effects over the long term was considered insignificant," the UNSCEAR press release added.

The estimates of the Committee for the releases of iodine -131 and caesium-137 , two of the more significant radio-nuclides from the perspective of exposures to people and the environment were lower by a factor of 10 and 5 respectively compared to the releases from Chernobyl.

Specialists consider that the conclusions of the committee are the most authoritative because of two reasons.Firstly, the conclusions are based on estimates of the exposure of various population groups – including children. And secondly, the committee relied on scientific knowledge of health impacts following radiation exposure.The General

Assembly of the United Nations set up the UNSCEAR in 1955. "Its mandate in the United Nations system is to assess and report levels and effects of exposure to ionizing radiation."The United Nations General Assembly has designated 27 countries, including India, as members of the committee.

Pakistan is set to increase funding for the armed forces and the national nuclear body, the PAEC, under the forthcoming 2014-FY2015 budget.The budget would be just over US $81 million for the PAEC, up from nearly $63 million in 2013 (which was later increased to $66 million).

Since 1955, UNSCEAR issued 22 majorpublications. Governments and organizations universally rely on the Committee's estimates as the scientific basis to evaluate radiation risk and to establish protective measures. The ICRP bases its recommendations on the conclusions of UNSCEAR which in turn reviews and assesses levels of radiation exposures and effects on A-bomb survivors and other exposed groups on a long-term basis.

Source: http://ksparthasarathy.wordpress.com/2014/05/22/2534/, 22 May 2014.

NUCLEAR STRATEGY

PAKISTAN

Increase in Pakistan Defense and Nuclear Budgets Likely

Media reports here have outlined that Pakistan is set to increase funding for the armed forces and the national nuclear body, the PAEC, under the forthcoming 2014-FY2015 budget.The budget would be just over US $81 million for the PAEC, up from nearly $63 million in 2013 (which was later increased to $66 million)....

"This sum is primarily geared toward the construction of the two 1,000-MW generation-III safeguarded Chinese nuclear power reactors to be established at Karachi, K-1 and K-2, that were recently initiated by the PM," he said.However, he added, "Additional financial allocations are most likely earmarked for the unsafeguarded KNC where the fourth plutonium production heavy water reactor is reportedly nearing completion."Ahmed said the KNC has been vital in allowing Pakistan to modernize its national deterrent due to its central role in the production of plutonium."These and other classified projects are presumably aimed at the development of a new variety of lightweight, compact and more powerful and efficient weapon designs, suitable for a variety of ballistic and cruise missiles, that require additional fissile material[plutonium] production, and fuel fabrication in addition to maintaining and improvingexisting infrastructure.

"All this has been possible due to the steady enhancement of indigenous manufacturing capabilities developed by the PAEC during the past 35 years," he added.The budget increase for the armed forces is also significant.The new defence budget proper is said to be just over $7.6 billion. This is an increase from the nearly $6.4 billion the previous year, (revised later to $6.6 billion). ....

Source: http://www.defencenews.com/, 19 May 2014.

RUSSIA

Inside the Ring: Russia Tests New Intercontinental Ballistic Missile Warhead

The latest test highlights Moscow's strategic nuclear modernization program and raises concerns about Russia's earlier threats to develop missile defense-defeating warheads in response to US and NATO defences in Europe.

Russia conducted a flight test of an ICBM on 20 May that state media in Moscow said included the test of an advanced warhead.The road-mobile SS-25 missile was fired from a test range at Kapustin Yar in southern Russia to an impact zone in SaryShagan in neighboring Kazakhstan."The purpose of the launch was to test a prospective warhead of ICBM missiles," the official Interfax news agency quoted Defence Ministry spokesmanIgor Yegorov as saying.The RIA Novosti news agency said the test was used to develop a "new combat payload for future ICBMs."No additional details were provided by the Russians.Defense analysts say the latest test highlights Moscow's strategic nuclear modernization program and raises concerns about Russia's earlier threats to develop missile defense-defeating

warheads in response to US and NATO defences in Europe.

Former Pentagon official Mark Schneider, who monitors Russian strategic military developments, said the Russians have said the new follow-on SS-27 ICBM and the new SS-NX-32 SLBM, known as the Bulava, will be equipped with advanced warheads – up to 10 warheads per missile."Two things are being reported in the Moscow press about the SS-27 and the Bulava– 10 warheads and hypersonic vehicles," Mr. Schneider said.A Russian ICBM normally coordinates the firingofmultiple warheads.Russia, along with China, is developing ultra-high-speed, hypersonic vehicles for launch atop missiles. Hypersonic vehicles, both powered and glide weapons, are designed to travel at the edge of space and are being built to defeat US missile defenses.

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The NASIC to "allow Russian strategic missiles to penetrate missile defense systems."The missile test followed a nuclear forces exercise this May that Russian officials described as "massive."The Obama administration is under pressure from Congress to hold Moscow accountable for violations of arms control agreements, including the 1987 Intermediate-range Nuclear Forces Treaty and possibly the 2010 New START. ...

Source:the washingtontimes, 21 May 2014.

USA

Congress Targets Russia's 'Satan' Missile

The latest showdown between the US and Russia could go ballistic. Congress is looking to pressure a Ukrainian lab to end its maintenance of one of Moscow's fiercest missiles.Earlier this May, the Russians announced they would discontinue the sale of rocket engines to the US if those engines could be used for military purposes.At least some members of Congress are looking to retaliate in kind. An amendment to the annual Pentagon budget bill, expected to pass in thethird week of May 2014, instructs President Obama to begin talks with the Ukrainian government aimed at ending long-standing cooperation between Kiev and Moscow on the maintenance of their ICBMs. The long-range missiles are known in Russia as the RS-20s and dubbed by NATO as the SATANs.

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Rep. Mike Rogers, the Alabama Republican who chairs the House Armed Services subcommittee that oversees the US nuclear arsenal, will introduce the amendment on 19 May that focuses on Ukraine's Yuzhnoye Design Bureau. During the Cold War, that bureau helped design and maintain the RS-20 missiles—as well as many, many other weapons. According to one Ukrainian think tank, out of nearly 600 missiles in the inventory of the Russian Strategic Missile Forces, only 40 or so are actually made in Russia. Today, the Ukrainian government continues to play a role in providing maintenance to the Russian missiles, as well.

On February 26, the Russian newspaper *NezavisimayaGazeta* published an article quoting a recently retired chief of staff for Russia's strategic missile command, Viktor Yesin, who acknowledged that Russia and Ukraine continued to have an agreement on the maintenance of the missiles. "This is a continuous benefit for the Ukrainian enterprise, which mainly exists due to the money that Russia pays for providing warrantee oversight for the Voyevoda missile system," he told the newspaper. "These economic ties are valuable, regardless of who comes to power in Ukraine. And I do not foresee that this inter-governmental agreement will be revoked."Rogers would like to see this agreement revoked—in part because Russia's annexation of Crimea violates the terms of the "Budapest Memorandum" that guaranteed Ukraine's territorial integrity after the cold war in exchange for Kiev giving up its nuclear arsenal.

