



NUCLEAR SECURITY



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

Vol 08, No. 16, 15 June 2014

OPINION – Sheel Kant Sharma

The Second Nuclear Age in the Asia Pacific

President Obama's West Point speech in 2014 reflected a qualified fatigue with internationalist causes. The recent Chinese comment on North Korean threats about an impending test had an interesting term in cautioning its difficult but important neighbour: that there is no justification for a new nuclear test and that North Korea should not do it. It implies some kind of acceptance of the status quo. Chinese Foreign Minister Wang Ye during his Seoul visit continued to press for all in the six party talks to persevere peacefully towards a denuclearised peninsula. Visits and parleys among key members of the six nations, with a focus on North Korea, including Japan and North Korea, indicate chances of a reactivation of the process. Meanwhile, Russian anger against US and the G7 is being cited as reason for Moscow's new look at expanding relations with Pyongyang. Russian support has expanded over the past one year and particularly since the onset of the crisis in Ukraine.

Russia has waved huge loans (US\$10 billion) owed by North Korea since the Soviet times and has offered US\$1 billion for a trans-Siberian railway project through North to South Korea, received North Korean president at the Sochi winter Olympics and sent a ministerial delegation on a visit to Pyongyang to sign up on important economic and trade cooperation. This refashioning of ties between the Cold War allies might add heft to Pyongyang's hard stance for resumption of the six party talks without

This refashioning of ties between the Cold War allies might add heft to Pyongyang's hard stance for resumption of the six party talks without preconditions. The G7 brandishing to Putin more sanctions for Russian actions in Ukraine may have the effect of diminishing Russian interest in tighter sanctions on North Korea.

CONTENTS

- ☞ OPINION
- ☞ STATEMENT
- ☞ NUCLEAR STRATEGY
- ☞ BALLISTIC MISSILE DEFENCE
- ☞ NUCLEAR ENERGY
- ☞ NUCLEAR COOPERATION
- ☞ NUCLEAR SAFETY
- ☞ NUCLEAR WASTE MANAGEMENT

preconditions. The G7 brandishing to Putin more sanctions for Russian actions in Ukraine may have the effect of diminishing Russian interest in tighter sanctions on North Korea. As for Japan, a distinct possibility of Prime Minister Abe making a visit to North Korea is being seen in the announcement in the Diet by his foreign minister about an upcoming official visit. Some headway has been made in a meeting in Sweden in the direction of the return of the Japanese kidnapped in North Korea and Japan's provision in turn for food supplies. This may also be helpful to resume the six party talks.

The growing tensions in Southeast and East Asia between China on one side and Japan, Vietnam and the Philippines on the other are giving rise to

new ways to deal with China, but possibly without disturbing the existing non-weapon status of the highly developed Japanese and South Korean nuclear enterprises. The so called break out fears, much talked about in the context of Iran, do not come to fore because of the impeccable record of Seoul and Tokyo with the IAEA. However, China has begun to raise questions about the high plutonium holdings of Japan. The reason advanced by Japan, namely, plutonium to meet fuel requirements for its breeder programme, may be less credible in the wake of Fukushima-induced anti-nuclear sentiment. As for Seoul, it appears inclined to try non-nuclear options like building its own ground-based mid-course missile defence to cope with nuclear threats from the North, instead of contemplating any deterrent route.

Within US too there are the long-held views being reinforced by profound thinking that foresees far more problems for strategic stability in case new allies develop their own deterrent. Hence the reinforcing of US rebalancing and commitment to the Asia-Pacific allies as witnessed in the annual Shangri-La dialogue in Singapore in end-May 2014. US Defense Secretary Hagel was so candid in voicing concern about China's threatening actions in the South China Sea that the Chinese reacted equally forcefully and virtually told Hagel to lay off.

These are the facets of diverse approaches for the management of the second nuclear age in the Asia-Pacific and do not provide much reassurance. The latest Pentagon reports show that China is underreporting its defence expenditure by 20 per cent and suggest that the correct annual figure should be US\$145 billion, almost four times that of India and ahead of Japan. China's air force is said to be growing at an alarming rate, including with development of advanced drones and testing of hypersonic missiles, which when combined with earlier stories about its SSBNs and improvements in its strategic forces, send unmistakable messages about where China is headed. The recent US Justice Department's charges against Chinese generals about cyber attacks against US businesses and China's strong reaction and counter-charges against the US

demonstrate an escalation of the Cold War-like rhetoric in Asia.

Putin's closeness to China as reflected in the conclusion of a US\$400 billion, thirty year, gas deal and a host of others including about defence procurements as well as Russian-Chinese joint veto in the UN Security Council are indications of emerging new configurations in geopolitics. These will call in to question what was suggested even as recently as 2012 by the Yale Professor Paul Bracken about an abiding common interest of the existing great powers in managing the second nuclear age (i.e. the age when new proliferating States emerge). If anything, China and Russia appear to be set to devising ways to mount a concerted challenge to what the Chinese openly call US hegemony.

This is the short take from the dynamic that is evolving in Asia. The news story about Russian arms to Pakistan in this setting should raise Delhi's heckles – the new fangled diplomacy of Kerry and Hagel to woo Pakistan (propensity of US think-tanks to reward Pakistan with a nuclear deal), Russia's indulgence, and China's all-weather friendship firmly backing its

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trusted ally compounds the strategic scenario for India. A perceptive remark by a former Indian Ambassador to Russia is poignant to the US-India situation: "The US has been looking to cooperate with an India that is strong enough to be a balancer of China but (should not be strong) enough to cause concern to Pakistan." Talking of paradoxes, the US is not alone. China's position for continued peaceful engagement and diplomacy about North Korea, and its consistent reluctance to

put Pakistan or its terror outfits on the spot is in contrast with the increasing severity with which it reacts to Japan and bristles over outsiders counsel on maritime disputes with Japan and in the South China Sea.

China has generally refused dialogue with India as a nuclear weapon state invoking what it called the international mainstream (e.g. NPT) whereas on Japan and South China Sea it rejects anything that differs from its own national hard line regardless of the weight of international mainstream, e.g., UN

Convention on the Law of the Sea, freedom of navigation and security of the sea lanes.

In short, rules are less and less likely to govern the evolving uncertainties in Asia except the inherent strength and might of nations, or a concert thereof, backing whoever takes a stand. This is the setting for the first high level Sino-Indian diplomatic engagement.... As a special envoy of Chinese president Xi, Foreign Minister Wang Ye is set to meet the new government in Delhi with a message comprising all the right and reassuring points.

Source: <http://www.ipcs.org/>, 09 June 2014.

OPINION – Rizwan Asghar

The Future of Nuclear Russia

Despite President Putin's willingness to work towards achieving the idea of a nuclear-free world, 'nuclear zero' proposals have generally been perceived in Moscow as part of a thinly veiled plan to disarm Russia

Nuclear weapons have always occupied a central strategic place in Soviet and Russian national security doctrines. Starting in the early 1950s, the Soviet leadership put a heavy premium on the role of strategic weapons systems as a means of achieving strategic parity with its main rival, the US. After the initial efforts for global nuclear disarmament failed, the Soviet Union invested significant resources into strengthening a 'triad' of nuclear weapons delivery systems, consisting of traditional strategic bombers, land-based ICBMs, and strategic submarines with SLBMs. Although the freezing climate of mutual rivalry thawed considerably after the collapse of the Soviet Union, the main thrust of Russia's nuclear strategy remained unchanged. While the US resorted to reducing the role of nuclear weapons in its national security strategy, Russian leaders sought to expand the role of nuclear weapons in their future military policy.

In 1993, the Russian government of Boris Yeltsin unveiled new changes in their military posture,

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issuing the famous document entitled, Principle Guidance on the Military Doctrine of the Russian Federation (PGMD). The document for the very first time made it clear that Russia reserves "the right of first use of nuclear weapons" even in case of a conventional war. Many experts attributed this decision to give an enhanced role to nuclear weapons in the foreign policy agenda to the gradual decay of Russian conventional military power during the last few years of the Cold War.

Although the Russian Federation still possessed the world's largest nuclear weapons stockpile, two-thirds of its nuclear triad had come to the end of its service life. When Vladimir Putin, Yeltsin's hand picked successor, took over as president, Russia did not even have enough resources to maintain its then existing strategic forces of ten thousand nuclear warheads on delivery vehicles and twenty thousand tactical or sub-strategic nuclear weapons.

The 2000 national security doctrine of Russia elaborated in detail the conditions under which Russia may resort to the limited use of nuclear weapons. It stated: "The Russian Federation reserves the right to use nuclear weapons in response to the use of nuclear or other types of weapons of mass destruction against it and (or) its allies, as well as in response to a large-scale aggression involving the use of conventional weapons in situations critical to the national security of the Russian Federation." President Putin

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ordered large-scale reforms in the military industrial complex, offering full support to the modernisation of the country's missiles programme and the strategic nuclear forces.

But the Russo-Georgian War of 2008 again brought the realisation that Russian conventional forces remain unable to engage in a prolonged conflict against another major military power due to the lack of modern military hardware. It was against this backdrop that in 2009, Lieutenant General Andrey Shvaychenko, then Commander of the Russian Strategic Missile Forces, signalled continuing the policy of first use of nuclear weapons. Russian

policymakers have generally regarded nuclear weapons as a guarantee of their security and independence in a “hostile environment full of potential or actual enemies”. According to the most recent estimates, Russia’s nuclear security establishment maintains a stockpile of more than 4,300 nuclear weapons. At least 1,600 strategic weapons are deployed at strategic bomber bases and on missiles. In addition to another 2,000 tactical warheads, approximately 700 strategic warheads are held in storage. Such a vast arsenal of nuclear weapons continues to raise concerns amongst the international community. Last year in December 2013, Russian Vice-Prime Minister Dmitry Rogozin warned that Russia will use nuclear weapons first “in certain situations to defend its territory and state interests”.

Despite the lapse of more than two decades since the end of the fierce ideological struggle between the US and the former Soviet Union, Russia’s present leadership is still obsessed with reviving its overarching influence in the former Soviet republics. In order to counter the emerging new threats, Moscow launched a new nuclear modernisation programme in 2013 that focuses on the construction of ballistic missile submarines, development of ICBMs and new strategic bombers.

The ruling political elites in Moscow consider the Obama administration’s complete nuclear disarmament policy as inimical to its core interests. Despite President Putin’s willingness to work towards achieving the idea of a nuclear free world, ‘nuclear zero’ proposals have generally been perceived in Moscow as part of a thinly veiled plan to disarm Russia by neutralising its nuclear potential. The widespread opinion in Russian policymaking circles is that they will not be able to successfully combat the US and its allies or even China in conventional warfare, and may eventually be unable to follow an independent policy if left without nuclear weapons.

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If the Obama administration really wants to make progress towards the lofty goal of enhanced global security and nuclear abolition, it would have to convince the Russians of the rightness of reducing their reliance on nuclear weapons. Taking Russia’s nuclear posture seriously and engaging with them constructively may lessen their concerns and make them agree to a more practical and cooperative nuclear disarmament agenda.

On the other hand, there is a lot of euphoria among liberal circles in Russia regarding the Obama administration’s stated goals to stop the development of new nuclear weapons and work with the Russian leadership to seek ‘dramatic reductions’ in US and Russian stockpiles of nuclear weapons and material. But there remain some major political obstacles hampering practical progress towards ensuring significant reductions in nuclear stockpiles, the most prominent being the lack of political will and nurturing of imaginary fears by the Russian government. If the Obama administration really wants to make progress towards the lofty goal of enhanced global security and nuclear abolition, it would have to convince the Russians of the rightness of reducing their reliance on nuclear weapons. Taking Russia’s nuclear posture seriously and engaging with them constructively may lessen their concerns and make them agree to a more practical and cooperative nuclear disarmament agenda. How the US tackles this challenge will inevitably determine the future of the global nuclear disarmament agenda.

Source: <http://www.dailytimes.com.pk/>, 10 June 2014.