Rogers'amendment urges the Obama administration to begin talks with Ukraine aimed at halting "the activities of the Yuzhnoye Design Bureau and any other Ukrainian industry that supports the military or military industrial base of the Russian Federation while Russia is violating its commitments under the Budapest Memorandum, illegally occupying

Ukrainian territory and supporting groups that are inciting violence and fomenting secessionist movements in Ukraine."

In the February 2014 interview, Yesin said if the cooperation with Ukraine was halted, Russia had the capability to continue the maintenance of the RS-20 missiles, but also acknowledged "there will be difficulties" in part because the detailed plans and specifications for the missiles reside at the Yuzhnoye Design Bureau.If passed into law, the Rogers amendment would require Secretary of Defense Chuck Hagel to submit a report within 30 days of the bill's passage to Congress on the US plan to end any Ukrainian cooperation with Russia on the ICBMs and "any recommendations it has for how the US and its allies could benefit from the capability of the Yuzhnoye Design Bureau."

Source: The Daily Beast, 19 May 2014.

BALLISTIC MISSILE DEFENCE

ISRAEL

Israel, US Holding Joint Missile Defense Drill

Israel and the US were slated to hold a joint missile-defense drill on 18 May 2014 morning.The biennial exercise is designed to test the ability of joint operations between the two nations in response to missile attacks.Some 1,000 American soldiers arrived in Israel for the drill, Israel Radio reported.On 15 May 2014 it was announced that the Israeli and American air forces had began a joint exercise, which is expected to last until third week of May. The IDF released no additional details about the drill.US Secretary of Defense Chuck Hagel met with PM Binyamin Netanyahu, Defense Minister Moshe Ya'alon and other Israeli officials to discuss regional security issues. In his meeting with Netanyahu, Hagel reiterated the Obama administration's commitment to deter Iran from gaining nuclear weapons capabilities.

Moscow has not been viewing this development in Spain positively and has also threatened to withdraw from the START Treaty since such development was viewed by Russia to "undermine strategic stability."Putin views such defensive system is a part of "strategic offensive potential." Since the missile defence system in Rota would enhance the ability of the US and NATO states to quickly respond to a missile threat, it would further undermine Russia's nuclear deterrent capability.

The US defense chief stressed in his meeting with the PM that American support for Israel is currently at "an all-time high.""America's commitment to Israel's security is resolute," Hagel stated. "The US' support for Israel is anchored in our nations' commitment to democracy and freedom."In March a US general proposed that Israel upgrade its anti-missile systems to include neighboring Jordan and possibly Egypt.The two Arab countries that have full peace treaties with the Jewish state share some of its concerns regarding the disputed nuclear program of Iran and the civil war wracking Syria – both states with longrange missile arsenals.

Jordan's Red Sea port of Aqaba is also under threat from short-range rockets fired by Islamist terrorists in the largely lawless Egyptian Sinai, though they have more regularly targeted the next-door Israeli resort of Eilat.…The US has extensively underwritten Israel's two deployed missile interceptors – the Arrow II ballistic-missile interceptor and Iron Dome shortrange rocket interceptor – as well as others in the works, and allowed their integration with US counterpart systems.

Source: The Jerusalem Post, 18 May 2014.

USA

US Tango with the European Phase Adaptive Approach

As a part of the EPAA which Washington confirms is being deployed to counter missile threats from North Korea and Iran, the US had chosen Spain to host one of its components of the missile defence system in order to "protect all NATO European populations and territory." In February 2011, reports confirmed that out of the four destroyers to be hosted in Rota, Spain, one of the destroyers arrived the naval port of Rota. This destroyer known as the USS Donald Cook would be joined by three more Arleigh Burke class missile destroyers. These destroyers would be fitted with the Aegis systems. However, USS Ross, USS Porter, and USS Carney are yet to arrive at Spain. The ships would be "capable of tracking and shooting down ballistic missiles in flight" by using the Aegis radar and the SM-3 interceptors.

Reports suggest that Moscow has not been viewing this development in Spain positively and has also threatened to withdraw from the START Treaty since such development was viewed by Russia to "undermine strategic stability."Putin views such defensive system is a part of "strategic offensive

potential." Since the missile defence system in Rota would enhance the ability of the US and NATO states to quickly respond to a missile threat, it would further undermine Russia's nuclear deterrent capability. Even though Russians believe that the US missile defence system has not yet reached a stage where it could threaten Moscow's nuclear deterrent capability, Russia could still feel the need to withdraw from the Treaty. Moreover, the Treaty also has a clause attached by Moscow that on "exceptional circumstances" (which include the build-up of missile defence system, Moscow could withdraw from the treaty.

Spain, on the other hand, uses the same Aegis missile defence system on their F-100 Alvaro de Bazan-class frigates and hence these frigates would be interoperable with the US missile defence system. Other European states like Poland, Czech Republic and Turkey are also to host the missile defence systems under the EPAA. However, while Poland and Czech Republic would be hosting ground based missile defence system, Spain is hosting sea-based missile defence system which means there would be a greater coverage from Spain. The missile defence system is reported to carry "advanced sensor capabilities" and interceptors which can "shoot down ballistic missiles."

In October. 2013, ground broke in Romania on the first operational Aegis Ashore site, which will be capable of launching SM-3 Block IAs, IBs and IIAs. The site continues on track for 2015 deployment as part of PAA Phase 2. Along with deployed Aegis Ballistic Missile Defense ships, Romania's Aegis Ashore site will provide additional ballistic missile coverage of NATO countries.

... As the US plan to develop conventional prompt global strike systems which would reduce their reliance on nuclear weapons, the reliance on a ballistic missile defence would increase in order to strengthen the CPGS plan.However, as some experts suggest that the US missile defence system is defensive in nature, Russia does not buy this. The US has a first strike policy and hence, the missile defence system definitely forms a part of its offensive strategy. NATO too does not have a no first use policy and hence, the missile defence system in Europe is not viewed to be a defensive one by Russia. Some Russians have also warned of circumstances that Moscow could resort to a pre-emptive strike. ... As the US proceeds with the Phase Adaptive Approach, this move of deploying ships in Rota makes it evident that the US is hell bent on deploying the missile defence system amidst Russian concerns and hue and cry.

Source: http://www.independentoped.com/, 21 May 2014.

Second Generation Standard Missile-3 Deployed as Part of Missile Defence System

In partnership with the Missile Defense Agency, the US Navy deployed the second-generation SM-3 Block IB made by Raytheon Company for the first time, initiating the second phase of the Phased Adaptive Approach."The SM-3 Block IB's completion of initial operational testing in 2013 set the stage for a rapid deployment to theater," said Dr. Taylor W. Lawrence, president of Raytheon Missile Systems. "The SM-32 s highly successful test performance gives combatant commanders around the world the confidence they need to counter the growing ballistic missile threat."In 2009, the administration announced the US's decision to adopt a new, more flexible approach to missile defence of both the US and Europe. The PAA Phase 1 began in March 2011 when the USS Monterey deployed carrying SM-3 Block IAs.