OPINION – Mark Perry

Alternative Energy No Substitute For Clean Nuclear

Wind and solar power, once viewed as our best hope for abundant supplies of zero-carbon energy, are distracting us from what might be the real solution: nuclear power. The time has come for states to reconsider their mandates requiring that a share of electricity come from renewable energy sources, and instead consider a more direct and sensible policy in support of nuclear power. Currently 30 states have renewable power standards designed to promote the use of wind and solar power, which are carbon-free, non-polluting sources of energy. Among the most ambitious, California’s standard mandates

that the state generate one-third of its electricity from renewables by 2020.

But the hype over wind and solar power as clean and renewable is undermined by their fatal flaw — intermittency. Realistically, you can't produce wind and solar power when people need it. Electricity from both is only available when nature cooperates. Power production fluctuates wildly, depending on the weather. The amount of energy that the average wind turbine produces annually is equal to just 20% to 30% of the amount of energy that would result from year-round operation at full capacity, and there is no proven storage technology that would make wind an around-the-clock base-load provider.

Marginal Return: The capacity factor for solar power runs closer to 20%. Together, wind and solar power contribute only marginally to U.S. energy supplies, accounting for just over 4% of US electricity production in 2013, despite billions of dollars in taxpayer subsidies.

And they cannot come close to replacing conventional sources of base-load power generation. Most renewables collect extremely diluted energy, requiring large areas of land. Jesse Ausubel of Rockefeller University has estimated that a wind farm equivalent in output and capacity to a 1,000-megawatt nuclear plant would occupy 298 square miles. The solar photovoltaic equivalent would occupy 58 square miles. And wind turbines cause visual and noise pollution and kill huge numbers of birds. Furthermore, as intermittent electricity sources, wind and solar power must be backed up by standby generation that can be dispatched on demand usually from natural gas.

Emissions Washout: To use more wind and solar increases the need for backup power, and the associated emissions that come with it will largely cancel out any emissions savings from renewables.

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To use more wind and solar increases the need for backup power, and the associated emissions that come with it will largely cancel out any emissions savings from renewables. In short, wind and solar production won't make much of a difference in reducing emissions, and meaningful levels of production have, at best, a negligible positive impact. By contrast, nuclear power — which is not eligible for mandatory use under the renewable power standards — supplies nearly 20% of the nation's electricity.

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The clean little secret of recent years is that nuclear power has performed very well. Nuclear power is our zero-emission energy workhorse, providing 64% of the nation's zero-carbon energy. Over the last decade, the US fleet of around 100 nuclear plants has generated electricity about 90% of the time. Thus, a 1,000-megawatt nuclear plant produces three times more electricity than 1,000 megawatts of wind turbines and four times more electricity than solar panels.

Policymakers and politicians have routinely ignored the impact that the mandate for renewable power has had in more than half the country where electricity markets have been deregulated. And the result has been a catastrophe for nuclear power, with safe and efficient reactors either being shut down prematurely or at risk of being shuttered for no good reason.

In states where power is deregulated, the wholesale price of electricity is set by auction, and when there is an oversupply, the price naturally drops. When that happens, nuclear power plants operate at a loss, and often end up having to pay to generate electricity. The market distortion caused by negative prices makes it difficult for nuclear power plants to recover their costs and discourages investment in new generation.

As a result, 30% of the U.S. nuclear fleet might be forced to close within several years, and it's not because of their production costs, which are competitive with natural gas, but because of the state energy mandates. The Energy Information

Administration forecasts a 28% increase in US power demand through 2040. Those who claim that solar and wind can meet all of our electricity needs by then are engaged in fantasy. Renewables cannot get us even halfway there.

In fact, the renewable sources added in recent years have made the electric system more fragile, because of their intermittency problems. We would be remiss if we did not consider the impact that the post-Fukushima shutdown of nuclear plants in Germany is having on electricity prices, which have jumped 50%.

Today electricity prices in Germany are nearly three times the US average. The risk is the US could go down the same road. What could turn this situation around? The answers are clear. First, states have to recognize that wind and solar power are mature industries that can now compete on their own without the mandates. Second, we have to give nuclear power an opportunity to demonstrate its economic and environmental value. If nuclear power fails, the loss of fuel diversity will increase the price of power production.

In the increasingly competitive global economy, the availability of reliable and low-cost power is becoming more important. The fact is, during the nation's recent economic recovery, the gain in manufacturing jobs was greatest in the 15 states with the lowest electricity prices, while the 15 states with the highest electricity prices lost manufacturing jobs. The evidence is clear low-cost power translates into jobs. And fuel diversity matters. Overlooking nuclear power as part of our country's energy diversity would be a big mistake.

Source: Perry is a scholar at the American Enterprise Institute in Washington. <http://news.investors.com/>, 09 June 2014.

OPINION – Shahin Abbasov

Azerbaijan's Plans for Nuclear Power Raise Concerns

Rather than nuclear power, building up alternative energy resources well suited to Azerbaijan's climate and geography – hydropower, solar power or wind power – would be preferable, she underlined.

Jafarly agreed, noting the contradiction with the Azerbaijani government's long-term demand that neighboring Armenia close its 38-year-old Metsamor plant, currently the only nuclear facility in the South Caucasus, because of its regional environmental risk. "Since Baku consistently demands the closure of the Armenian plant, it is not clear why the government wants to create a new threat on its own territory," Jafarly said.

At first glance, it doesn't add up; why is Azerbaijan, a country brimming with oil and gas, interested in developing nuclear power capacity? It's a question befuddling local experts and environmental activists in Baku. But the questions don't stop there. Under a 08 May 2014 executive order, Azerbaijani President Ilham Aliyev has given responsibility for the nuclear project not to the Ministry of Energy or the Ministry of Industry and Economy, but to the Ministry of Communications and High Technologies, specifically, to a National Center for Nuclear Research that is answerable to the ministry.

The executive order stressed that Azerbaijan's nuclear capabilities would be "for peaceful purposes," according to Azerbaijani news outlets. Work on the nuclear project is slated to begin by the end of 2014, with a hoped-for completion date "within three to four years," Communications Minister Ali Abbasov...not specify the cost of the project or the scale of the future power plant, though he referred to the construction of "several nuclear reactors."

In 2008, IAEA issued to Azerbaijan a preliminary agreement for construction of a single 10-15-megawatt nuclear reactor for research purposes. Baku has not yet formally applied to the IAEA for an agreement about additional reactors. The nuclear facility would be situated on a plot of government-owned land 15 kilometers north of the capital, Baku.

Abbasov, a 61-year-old native of President Aliyev's ancestral Nakhchivan region with a doctorate in microelectronics and a passion for digital IT, has no experience in nuclear energy. Nor, for that matter, do any of his deputies. Baku's interest in developing nuclear power dates back to the Soviet era. Those plans were mothballed amid the 1991 collapse of

the Soviet Union, as well as Azerbaijan's involvement in a prolonged conflict with Armenia over the Nagorno-Karabakh enclave.

...During his 12 May 2014 trip to Baku, French President François Hollande mentioned that unspecified French companies are willing to work with the Azerbaijani government on the construction of a nuclear-power plant. Earlier, Abbasov had named VINCI Construction Grands Projets, one of the world's largest builders of mega-infrastructure facilities, as among the French concerns interested in getting involved in the nuclear project.

Some local economic experts question the logic behind Azerbaijan "going nuclear." The country's economic growth rate is relatively brisk; the Asian Development Bank projects up to 5 percent growth for 2014. Economist Natik Jafarly believes that oil-and-gas-rich Azerbaijan already has the energy and electricity it needs to keep its economy going strong. According to official data, Azerbaijan in 2013 consumed 20.6 billion kWt/h of electricity out of a production supply of 21.5 billion kWt/h. The extra supply was exported to neighboring Georgia and Russia.

Azerbaijan, though, does not produce uranium or nuclear fuel, and would have to look for exporters. "It will make Azerbaijan dependent on uranium price-changes and also politically dependent [on exporting countries]," argued Jafarly, head of the non-governmental Society of Economic Bloggers. The government has not named any possible sources for such uranium supplies.

Other experts believe that the plant will not generate power. In February 2012, the director of Azerbaijan's National Academy of Sciences' Institute for Radiation Problems, Adil Garibov, told ANS TV that the government would build a reactor strictly for research purposes, including the production of isotopes for use in medical treatments. Garibov added that his institute had

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Farida Huseynova, head of the Greens Movement of Azerbaijan, believes that the 2011 Fukushima and 1986 Chernobyl nuclear disasters show that the dangers of nuclear power outweigh the benefits for a country like Azerbaijan. "Supporters of this project say that Azerbaijani scientists will get the chance to conduct nuclear research. However, there are very few such nuclear physicists in Azerbaijan and they could do their research in other countries."

hired 16 young physicists who were being trained at nuclear centers abroad for such tasks.

Whatever the project's purpose, environmentalist Farida Huseynova, head of the Greens Movement of Azerbaijan, believes that the 2011 Fukushima and 1986 Chernobyl

nuclear disasters show that the dangers of nuclear power outweigh the benefits for a country like Azerbaijan. "Supporters of this project say that Azerbaijani scientists will get the chance to conduct nuclear research. However, there are very few such nuclear physicists in Azerbaijan and they could do their research in other countries," Huseynova said.

Rather than nuclear power, building up alternative energy resources well suited to Azerbaijan's climate and geography – hydropower, solar power or wind power – would be preferable, she underlined. Jafarly agreed, noting the contradiction with the Azerbaijani government's long-term demand that neighboring Armenia close its 38-year-old Metsamor plant, currently the only nuclear facility in the South Caucasus, because of its regional environmental risk....

Source: <http://nuclear-news.net/>, 01 June 2014.

STATEMENT – G7

Arms Control and International Security: G-7 Declaration on Non-Proliferation and Disarmament for 2014

· We are committed to seeking a safer world for all. Preventing the proliferation of WMD and their means of delivery remains a top priority. Such proliferation poses a major threat to international peace and security as recognized in UNSCRs 1540, 1673, 1810, 1887, and 1977. During this tenth anniversary year of UNSCR 1540, we reaffirm our commitment to working together towards full implementation of the resolution by 2021 and to strengthen our efforts to combat the proliferation of nuclear, chemical, and biological

weapons and their means of delivery.

· In seeking this safer world, we reiterate our commitment to create the conditions for a world without nuclear weapons, in accordance with the goals of the NPT, in a way that promotes international stability, based on the principle of equal and undiminished security for all, and underlining the vital importance of non-proliferation for achieving this goal...

· We call on all NPT Parties to fulfill their obligations under the Treaty and to preserve and strengthen the international nuclear non-proliferation regime. The 2015 NPT Review Conference presents a vital opportunity for all NPT Parties to further strengthen the Treaty in all its aspects. We recall the successful, consensus outcome of the 2010 NPT Review Conference, including its Action Plan. We remain fully committed to the Action Plan's implementation, and call on all States Parties to implement its actions.

In this regard, we welcome and encourage continued engagement of and among the NPT nuclear-weapon States on verification, transparency and confidence-building measures, with a view to strengthening implementation of all three pillars of the NPT. We welcome the April 2014 meeting of P5 in Beijing, the latest in this ongoing dialogue, and welcome the timely submission of the individual reports made to the third session of the NPT Preparatory Committee in New York in April, 2014, pursuant to Actions 5, 20, and 21 of the Action Plan. We encourage all States Parties, consistent with Action 20 of the Action Plan, to make similar reports.

· The G7 partners continue to attach great importance to the development of internationally recognized nuclear weapon free zones, established on the basis of agreements freely arrived at among States of the regions concerned, in line with the principles set out by the UN Disarmament Commission in 1999 and recognize the legitimate interest of non-nuclear-weapon States in receiving security assurances from nuclear-weapon States in the framework of the relevant legally binding protocols of nuclear-weapon-free zone treaties.

These protocols enhance regional and international security by helping to build confidence between nuclear and non-nuclear weapon states. We welcome

the signature of the protocol to the Treaty on a Nuclear Weapon-Free-Zone in Central Asia. We also welcome the commitment of the P5 States to continue to consult with the States Parties to the Treaty on the Southeast Asia Nuclear-Weapon-Free Zone.