"The SM-3 program's evolution speaks to the importance of harnessing past successes to deliver increasingly capable systems to our customers, while reducing costs and delivery timelines," said Dr. Mitch Stevison, Raytheon's SM-3 program director.In Oct. 2013, ground broke in Romania on the first operational Aegis Ashore site, which will be capable of launching SM-3 Block IAs, IBs and IIAs. The site continues on track for 2015 deployment as part of PAA Phase 2. Along with deployed Aegis Ballistic Missile Defense ships, Romania's Aegis Ashore site will provide additional ballistic missile coverage of NATO countries. The first Aegis Ashore test with the SM-3 Block IB and upgraded Aegis BMD Weapons System will take place this year at the Pacific Missile Range Facility, Kauai, Hawaii. *Source: Missile Threat, 18 May 2014.*

First Land-Based Launch of Ballistic Missile Defence System Completed Off Kauai

The first land-based launch test of the SM-3 made by Raytheon Co., a component of the Aegis Ashore system developed by Lockheed Martin, was successfully completed over the Pacific Ocean off Hawaii near the Pacific Missile Range Facility on Kauai.During a Standard MIssile-3 made by Raytheon was launched while a simulated target was tracked by the Aegis Weapon System, made by Lockheed Martin, the first time an Aegis system was tested using a land-based missile launcher."This test is a

very significant milestone for this joint government industry team, not only because it is the first live fire of Aegis Ashore but also because it has happened on-schedule with an exceptionally tight program timeline," Brendan Scanlon, Lockheed Martin's director of Aegis Ashore programs, said in a statement. "We're now one step closer to achieving an operational Aegis Ashore capability to combat missile defense threats to further protect our nation and allies."

The USMDA, the Navy, and sailors at the Aegis Ashore Missile Defense Test Complex and Pacific Missile Range Facility on the west side of Kauai, also participated in the test."The capability to deploy the SM-3 at sea and on land gives combatant commanders operational, deployment and logistical flexibility," Dr. Taylor Lawrence, president ofRaytheon Missile Systems, said in a statement.

Source: http://www.bizjournals.com/pacific/, 21 May 2014.

The new government may reserve its policy decisions on nuclear energy as it had opposed certain measures taken by the UPA government, especially the Nuclear Liability Act. The BJP plans to follow a two-pronged independent nuclear programme, unencumbered by foreign pressure and influence, for civilian and military purposes, especially as nuclear power is a major contributor to India's energy sector, according to the manifesto.

NUCLEAR ENERGY

INDIA

The new government may put on the back-burner a plan to install 20 gigawatts of nuclear power capacity in the country by 2020 and instead focus on wind and solar to achieve energy security, says PwC. "Nuclear projects are not likely to be on the radar of the Modi government, at least for the next two years. It will first focus on increasing coal production, allocation and pricing, apart from clearing the balance sheets of distribution companies," PwC executive director energy utilities ... SambitoshMohapatra told PTI.

Rather than nuclear, the Modi government may focus on increasing wind and solar power capacity, especially when these models worked successfully in Gujarat, Mohapatra said. The power, coal, and new and renewable energy portfolios in the Modi Cabinet are held by PiyushGoyal, who is from Maharashtra, where BJP ally Shiv Sena was opposing the 9,900 MW Jaitapur nuclear project.

... In its election manifesto, the BJP promised to take steps to maximise the potential of oil, gas, hydel power, ocean, wind, coal and nuclear sources. The party said it considers energy efficiency and conservation crucial to energy security. It also promised to expand and strengthen the national solar mission and come out with a responsible and comprehensive National Energy Policy.

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The Ministry of Power had in a presentation said the top priority should be ensuring round-the-clock power supply and easing fuel shortages, along with taking steps to tap the country's hydro power potential, reform distribution and ensure the financial viability of distribution companies. It said environment and forest clearances to coal mines should also be mitigated. However, the presentation did not speak about nuclear power and the steps the new government should take to ease norms on foreign investment in the sector as well as tweaking certain policy decisions to increase capacity. An industry expert from KPMG, who did not want to be identified, said that before the new government takes any decision on nuclear power, it will first have to tackle issues of supply chain, safety and acceptance from locals. ...

Source: The Economic Times, 27 May 2014.

UAE

UAE Receives First Nuclear Energy Reactor Vessel

The country's first nuclear energy reactor is on track to begin operations in 2017, say officials.The UAE's first nuclear energy Reactor Vessel arrived at the site of the country's nuclear energy programme, Barakah.Marking significant progress in the nation's nuclear plan, official news agency WAM reported.The Emirates is currently building four nuclear energy plants, and awarded the contract to

construct the plants to a consortium led by the Korean in 2009.

Construction on the first nuclear reactor, Barakah 1, began in July 2012, and work on Units 1 and 2 is now over 44 per cent complete, according to officials. The third and fourth units are slated to begin commercial operations in 2019 and 2020 respectively."With the arrival of our first Reactor Vessel, ENEC and KEPCO remain on track to deliver the country's first nuclear energy reactor, Barakah Unit 1, in 2017," said Mohamed Al Hammadi, CEO of ENEC.

The RV is one of the largest components in a nuclear energy plant and is one of the many defense-in-depth barriers to ensure safety of the plant. Controlled nuclear reactions occurring inside the vessel release energy that is then converted into electricity....The UAE and South Korea also signed three nuclear energy MoUs. The first, between ENEC and the South Korean Ministry of Trade, Industry and Energy, calls for cooperation in developing a direct employment programme in nuclear energy for graduates from Korea.

The UAE hopes to generate up to 25% of its electricity needs through nuclear means by 2020 – when all the four plants are complete – and hopes the plants can help reduce 12 million tons of carbon emissions per year.

The second MoU will help develop internship programmes and job opportunities in the sector for students of both nations, while the third agreement between ENEC, KEPCO and its subsidiaries will see the development of a local plant services industry in the UAE, the report said.The UAE hopes to generate up to 25% of its electricity needs through nuclear means by 2020 – when all the four plants are complete – and hopes the plants can help reduce 12 million tons of carbon emissions per year.

Source: http://gulfbusiness.com/, 20 May 2014.

URANIUM PRODUCTION

GENERAL

This is a Major Loss for Uranium Supply

Uranium prices took another slump the last several weeks. Spot prices for uranium oxide have now fallen below $30 per pound for the first time since 2005. Even long-term prices sagged, falling below $50 – to a current $45 per pound. That's stopped the wave of optimism that had been running through uranium stocks earlier in 2014.But the fundamental news in terms of supply and demand here continues to be bullish. As evidenced by a major mine deferral we saw mid May 2014. The move came from the world's largest public uranium producer, Cameco. Who told regulators in Canada that it is shelving one of its biggest development projects in the uranium-rich province of Saskatchewan. The CNSC said in a press release that Cameco is not proceeding with permitting for the company's Millennium project. The up-and-coming mine had been scheduled for public hearings in June 2014, to consider the grant of a 10-year operating license.

But the CNSC noted that Cameco "does not wish to proceed with the licensing of the Millennium Mine project at this time." With the miner citing "current economic conditions" as the reason for the deferral. That undoubtedly means Cameco is concerned about low uranium prices. And how they will affect the potential economics of a start-up at Millennium. The company has now reportedly withdrawn its application to construct and operate the mine. Representing one of the biggest losses of potential supply the uranium market has seen for some time. Simply put, Millennium was one of the world's premier uranium development projects. Hosting an indicated mineral resource of 46.8 million pounds uranium oxide – grading a league-leading 4.53% U3O8. The proposed mine here would have been one of the world's largest producers. Slated to put out up to 7 million pounds of uranium oxide yearly. But all of that supply is now lost to the market. Just another sign that current prices are too low to support much of the existing uranium mining industry. Let alone necessary expansion projects. This is not a sustainable situation. With supply also falling in major producing centre like Kazakhstan and Africa, something will have to give....

Source: http://oilprice.com/, 19 May 2014.

JAPAN

Japan Faces Season of Peak Power Demand without Nuclear Plants

Japan faces a long, hot summer without nuclear energy as power companies warn they will effectively have nothing in reserve when seasonal demand peaks. "We have managed to secure the minimum necessary power surplus thanks to the support of other utilities companies," said Jiro

Kagawa, the vice-president of Kansai Electric Power. "But we have virtually no extra power supply." Kagawa's comments are seen as a thinly veiled plea to the government and nuclear-industry regulators to hasten the approval of modifications at atomic power plants across the country.

All of Japan's reactors remain offline as regulators examine plants for defects highlighted by the disaster at the Fukushima plant in March 2011. Work is still under way at the site to get four crippled reactors under control and to clean up the radiation that escaped when it was destroyed by an earthquake and tsunami.

All of Japan's reactors remain offline as regulators examine plants for defects highlighted by the disaster at the Fukushima plant in March 2011.Work is still under way at the site to get four crippled reactors under control and to clean up the radiation that escaped when it was destroyed by an earthquake and tsunami. And while Japan managed to make it through the last three summers relatively unscathed, analysts fear that fading public consciousness will mean people forget to rein in their power consumption, while demand from the industrial sector is rising as the national economy picks up again....

Russia plans to sign a contract with Iran to build two more nuclear reactors at its Bushehr power plant as part of a broader deal for up to eight reactors in the Islamic state

Despite suggestions on a number of occasions that regulators were about to give approval for a reactor to restart, the agency is being extremely conservative. Its predecessor came in for savage criticism for either failing to spot flaws in the defences at Fukushima or not insisting that more measures be taken to protect the site. Another hurdle will come after the regulators finally grant approval for a reactor to be fired up again, when it has to be endorsed by local authorities. The majority of the Japanese public is deeply suspicious of nuclear energy, particularly people who live close to the 50 reactors that dot the coastline. ...

Source: South China Morning Post, 19 May 2014.

NUCLEAR COOPERATION

IRAN–RUSSIA

Russia Plans to Buildup to Eight New Nuclear Reactors in Iran

Russia plans to sign a contract with Iran to build two more nuclear reactors at its Bushehr power plant as part of a broader deal for up to eight reactors in the Islamic state, a source close to the negotiations told. It was not immediately clear how this might affect six global powers' talks with Iran addressing disputed aspects of its nuclear programme. Iran has resisted demands for cuts in its uranium enrichment capacity, pointing to plans for a future network of nuclear power stations. ...

The talks ended in the second week of May with little progress; they are to resume in Vienna in June 2014. Russia, one of the six powers, built Iran's only operating nuclear power reactor, at Bushehr. "Russia and Iran may sign an intergovernmental agreement on building from four to eight nuclear reactors, and, under the deal, the contract for the construction of the first two reactors as additions to Bushehr," the source said. Russian state nuclear corporation Rosatom said earlier it was in talks with Iran on the potential construction of more reactors there but revealed no details. Rosatom officials could not immediately be reached for comment on 22 May. ...

Source: Reuters, 22 May 2014.

SOUTH KOREA–UAE

Korea Builds Nuclear Reactor in United Arab Emirates

The Ministry of Trade, Industry & Energy announced that it built the first nuclear reactor in the 1,400 MW atomic power plant under construction in Barakah, UAE on May 20. The ceremony was attended by President Park Geun-hye and Minister of Trade, Industry & Energy Yoon Sang-jik. A consortium of the KEPCO won the order for four nuclear power stations from the UAE in December 2009 at US$40 billion combined, turning itself into the world's sixth nuclear power plant exporter. The feat was accomplished in about half a century, since its accession to the IAEA in 1957.

The power stations exported to the UAE at this time are APR 1400, which are the same type as the third and fourth Shigori Plants in Korea.

The construction of the first one in the UAE and the other three are scheduled to be completed by 2017 and 2020, respectively. At present, approximately 1,600 Korean workers are staying in the construction

sites, and the builder is receiving 200-300 billion won (US$195-293 million) each month according to the progress of the project. The job creation effect is estimated at about 110,000 for 10 years. President Park Geun-hye visited the sites in person to better publicize the excellence of Korean nuclear power stations and help boost the exports. She is going to meet with Sheikh Mohammed bin Zayed Al Nahyan, the crown prince of Abu Dhabi, for closer bilateral cooperation, too.

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Source: http://www.businesskorea.co.kr/, 20 May 2014.

NUCLEAR PROLIFERATION

IRAN

Iran and IAEA End Nuclear Talks, No Early Sign of Breakthrough

The UN nuclear watchdog sought in talks with Iran to advance a long-stalled investigation into Tehran's atomic activities, but it was not immediately clear whether any headway was made. A spokeswoman for the IAEA confirmed the two sides met in Tehran, but said the IAEA was not planning to issue a statement about the talks, leaving open the possibility one might be made later.Diplomatic sources had said the Vienna-based UN agency and Iran were expected to discuss IAEA requests for information about detonators that can, among other things, be used to set off a nuclear explosive device.It could have provided an opportunity for progress on a key issue ahead of a quarterly IAEA report on Iran's nuclear program, due this third week of May, which will be debated by the UN agency's 35-nation governing board at a meeting in early June 2014.

On the most sensitive of those – for Iran to provide information about the development of so-called Explosive Bridge Wire detonators - diplomats have said the UN atomic agency was seeking further clarifications from Tehran.How Iran responds to the IAEA's questions is regarded as a litmus test of its readiness to start engaging with the investigation into what the UN agency calls the possible military dimensions of the country's nuclear program.

Under a phased cooperation pact agreed between the two sides in November 2014, Iran was to take seven transparency steps by May 15 2014 to help allay international concern about its nuclear program, which the West fears may be part of a military project.On the most sensitive of those – for Iran to provide information about the development of so-called Explosive Bridge Wire detonators - diplomats have said the UN atomic agency was seeking further clarifications from Tehran.How Iran responds to the IAEA's questions is regarded as a litmus test of its readiness to start engaging with the investigation into what the UN agency calls the possible military dimensions of the country's nuclear program.