· We reaffirm the importance of commitments and assurances given by the NPT nuclear weapons States to the NPT non-nuclear weapon States. We deplore the recent and ongoing

breaches of the commitments given to Ukraine by the Russian Federation in the Budapest Memorandum. In this Memorandum, the Russian Federation, United Kingdom and the United States reaffirmed their commitment to respect Ukraine's independence and sovereignty and existing borders; reaffirmed their obligation to refrain from the threat or use of force against the territorial integrity or political independence of Ukraine and that none of their weapons will ever be used against Ukraine except in self-defense or otherwise in accordance with the Charter of the United Nations, and reaffirmed their commitment to Ukraine to refrain from economic coercion. We consider that Ukraine's historic decisions in 1994 were significant steps in promoting its own and wider regional and international security. We also welcome Ukraine's statement at the 2014 Non-Proliferation Treaty Preparatory Committee that Ukraine remains committed to the provisions of the NPT.

· The G-7 strongly support the goal of a zone free of nuclear weapons, as well as other weapons of mass destruction and their means of delivery in the Middle East. Recalling the decision at the 2010 NPT Review Conference to hold a Conference on the establishment of such a zone, we strongly support Finnish Ambassador Laajava's work as facilitator of the Conference, and welcome the continued commitment of the co-sponsors of the 1995 Resolution (the Russian Federation, the United Kingdom and the United States). We call upon the States of the region to continue their direct engagement with each other in order to finalize the

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preparation and convening of the Conference in the nearest future.

While acknowledging the right of withdrawal from the NPT contained in Article X.1, we consider that modalities and measures to address withdrawal from that Treaty are needed as demonstrated by North Korea's announcement of withdrawal. We underscore the role of the UN Security Council in addressing announcements of withdrawal promptly and without delay, assessing the consequences of such withdrawal, including possible adoption of measures in this regard. We also emphasize that a State Party will remain responsible under international law for violations of the NPT committed prior to its withdrawal. We also underscore that nuclear transfers received prior to withdrawal should remain in peaceful uses and subject to IAEA safeguards. We welcome the growing recognition that this issue needs to be addressed urgently at the 2015 Review Conference and we support the adoption of appropriate recommendations on measures that address withdrawal in the Final Document.

Nuclear Proliferation Challenges

We underscore our support for E3+3 efforts led by High Representative Ashton to reach a long-term comprehensive solution to the Iranian nuclear issue that resolves fully the international community's concerns regarding the exclusively peaceful nature of Iran's nuclear program and ensures Iran does not acquire nuclear weapons. We welcome the implementation of the Joint Plan of Action (JPOA) between the E3+3 and Iran and the essential role played by the IAEA in verifying the nuclear-related measures. We commend those states which made financial contributions in this context for the monitoring work of the IAEA. We reaffirm our strong support for the IAEA's ongoing efforts to verify the exclusively peaceful nature of Iran's nuclear program and we call on Iran to

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cooperate fully with the IAEA to resolve all outstanding issues, particularly those which give rise to concerns about the possible military dimensions (PMD) of Iran's nuclear program, the satisfactory resolution of which will be critical for a long-term comprehensive solution to the Iranian nuclear issue.

We call on Syria to remedy its noncompliance with its nuclear safeguards obligations, and to cooperate fully with the IAEA in resolving all outstanding questions regarding the nature of its nuclear program.

We will not accept North Korea as a nuclear armed state and urge North Korea to abandon all nuclear weapons and existing nuclear programs, and to return, at an early date, to the NPT and to IAEA safeguards and come into full compliance with its

nonproliferation obligations. We condemn in the strongest possible terms North Korea's continued development of its nuclear and ballistic missile programs in direct violation of UN Security Council Resolutions 1718, 1874, 2087 and 2094.

In this regard, we condemn North Korea's February and March 2014 ballistic missile launches in clear violation of its UNSCR obligations and call on North Korea to refrain from further provocations. We urge North Korea to halt any efforts to restart, readjust, and expand its nuclear facilities at Yongbyon, and

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cease immediately all nuclear activities including the ones related to its uranium enrichment and plutonium programs. We reaffirm our collective hope for lasting peace and stability on the Korean Peninsula and call on North Korea to refrain from any actions

that escalate tensions in the region. We firmly support diplomatic efforts to implement the 2005 Joint Statement and to bring North Korea into compliance with its UN Security Council obligations, and call on North Korea to take concrete steps toward complete, verifiable and irreversible denuclearization. We commend the international community's unified resolve in the face of North

Korea's defiance of it and urge continued vigilance by all states to curtail North Korea's proliferation activities and impede the continued pursuit of its proscribed nuclear and ballistic missile programs.

Nuclear Disarmament

· We encourage the P5 to continue their important dialogue, including on nuclear arms reductions and their work on confidence-building and transparency that represent major steps in accordance with Article VI of the NPT and the Action Plan adopted by the NPT Review Conference in May 2010. We welcome the continued implementation of the New START Treaty by the U.S. and Russia and the disarmament-related actions already made by France and the UK, as well as urge others that possess nuclear weapons but have not yet engaged in nuclear disarmament efforts to reduce their arsenals.

· Early entry into force and universalization of the CTBT is in the security interests of every nation. States that have yet to sign or ratify the Treaty should do so without waiting for others. For the Treaty to be an effective mechanism for nuclear disarmament and nonproliferation, we believe all States must maintain the political will and provide adequate resources to complete the Treaty's verification regime and maximize the capabilities of the Provisional Technical Secretariat. We welcome the voluntary adherence to unilateral moratoria on nuclear explosive tests and call on all States to refrain from acts which would defeat the object and purpose of the Treaty. We also welcome the establishment of the Group of Eminent Persons and support its activities, which will inject new energy and dynamics into the push for entry into force.