... The IAEA-Iran talks are separate from those between Tehran and six world powers - the US, France, Germany, Britain, China and Russia - aimed at reaching a broader deal to settle the decade-old nuclear dispute by late July 2014.But they are complementary as both focus on fears that Iran may covertly be seeking the means and expertise to assemble nuclear weapons. Iran and the powers held a new round of negotiations in the second week of May, but made little progress.US officials say it is vital for Iran to resolve IAEA concerns for a successful outcome of the broader diplomacy. But Iranian denials of any atomic bomb aspirations will make it difficult for Tehran to admit to any illicit work in the past.

... A May 12 meeting in Vienna apparently failed to fully resolve the issue.Also, the two sides have yet to announce any agreement on what issues to tackle in the next phase under 2013 agreement. The IAEA wants to speed up its inquiry into suspected atomic bomb research by Iran.

Source: Reuters, 20 May 2014.

Iran can Break Out to Nuclear Weapons 'Very Quickly'

Iran can break out to nuclear weapons "very quickly," and Israel must maintain operational readiness for any threat that may arise, Maj.-Gen. (res.) Amos Gilad, director of political-

military affairs at the Defense Ministry, warned on 19 May 2014.Speaking in Tel Aviv at a security conference organized by the Israel Defense publication and the Israel Artillery Association, Gilad said the security forecast was not sunny. "Today is a pleasant day. But there are clouds, and a storm, on the horizon," he said. "People don't believe it until it comes," he added.Iran's nuclear weapons program remains the top threat to Israeli security, he said, describing the Islamic Republic as a "horrible regime" that threatens to exterminate Israel. He referred to a past statement by former Iranian president Ayatollah Hashemi Rafsanjani, who said that one atomic bomb would be enough to destroy Israel.

"They're determined to reach nuclear weapons. They want to get to a situation where [Iranian Supreme Leader Ayatollah] Khamenei asks [Ali Akbar] Salehi, [head of the Atomic Energy Association of Iran], can we develop nuclear weapons? And the answer must be yes we can. Not in English, in Persian," Gilad continued.Iran's strategy is based on the twin goals of getting rid of choking international sanctions, and keeping the option of breaking out to nuclear weapons within "a few months," he said."President Obama keeps saying, and I think he means it, we won't tolerate Iran with nuclear weapons. Iran says, okay... we will build the infrastructure to get to nuclear weapons, including missile capabilities, scientists, etc. It's like a runner who can't jump two meters, so he builds a 1.95 meter ramp, and later he can jump from it and get to two meters. This is the greatest danger. There is a possibility Iran will achieve this. It's a potential existential threat," Gilad said.

Can you imagine nuclear bombs in Iran's possession, and how this will destabilize the region?" If the July 20, July 2014 deadline for nuclear talks between the international community and Iran is delayed, this would be "excellent for the Iranians, as they want to stop the momentum of sanctions.

He noted that Iran has overseen the construction of Hezbollah's arsenal of 100,000 rockets, and spent billions of dollars to build up Hezbollah's firepower, which threatens all of Israel's territory."This is a military threat, not a terrorist one," he said, adding, Israel has "not been successful in preventing a buildup [of rockets] in Lebanon." Alleged Israeli action to prevent Hezbollah's armament program, as mentioned by foreign press reports, is the exception, Gilad said.Iran's Revolutionary Guards Corps has global command centers for terrorism that are located "everywhere," and planned to "slaughter dozen of Israelis over Passover in Thailand," the senior defense official said. These efforts are "mostly failing," he added.

"Can you imagine nuclear bombs in Iran's possession, and how this will destabilize the region?" If the July 20, 2014 deadline for nuclear talks between the international community and Iran is delayed, this would be "excellent for the Iranians, as they want to stop the momentum of sanctions," he added.Israel must maintain operational readiness, and never knows "when some threat will come," Gilad stated. He praised the country's defense industries for building up a shield against ballistic missile threats, and paid tribute to "unbelievable" intelligence achievements vis-a-vis Iran.Turning his attention to the Palestinians, Gilad said that should Palestinian Authority security forces take exclusive control of West Bank, there would be a "very high feasibility" of rockets and shelling raining down on greater Tel Aviv. ...

Source: The Jerusalem Post, 19 May 2014.

UN Nuclear Agency Says Iran Agrees to Address Bomb Probe Issues

A long-stalled UN probe into suspected atomic bomb research by Iran took a potentially important step forward when Tehran agreed to address questions about explosives and other activity that the West says could help it build nuclear weapons.The undertaking, hammered out in secretive talks in Tehran, could advance an investigation that the UNIAEA is trying to conduct, and may also help Iran and six world powers to negotiate a broader deal to end a dispute that has raised fears of a new Middle East war.But Western capitals, aware of past failures to get Iran to cooperate with the IAEA, are likely to remain sceptical until it has fully implemented the agreed steps and others to clear up allegations of illicit atomic work.

...The IAEA said on 21 May 2014 that Iran would provide information about two issues covered in the report by August. 25, including "with respect to the allegations related to the initiation of high explosives, including the conduct of large-scale high-explosives experimentation in Iran".

Possible Military Dimensions: Iran would also give the UN agency explanations "related to studies made and/or papers published in Iran in relation to

neutron transport and associated modelling and calculations and their alleged application to compressed materials".Computer calculations can be used to determine the yield of a nuclear explosion.The information Iran discloses will be seen by the IAEA as a test of its readiness to engage with the investigation into what the IAEA calls the possible military dimensions of its nuclear programme.

US officials say it is vital for Iran to address the IAEA's concerns if Washington and five other powers are to reach a long-term nuclear accord with Iran by a self-imposed deadline of July 20. But the Islamic state's repeated denials of any nuclear bomb aspirations will make it hard for it to admit to any wrongdoing in the past without losing face.The IAEA-Iran talks are separate from those between Tehran and the US, France, Germany, Britain, China and Russia. But they are complementary as both focus on fears that Iran may covertly be using a nuclear power and research programme as a cover for developing a weapons capability.After years of increasing hostility with the West, 2013's election of the pragmatist Hassan Rouhani as Iranian president paved the way for an interim accord in November to curb Iran's nuclear programme in exchange for some easing of sanctions, designed to buy time for talks on a final accord.

Progress Is Slow: But the latest round of negotiations between Iran and the six powers - which want Tehran to significantly scale back its nuclear work – failed to make much headway, raising doubts over the prospects for a breakthrough by late July 2014."The fact that there is progress in the Iran-IAEA talks is testament to Tehran's understanding of the critical importance of resolving the PMD issues for ending the nuclear crisis," said Ali Vaez, of the International Crisis Group think tank.But he said the slow pace of progress indicated that the talks with the big powers were setting the tone.A Western diplomat who is not from one of the six powers negotiating with Iran said he had expected more."The Iranians have said they want to get through these issues (the IAEA's probe) quickly. They will really have to pick up the pace or it will drag out a long time," the envoy said.

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The two PMD issues that Iran has now agreed to address were among a package of five practical measures to be implemented by late August.The IAEA said "good progress" had been made on seven other measures that Iran had been due to implement by May 15 2014.But it did not spell out whether it was fully satisfied with the most sensitive of those steps – an Iranian explanation for having detonators that can be used, among other things, to set off a nuclear explosive device.Iran says it developed the detonators for civilian applications.

Source: Reuters, 21 May 2014.

US Won't Allow Iran to Develop Nuclear Weapons, Hagel Tells Netanyahu

US Defense Secretary Chuck Hagel issued the threat on 16 May 2014 during his talks with Israeli PM Benjamin Netanyahu in al-Quds."I want to assure you of the US' commitment to ensuring Iran does not get a nuclear weapon – and that America will do what we must to live up to that commitment," Hagel stated.Netanyahu, standing beside Hagel, accused Tehran of "trying to pull the wool over the eyes of the international community."He alleged that Iran continues "to develop ICBMs and to continue to violate its commitments of Security Council stipulations on forbidding it to develop certain parts of its nuclear program.""They continue to do that and I think that requires a very clear and firm policy on the part of world powers," Netanyahu said.

Iran strongly rejects the allegations that it is seeking to develop nuclear weapons. Tehran says it needs the nuclear program for peaceful purposes, including generating electricity and producing radio-isotopes for medical purposes.The Islamic Republic also says its missile program is defensive in nature and poses no threats to other countries.The Israeli regime is widely believed to be the sole possessor of a nuclear arsenal in the Middle East with more than 200 undeclared nuclear warheads. Tel Aviv has

rejected global calls to join the nuclear NPT and does not allow international inspectors to observe its controversial nuclear program.

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The illegal US-engineered sanctions on Iran have been imposed based on the unfounded accusation that Tehran is pursuing non-civilian objectives in its nuclear energy program.Iran rejects the allegation, arguing that as a committed signatory to the NPT and a member of the IAEA, it has the right to use nuclear technology for peaceful purposes.In addition, the IAEA has conducted numerous inspections of Iran's nuclear facilities but has never found any evidence showing that Iran's civilian nuclear program has been diverted to nuclear weapons production.In November 2013, Iran and the five permanent members of the UN Security Council – Britain, China, France, Russia, and the US– plus Germany signed an interim nuclear agreement in Geneva, Switzerland.

Israeli PM Benjamin Netanyahu, in Japan promoting bilateral ties, drew a parallel between Israel and Japan's challenges with nuclear proliferation, warning on 15 May 2014 that Iran was supplying North Korea with nuclear technology.

Under the Geneva agreement, the Sextet agreed to provide Iran with some sanctions relief in exchange for Tehran agreeing to limit certain aspects of its nuclear activities during a six-month period.The agreement came into force on January 20, 2014. Iran and the major powers have set a July 20, 2014 deadline to clinch a long-term nuclear deal.In the third week of May, Iran and the P5+1 group continued their talks in the Austrian capital Vienna in order to reach a final agreement. …

Source: Press TV, 16 May 2014.

Netanyahu in Japan: Iran Sharing Nuclear Technology with N Korea

Israeli PM Benjamin Netanyahu, in Japan promoting bilateral ties, drew a parallel between Israel and Japan's challenges with nuclear proliferation, warning on 15 May 2014 that Iran was supplying North Korea with nuclear technology.The online news site *Japan Today* reports:

Netanyahu, who is in Japan for talks with PM Shinzo Abe and Foreign Minister Fumio Kishida, said Iran "would share whatever technology it acquired with North Korea," the Mainichi Shimbun reported in a front-page piece. Asked if Pyongyang is receiving technologies linked to nuclear and missile development from Iran, Netanyahu said: "Yes, that's exactly the case."

Japan Today notes that though Japan has been at the forefront of maintaining North Korea's diplomatic isolation, it continues to maintain diplomatic relations with Iran. In 2013 a nuclear bomb tested by North Korea was suspected to have been developed with the help of Iranian "enrichment know-how."Earlier in the second week of May 2014, The JapanTimes reported on the areas of cooperation that Israel and Japan hope to strengthen.In a joint statement the two leaders signed after more than an hour of talking at the PM's office, they agreed to hold talks between their national security organs in Israel, and to increase exchanges of defense authorities.

They also agreed to promote cooperation in cybersecurity, which Israel excels in. In recent months, Israel has been developing stronger ties with Asian countries, as trade with India is booming and Israel hosted South Korean entrepreneurs. More generally, it was reported recently that Asia is likely to surpass the US as Israel's second biggest trading partner after the European Union in 2014.

Source: http://www.the tower.org/, 15 May 2014.

The Republic of the Marshall Islands filed unprecedented lawsuits with the International Court of Justice in The Hague, Netherlands, to hold the world's nine nuclear-armed states –the US, the UK, Russia, China, France, Israel, India, Pakistan and North Korea –accountable for flagrant violations of international law with respect to their nuclear disarmament obligations.

NUCLEAR DISARMAMENT

USA

David and Goliath: The Marshall Islands Takes on Nuclear States

The Republic of the Marshall Islands filed unprecedented lawsuits with the International Court of Justice in The Hague, Netherlands, to hold the world's nine nuclear-armed states –the

US, the UK, Russia, China, France, Israel, India, Pakistan and North Korea –accountable for flagrant violations of international law with respect to their nuclear disarmament obligations.Some might wonder why would a tiny state somewhere in the middle of the Pacific between Hawaii and Guam decide to target the nine most powerful states in the world? One reason is that the Republic of the Marshall Islands knows firsthand the horrors and consequences of living in a world with nuclear weapons: between 1946 and 1958, the US used it as a testing ground for its nuclear weapons.

During this 12-year period, 67 nuclear tests were conducted on Bikini and Enewetak atolls and adjacent regions. The most significant single contaminating event was the Castle Bravo test, conducted on March 1, 1954 at Bikini Atoll. Prior to the testing, the inhabitants of Bikini and Enewetak were sent to Rongerik Atoll. When they left their homes, they would be able to return after a short time.But the designers of Castle Bravo made a grave error in calculating the yield of the device. They expected the yield to be roughly 5 to 6 MT, but it produced an explosive yield of 15 megatons, making it 1,000 times more powerful than the US nuclear weapons used on Hiroshima and Nagasaki in 1945.

The case against the US alleges that "the Respondent has been actively upgrading, modernizing and improving its nuclear arsenal."According to the Nuclear Age Peace Foundation, a US-based civil society organization, the US plans to spend an estimated $1 trillion on nuclear weapons in the next three decades, and it currently possesses nearly half of the world's 17,300 warheads.

Not only did the test leave Bikini and Enewak uninhabitable, it also led to critical fallout in the Rongelap, Rongerik, Alinginea and Utirik atolls.Evacuations organized by the US were too slow to limit the lethal doses of radiation that inhabitants were submitted to. Additionally, Rongerik– where the Bikinians had been sent – had inadequate supplies of water and food, as the administration had only sent several weeks' worth of food. As a result, the Bikinians began to suffer from starvation and fish poisoning due to the lack of edible fish in the lagoon. Within two months after their arrival, they begged US officials to move them back to Bikini.