· The CD and its predecessor bodies have a long history of delivering landmark agreements, but we share the growing impatience of many in the international community at the impasse at the CD. We believe the next logical step in multilateral negotiations to advance both nuclear

nonproliferation and disarmament goals is the negotiation of a Treaty banning the production of fissile material for use in nuclear or other nuclear explosive devices (FMCT), on the basis of document CD/1299 and the mandate contained therein. While we welcome declared moratoria by some states on the production of fissile material for use in nuclear weapons or other nuclear explosive devices, a binding and verifiable ban on such production is a necessary step toward a world without nuclear weapons. We welcome the work of the UN Group of Governmental Experts (GGE), which will make recommendations on possible aspects that could contribute to a future Treaty, and can build momentum towards eventual negotiations in the CD.

Peaceful Use of Nuclear Energy

· All States Parties to the NPT have an inalienable right to use nuclear energy for peaceful purposes, in compliance with their international obligations. We reiterate our willingness to cooperate with States that meet their nuclear non-proliferation obligations and wish to develop a civil nuclear program in a manner that meets the highest standards of safety, security, non-proliferation, and respect for the environment.

· Multilateral approaches to the nuclear fuel cycle contribute to nuclear energy programs. We support the IAEA's work to establish a bank of Low Enriched Uranium in Kazakhstan and urge the conclusion of a Host State Agreement at an early date in order to allow for the beginning of operation of the bank.

IAEA Safeguards

· We support the central role of the IAEA, and in particular its safeguards system, which remains essential for the effective implementation of the nuclear non-proliferation regime. The IAEA must continue to have the necessary resources and legal authorities to be able to carry out its mission in full, in accordance with its statutory mandate. We will continue to help

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promote an IAEA Comprehensive Safeguards Agreement together with an Additional Protocol as the universally accepted international verification standard, which should be a consideration in decisions on the supply of nuclear fuel, equipment, or technology. We call on all States which have not yet done so to sign and bring into force the Additional Protocol and apply its provisions as soon as possible.

Nuclear Security

· We welcome the outcomes of the Nuclear Security Summit in The Hague on 24-25 March 2014 where 58 world leaders worked to further reduce the threat of nuclear terrorism by securing vulnerable nuclear and other radioactive material around the globe. The Hague Summit participants agreed to a Communique that reaffirms the fundamental responsibility of States, the need to further strengthen and coordinate international cooperation, and the need for a strengthened and comprehensive international security architecture. Many countries agreed to multilateral joint commitments intended to advance the goal of nuclear security. We highlight Belgian and Italian work to complete the removal of their excess supplies of highly enriched uranium and plutonium for elimination, and Japan for announcing that it will work with the United States to eliminate hundreds of kilograms of nuclear material from one of its experimental reactors. We call on others to take additional transparency measures. We also continue to encourage nations to join existing relevant international initiatives that support Summit goals.

· We urge all States Parties to the CPPNM to ratify, accept or approve the 2005 Amendment to the Convention as soon as possible. In addition to securing nuclear and radiological material at their source, we recognize the need to locate and secure material currently available on the illicit market and prosecute those involved in the trafficking of these materials.

· We commend the work of the Global Initiative to Combat Nuclear Terrorism and other international efforts to counter nuclear smuggling and combat nuclear terrorism. The ongoing occurrence for more than 20 years of nuclear and radioactive trafficking highlights the threat that terrorists or other malicious actors can acquire these dangerous materials. The international community must be vigilant to prevent the world's most dangerous materials from falling into the wrong hands.

The Nuclear Suppliers Group

· We welcome the call by the NSG on all states to exercise vigilance to ensure that the supply of nuclear related technologies and materials is for peaceful purposes and to make best efforts to ensure that none of their exports of goods and technologies contributes to the spread of nuclear weapons. In this regard, we recognize that the NSG Guidelines serve as the standard for nuclear and nuclear-related dual-use exports. We call on NSG Participating Governments to strictly observe the Guidelines and encourage nuclear supplier states that are not NSG participating governments to act in conformity with the Guidelines on a voluntary basis. We also support the discussion of the Additional Protocol as a condition of supply to enhance nuclear non-proliferation efforts. We welcome the progress that is being made by the Technical Experts Group to ensure that control lists remain current, and we welcome the Group's outreach efforts to enhance non-proliferation. We welcome the membership of Mexico in 2012 and Serbia in 2013.

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We continue to promote robust counter-proliferation tools. We support the PSI. The list of endorsing nations continues to grow, with Vietnam recently being the 104th endorsing nation. We commit to undertake further measures to enhance the capabilities and authorities required to interdict shipments of weapons of mass destruction, their delivery systems, and related materials to and from states and non-state actors of proliferation concern.

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We promote outreach for enhanced participation in the PSI and continue to focus on legal and operational issues.

Source: Excerpted. <http://www.einnews.com/>, 11 June 2014.

NUCLEAR STRATEGY

BRAZIL

Brazil Builds Nuclear Submarine to Patrol Offshore Oil

Brazil is building five submarines to patrol its massive coast, including one powered by an atomic reactor that would put it in the small club of countries with a nuclear sub. The South American giant is in the process of exploring major oil fields off its shores that could make it one of the world's top petroleum exporters. The new submarines aim to protect that resource, said the navy official coordinating the \$10-billion project..

"The nuclear-propelled submarine is one of the weapons with the greatest power of dissuasion," he told AFP.... The new submarines, which will replace Brazil's aging fleet of five conventional subs, are being built at a sprawling 540,000-square-meter (135-acre) complex in Itaguaí, just south of Rio de Janeiro.

The project is a joint venture between the navy, Brazilian construction firm Odebrecht and French state defense firm DCNS. Brazil and France signed a deal for the project in 2008 under which DCNS is providing building materials and training while Brazil builds up its own submarine industry. Brazil is developing the nuclear reactor and enriched uranium itself. The first submarine, a conventional sub called SBR1, is 45-percent complete and scheduled to launch in 2017. The second is in the early stages of construction and is due to launch in 2019.

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Work on the nuclear sub, SNBR, is supposed to start in 2017, with a launch target of 2025, the year the project wraps up. Currently the only countries to design and build their own nuclear submarines are the permanent members of the UNSC, Britain, China, France, Russia and the US plus India, which has completed one and is in the process of building more.