It was not possible for them to return home. Realizing this, they choose to live on Kili Island, a small island one-sixth the size of their original home. In the early 1970s, US government scientists declared Bikini safe for resettlement, and some residents were allowed to return. They were removed again in 1978 after ingesting high levels of radiation from eating foods grown on the former nuclear test site.

Bikini islanders and their descendants have lived in exile ever since. The radioactive fallout continues to leave some of the islands uninhabitable. An estimated 665 inhabitants of the Marshall Islands were overexposed to radiation. The inhabitants of contaminated atolls have experienced numerous health problems, including birth defects, and the Marshall Islands still has one of the highest cancer rates in the Pacific.... The Marshall Islands is not seeking compensation for the damages done by the American testing, though. Its goal is much wider and more ambitious than that. Instead, it aims to obtain from an international court a clear message that tells the world's nine nuclear nations in no uncertain terms that they need to fully meet their international nuclear disarmament obligations.In other words, this issue extends well beyond the estimated 70,000 inhabitants of the Marshall Islands.

... The Marshall Islands case draws attention to the fact that rather than scrapping warheads, the countries named are currently in the process of modernizing their nuclear weapons, which it considers as a clear violation of the Nuclear NPT. The case against the US alleges that "the Respondent has been actively upgrading, modernizing and improving its nuclear arsenal."According to the Nuclear Age Peace Foundation, a US-based civil society organization, the US plans to spend an estimated $1 trillion on nuclear weapons in the next three decades, and it currently possesses nearly half of the world's 17,300 warheads....

Tough Legal Obstacles: Some world leaders, international NGOs, well-known experts and Nobel Peace Prize laureates – including former President of Costa Rica Oscar Arias, Iranian human rights lawyer ShirinEbadi, Argentinian human rights activist Adolfo Perez Esquivel – have declared strong support for the lawsuits and denounced nuclear weapons.Despite this support, the lawsuits face a number of tough legal obstacles. First, four of the nuclear powers being sued by the Marshall Islands are not signatories to the Nuclear NPT. India,

Pakistan, North Korea and Israel – which has never publicly admitted to having nuclear weapons – all acquired their nuclear weapons well after the treaty was created.

In addition to showing the treaty's relative ineffectiveness, this also prompts the question about to what extent these countries can be bound by the provisions of a treaty they have not signed. The Marshall Islands and the international legal team – which is working pro bono – believe the obligations enshrined in Article VI of the treaty "are not merely treaty obligations; they also exist separately under customary international law," according to the lawsuits. The four countries could, therefore, be linked by international customary law, which is binding for all states, regardless of whether they've signed a treaty.

Of the nine states being sued in the ICJ, only three – the UK, India and Pakistan – accept its jurisdiction. The Marshall Islands is calling on the other six states to accept the court's jurisdiction in this particular case – something that may prove difficult.So far, the US government's only reaction has been a State Department statement saying that it was examining the lawsuits filed by the Marshall Islands.

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The lawsuits are unlikely to end in any country being compelled to disarm, but they will at least expose the hypocrisy of big nuclear powers claiming to be committed to multilateral disarmament initiatives. These countries like to invoke international law to argue against other countries like Iran having access to nuclear weapons – which is prohibited by the Nuclear NPT– or even nuclear civilian power – which, under safeguards, is not prohibited – but they have a convenient and systematic tendency to forget about the other part of the deal laid out in the framework of the treaty: their own disarmament.

Source: http:// www.Mint Press News.com/,21 May 2014.

NUCLEAR SAFETY

Areva to Provide Exclusive Nuclear Safety System Monitoring Solution

Areva will be the exclusive supplier of NGAT technology that monitors and regulates accumulated air and gas in certain nuclear plant safety systems.The technology, developed by US-based Nuccorp, eliminates the need for periodic venting andultrasonictesting inspections.If allowed to accumulate, air and gas can compromisetheproper operation of the emergency core cooling system, Areva said.The NGAT continuously monitors the accumulation of of air and gas, while it allows for quick ventilation of the affected system to ensure the plant's continued safe operation.

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According to Areva, the device can be easily established at existing plants and has already been successfully demonstrated in operation.Areva installed base business unit senior vice president George Beam said, "This agreement is yet another example of AREVA's support of the US nuclear fleet's mission to generate safe and reliable electricity."We are pleased to be the exclusive channel for this innovative technology, as it is the only solution that allows customers to completely verify, measure and eliminate gas in station systems."

Source: Energy Business Review, 02 May 2014.

NUCLEAR WASTE MANAGEMENT

CANADA

What should be done with Nuclear Waste?

Ontario power generation proposes to collect low and intermediate nuclear wastes from the province's 20 nuclear power plants for the next 30 years and store it in a layer of limestone 2,230 feet below ground, less than three-quarters of a mile from Lake Huron. After three decades or so, OPG would close off the shafts to its so-called deep geologic repository, abandoning the waste.

Ontario power generation proposes to collect low and intermediate nuclear wastes from the province's 20 nuclear power plants for the next 30 years and store it in a layer of limestone 2,230 feet below ground, less than three-quarters of a mile from Lake Huron. After three decades or so, OPG would close off the shafts to its so-called deep geologic repository, abandoning the waste.

Some of the radioactive waste will remain toxic for more than 100,000 years. Plutonium 239, which affects the lungs, bones and ovaries of humans, will remain radioactive for 240,000 years. That's longer than homo-sapiens have been on earth.

Because radiation is so dangerous to human health – as well as the health of the biological world generally – the repository would have to be kept safe from geological upheavals, including earthquakes, water incursion that could threaten the containment vessels, and the potential intrusions of humans through wars, terrorism and brute curiosity a hundred generations into the future.

According to the national research council's 2005 biological effects of ionizing radiation vii report – "health risks from low levels of ionizing radiation" – "there is no compelling evidence to indicate a dose threshold (to ionizing radiation) below which the risk of tumor induction is zero." furthermore, the relationship between amount of exposure and cancer is linear – as exposure increases, the cancer rate increases."A single molecule of plutonium could technically initiate lung cancer," according to KevinKamps, a nuclear waste specialist with beyond nuclear.

Thompson pushed for "robust" security for nuclear waste, that is, storage in structures strong enough to withstand attack from a terrorist or other malicious opponent.Spent fuel should be secured in three ways, Thompson said. First, it should be kept passively safe. The waste should remain safe without relying on electricity, cooling water or a human crew, any of which may be knocked out, as happened at Fukushima in Japan in the wake of the tsunami in 2011.

Steam generators from Ontario's nuclear plants will be a key component of intermediate waste proposed for the repository. According to the Canadian nuclear safety commission, waste products inside steam generators typically include five different types of plutonium, said Dr. GordonEdwards, president of the Canadian coalition for nuclear responsibility, speaking at St. Clair county community college on April 15.

"That's the largest component inside the steam generators," Edwards said. "Plutonium is an alpha emitter. It doesn't give off gamma radiation. You can't detect it very easily with a Geiger counter. Plutonium 239, which is the most common isotope, has a half life of 24,000 years. Alpha radiation is the main hazard for civilians. Outside the body, it's harmless because the alpha radiation will not even penetrate a sheet of paper. Once it gets inside the body, it's 20 times more damaging than beta or gamma radiation.