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Unlike conventional submarines, which run on electric or diesel engines and have to resurface every 12 to 24 hours to refuel, nuclear submarines run on atomic power and can stay immersed indefinitely. They can also be outfitted to launch nuclear warheads — though under Brazil's constitution and the Nuclear Non-Proliferation Treaty, the country is barred from developing atomic weapons.

Its five new submarines will be equipped with conventional torpedos. Brazil's navy says the conventional submarines will patrol ports and other strategic points along the country's 8,500-kilometer (5,300-miles) coast. The SNBR will patrol farther away, around the country's "pre-salt" deepwater oil reserves — estimated at up to 35 billion barrels — and the so-called Blue Amazon, a biodiverse area off the coast with minerals including gold, manganese and limestone. According to the SIPRI, Brazil had one of the world's 15 largest defense budgets in 2013, at \$31.5 billion.

Source: <http://news.yahoo.com/>, 03 June 2014.

INDIA

Modi Briefed on Nuclear Command Structure

PM Modi has been briefed that sweeping modifications to the command and control structure of India's nuclear weapons are urgently needed, highly placed government sources have told The Hindu. The proposals, which come as India becomes just one of six nations with a nuclear submarine operational, centre on the appointment of a tenured four-star general to wield operational responsibility for the arsenal.

The briefing on India's most closely held secrets, the sources said, was given last week by outgoing National Security

Adviser Shiv Shankar Menon and Strategic Forces Command chief Vice-Admiral P.S. Cheema, along with Defence Research and Development Organisation and Department of Atomic Energy experts. Mr. Modi, the sources said, was told that the Naresh Chandra Committee on national security reforms had called for operational control of the arsenal to be given to a full-time chairman of the joint chiefs of staff committee, or the CJSOC, a four-star officer with a two-year tenure drawn by rotation from the three armed forces.

India's Nuclear Command Authority, chaired by the PM, has control of the country's estimated 90-110 nuclear warheads. In the event of a crisis, the NCA orders the SFC to ready the arsenal. The SFC, working with experts at the DAE and the DRDO, is then tasked to work through the CJSOC to mate the warheads with air and missile-delivery platforms held by the three armed forces.

However, the CJSOC position now goes to the senior-most of the three service chiefs, leading to changes in just a few months sometimes — which, the Naresh Chandra Committee said in its classified 2011 report, created a weak link in the command chain. "There are many complex issues that will present themselves in the course of an evolving nuclear crisis," said strategic weapons expert Admiral Raja Menon, "which someone who is also struggling to command an armed service during a war will just not be able to handle." ...Earlier, a Group of Ministers, led by the then Deputy Prime Minister L.K. Advani, had recommended the appointment of a Chief of Defence Staff, a supreme military office that exists in other nuclear weapons States. The then PM Vajpayee, however, shelved the idea after resistance from politicians wary of creating a single-point military leadership as well as the air force.

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The Air Force announced it was deploying two more nuclear-capable bombers to Europe on top of the three aircraft sent over last week. The US Global Strike Command press release announcing the deployment of two B-2 stealth bombers did not specify a threat that the aircraft were responding to. Still, their fielding comes amid stepped-up efforts by the US military to reassure NATO member countries of the US commitment to collective security against a backdrop of continuing tensions with Russia over its activities in Ukraine.

Source : <http://www.thehindu.com/>, 04 June 2014.

USA

US Deploys Two More Nuclear-Capable Bombers to Europe

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Last week, the Air Force deployed three nuclear-capable B-52 bombers to Europe for training operations. The press release said the B-2 bombers were on a short-term mission to the US European Command area of operations that would provide "opportunities for aircrews to sharpen skills in several key operational sets and become familiar with airbases and operations in the region." The release did not say when the bombers would return to the US.

"This deployment of strategic bombers provides an invaluable opportunity to strengthen and improve interoperability with our allies and partners," US Strategic Command head Adm. Cecil Haney said in released comments. "The training and integration of strategic forces demonstrates to our nation's leaders and our allies that we have the right mix of aircraft and expertise to respond to a variety of potential threats and situations."

Source: <http://www.nti.org/>, 09 June 2014.

BALLISTIC MISSILE DEFENCE

CANADA

Missile Defence Program Would Mean Smoother Decisions, Clearer Threats: General

Canada's top commander at NORAD says participating in the US ballistic missile program would mean smoother decision-making in a crisis if or when a hostile missile were on its way towards the continent. Lt.-Gen. Alain Parent, who is deputy commander at the North American Aerospace Defence Command, testified Monday before the Senate defence committee, but was careful not to advocate for one position or another.

...There are different levels of participation when it comes to missile defence, ranging from warnings, intelligence and command and control all of the way up to stationing anti-missile batteries on Canadian soil. It would be up to the government to decide how far the country was prepared to go, he said.

"It would be for Canada to discuss with the US in which part Canada would be interested and willing to invest and which part they would put off the table," Parent testified. Both the Commons and Senate defence committees are studying whether it's time for Canada to join the program, which was ranked among the top priorities of the US government during the administration of President George W. Bush.

The Harper government has remained silent except to say there's no change to the current policy. Not all of Canada's geography is factored into the technical layout of the missile shield, something that would require detailed negotiations in addition to an outlay of cash, Parent said. ...Two former Liberal defence ministers Bill Graham and Dave Pratt told a Conservative-dominated committee last week that Canada should participate. Graham, who served as defence minister between 2004-2006, called it a good thing that the decision to stay out of the plan is being reviewed by Parliament.

The Liberal government's most recent opportunity to join the program was turned down in 2005. In the years since, the threat from rogue nations such as North Korea has only grown. The capability of the regime in Pyongyang has gone from two-stage rockets capable of threatening Japan and other Far Eastern nations to three-stage missiles that could reach North America, Parent told the committee.

Parent also laid out a series of threats from a resurgent Russia, which is investing more in submarine ballistic missile capabilities.

Source: <http://www.brandonsun.com/>, 02 June 2014.

INDIA

India Tests Ballistic Missile for Subs

India successfully tested a new, longer-range SLBM on 24 March 2014, Indian news outlets reported last May 2014. The test of the missile, known as the K-4, took place off the southeastern coast in the Bay of Bengal using a submerged pontoon. The two-stage, nuclear-capable missile traveled approximately 3,000 kilometers, the news accounts said.