... In the wake of 9/11 attacks on the world trade centre and pentagon, a variant of the concept was recommended by GordonThompson of the institute for resource and security studies in Cambridge, mass. Thompson pushed for "robust" security for nuclear waste, that is, storage in structures strong enough to withstand attack from a terrorist or other malicious opponent.Spent fuel should be secured in three ways, Thompson said. First, it should be kept passively safe. The waste should remain safe without relying on electricity, cooling water or a human crew, any of which may be knocked out, as happened at Fukushima in Japan in the wake of the tsunami in 2011.

Second, the facility where the waste is stored should be hardened to resist an attack by anti-tank missiles and crashed commercial jets. At ground level, this would mean layers of concrete, steel, gravel and other substances around and above the spent fuel.

Third, the waste should be decentralized, that is, stored on the sites of nuclear plants, not at a centralized facility, which would be

vulnerable to a single attack – and dispersed around each reactor site if possible.

Warning future generationsone of the problems OPG would face if the repository is approved is how to communicate the potential dangers of a sealed, abandoned site to humans thousands of years in the future. What languages will they speak? Will human curiosity overwhelm caution even if the danger can be communicated?Edwards recommended what he called "rolling stewardship.""My organization is advocating a policy of rolling stewardship, a concept introduced in 1995 by the US academy of sciences," said Edwards. "Instead of minimizing the dangers of this waste, the idea is we admit that we have to pass this burden onto the next generation with full instructions. They have to be prepared to pass it onto the next generation, etc., until which time we find an actual solution, somehow rendering this stuff harmless. We may never know how to do it. Every 20 years, there could be a ceremony, a changing of the guard. It's not based on forgetting, on amnesia. It's based on the persistence of memory. We don't have to communicate with some distant civilization that speaks some unknown language. We just have to speak to the next generation." …

Source:http://www. The Voice News .com/,22 May 2014.

NORWAY

Norway Signs Deal on Nuclear Waste Disposal System in Northern Russia

Russia and Norway have signed contracts worth 100 million roubles ($2.9 million) to develop a system to deal with radioactive waste at the Andreeva Bay storage facility near Murmansk, the Russian state nuclear corporation Rosatom said on 20 May 2014. The agreements for the further development of infrastructure to deal with spent nuclear fuel were signed in the Norwegian city of Vadso between the leadership of Finnmark and SevRao, a branch of Rosatom'sRosRao. "Today the environmental situation has been significantly improved and sources of environmental contamination have been eliminated and acceptable conditions were created for dealing with the spent fuel and radioactive waste," Rosatom said.The facility, which was set up more than 50 years ago, was taken out of operation after an accident in 1982, when water was found to be leaking from the storage pool. The works at the facility resumed in late 1990s due to Norway's financial support. International cooperation allowed to considerably speed up works to normalize the radiation environment at the site.

Russia and Norway have signed contracts worth 100 million roubles ($2.9 million) to develop a system to deal with radioactive waste at the Andreeva Bay storage facility near Murmansk, the Russian state nuclear corporation Rosatom said on 20 May 2014.

Source: RIA Novosti, 20 May 2014.

USA

Hundreds of Nuclear-Waste Drums May Face Danger of Bursting

New Mexico is urgently pushing to plug subterranean halls with over 300 nuclear-waste drums potentially at risk of bursting, theAssociated Press reports.The Energy Department and a contract firm face a May 30 deadline to explain how they will irreversibly close two chambers at the Waste Isolation Pilot Plant containing the 368 barrels, according to a 20 May order from New Mexico Environment Secretary Ryan Flynn. One of the two storage halls was filled to capacity and awaiting final closure in February 2014, when radioactive contaminants spread through the facility's underground corridors and forced normal operations at the site to cease.

The targeted barrels – as well as dozens more held above ground – include an absorbent cat-litter tied to a rupture in one container inside the facility near Carlsbad.Environment personnel said over 100 similarly packed barrels are at a holding location in Andrews, Texas, and 57 more of the problematic waste containers are in storage at Los Alamos National Laboratory in New Mexico.The Texas facility's private operator on 20 May 2014 said the containers in its custody were under continuous video surveillance, AP reported separately. …

Source: NTI, 21 May 2014.

Organic Cat Litter Chief Suspect in Nuclear Waste Accident

In February, a 55-gallon drum of radioactive waste burst open inside America's only nuclear dump, the Waste Isolation Pilot Plant in New Mexico.Now investigators believe the cause may have been a pet store purchase gone bad."It was the wrong kitty litter," says James Conca, a geochemist in Richland, Wash., who has spent decades in the nuclear waste business.It turns out there's more to cat litter than you think. It can soak up urine, but it's just as good at absorbingradioactive material."It actually works well both in the home litter box as well as the radiochemistry laboratory," says Conca, who is not directly involved in the current investigation.

Cat litter has been used for years to dispose of nuclear waste. Dump it into a drum of sludge and itwillstabilize volatile radioactive chemicals. The litter prevents it fromreactingwiththe environment.And this is what contractorsat LosAlamos National Laboratorywere doing as they packed Cold War-era waste for shipment to the dump. But at some point, they decided to make a switch, from clay to organic."Now that might sound nice, you're trying to be green and all that, but the organic kitty litters are organic," says Conca. Organic litter is made of plant material, which is full of chemical compounds that can react with the nuclear waste.

Cat litter has been used for years to dispose of nuclear waste. Dump it into a drum of sludge and it will stabilize volatile radioactive chemicals. The litter prevents it from reacting with the environment.And this is what contractors at Los Alamos National Laboratorywere doing as they packed Cold War-era waste for shipment to the dump.

"They actually are just fuel, and so they're the wrong thing to add," he says. Investigators now believe the litter and waste caused the drum to slowly heat up "sort of like a slow burn charcoal briquette instead of an actual bomb."After it arrived at the dump, it burst.

They actually are just fuel, and so they're the wrong thing to add Investigators now believe the litter and waste caused the drum to slowly heat up "sort of like a slow burn charcoal briquette instead of an actual bomb."After it arrived at the dump, it burst.

"How come nobody caught this and raised a red flag?" asks Ryan Flynn, New Mexico's secretary of the environment. Flynn says that the cause of the accident still isn't 100 percent clear. Scientists at Los Alamos have yet to find the exact blend of cat litter and nuclear waste that can spark a reaction.But he says it is clear that the wrong material went into some of the drums. He wants to know why the Department of Energy, which handles the waste, let this happen."I'm frustrated," he says. Flynn says there are more than 500 drums packed with the wrong litter. The majority are relatively safely underground in the dump, but dozens are still at Los Alamos and another site in West Texas. None of these drums have burst so far, but the lab and the company handling the Texas waste have put them in heavy containersforadded protection.Flynn says federal authorities need to come up with a long-term solution and prevent future mix-ups."Ultimately [the waste is] the responsibility of the DoE," he says. "It's also now their responsibility to clean it up and fix it."

Source: NPR, 23 May 2014.

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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