India did not immediately publicize the missile test. But *The Hindu* on 08 May 2014 quoted officials who were present at the test as calling it "excellent" and saying that they would conduct "many more missions" like it to increase the reliability of the missile. The K-4 eventually is to be deployed on Indian submarines, the first of which is currently undergoing testing.

Avinash Chander, director-general of India's DRDO, said 13 May 2014 that India would be conducting a test launch of the K-4 from the INS Arihant "within the next few months." ... India announced the successful development of a shorter-range SLBM, the K-15, in July 2012 and indicated at that time that the longer-range K-4 was under development.... According to the DRDO, the K-15 has a maximum range of 700 kilometers for a 700-kilogram payload.

Only four other countries China, France, Russia, and the US have the capability to produce SLBMs. Although the UK deploys such missiles, they are produced in the US. India is planning to develop four nuclear submarines in total, and the boats are designed to carry four K-4 missiles or 12 K-15 missiles. New Delhi is planning to deploy the submarines by 2023.

Source: <http://www.armscontrol.org/>, June 2014.

RUSSIA

Live Tactical Missile Firing Touted by Russia's Western Command

Russia's most advanced missile complexes for precision firing exercises have been announced by

the country's Western Command. Training includes locking on top-priority targets, with air-based and ballistic ground-based missile complexes. The Russian Air Force's strategic long-range aviation is engaging surface targets with cruise missiles, while training is being undertaken on deployment at Iskander-M nuclear-capable mobile theater ballistic missile complexes. The drills focus on the elimination of hard-to-destroy targets with a high-impact precision weaponry.

The war games started on 27 May 2014 and will last till 05 June 2014. "In the course of the maneuvers, we carry out integrated damage attacks on the critically important installations of a hypothetical aggressor's infrastructure, using high-precision ground-and-air-based weapons," reported the press-service of Russia's Defense Ministry.

Iskander-M (NATO reporting name SS-26 Stone), a quasi-ballistic missile complex with an officially declared range of 400 kilometers, is currently limited by the INF agreement signed between the US and the Soviet Union back in 1987. The INF treaty prohibited development and deployment of all medium-range ballistic and cruise missiles, and eliminated already existing ones with a range of between 500 and 5,500 kilometers.

Russian authorities have repeatedly warned NATO leadership that in case of further deployment of US anti-ballistic missile complexes in Europe, Moscow reserves the right to deploy Iskander-M missile complexes in the Kaliningrad region, Russia's enclave in Europe. In this case, all of Poland, where the US plans to station its ABM bases, will be covered for a potential launch-through-attack strike. The threat of having modern missile complexes on its borders, which practically cannot be intercepted, sparked hot opposition from the Baltic States and Poland, which called on Washington to increase US military presence in the region.

In December 2013, Russia's President Vladimir Putin stated that so far the decision about deployment of Iskander-M missiles to Kaliningrad had not yet been

taken, whereas Foreign Minister Sergey Lavrov maintained the matter of deployment is fully in the hands of the Russian military, saying that "when there's a need – the military will make the decision." The press-service of the Russian Defense Ministry stressed that deployment of Iskander complexes is not limited with any international agreements.

Defense Minister Sergey Shoigu finalized the discussion, saying that "on the territory of the Russian Federation we deploy whatever we want, wherever we want." The current maneuvers, as the previous ones, are being conducted against the background of the new Ukrainian authorities' military operation against the primarily Russian-populated rebellious eastern regions of Ukraine, which are demanding federalization of the country.

Source: <http://rt.com/>, 02 June 2014.

SOUTH KOREA–JAPAN

US Seeks Greater Missile Defense Cooperation by Japan, South Korea

President Barack Obama warned that the US was ready to respond to China's "aggression" toward its neighbors at sea but said Washington should lead by example by ratifying a key treaty. In a wide-ranging speech on foreign policy to US military cadets at West Point, Obama said that the US should shun isolationism and that its military must be prepared for crises.

"Regional aggression that goes unchecked whether it's southern Ukraine, or the South China Sea, or anywhere else in the world will ultimately impact our allies, and could draw in our military," ...But Obama emphasized caution on any decision to use force and said: "American influence is always stronger when we lead by example."

...Senators of the rival Republican Party have refused to ratify the treaty, saying that the UN convention would override US sovereignty. Tensions have been rising for months between China and its neighbors

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at sea, with Vietnam accusing Beijing of ramming and sinking one of its fishing boats in the South China Sea. ...A top US military official called for better missile defense cooperation between Japan and South Korea, in the face of strained ties between America's two closest Asia allies and a belligerent North Korea.

"We're encouraging our allies and partners to acquire their own missile defenses and to strengthen regional missile defense cooperation that will result in better performance than individual countries acting alone," said James Winnefeld, vice-chairman of the Joints Chief of Staff. "We will continue to emphasize the importance of developing regional ballistic missile defense systems," Winnefeld said during a speech at the Atlantic Council think tank.

"This is a very politically sensitive topic for several of our regional allies, but progress in this area would only increase our confidence in the face of persistent North Korean provocations," Winnefeld said. "This is about ensuring we can deny the objectives of any insecure authoritarian state that believes acquisition of deliverable weapons of mass destruction is key to the preservation of its regime."

...His appeal comes with relations between Seoul and Tokyo at their lowest level in years, strained by Japan's 1910-45 colonial rule of Korea and a territorial dispute over islets in waters between the two countries. Despite those regional tensions, Washington likely will "come to rely more" on its Asian allies "to resource the means for their defense," the general said — especially "in a world of declining budgets."

North Korea's nuclear and ballistic missile program is a major security concern in the Pacific region and beyond. Despite international isolation and extensive sanctions, Pyongyang appears to be readying a fourth nuclear test, observers have said.

While it's among the states most concerned about North Korea, resource-poor Japan has maintained friendly relations with oil-rich Iran through its years of ostracism, keeping up a diplomatic dialogue during Tehran's decades long confrontation with Washington.

The Wall Street Journal reported that Washington is weighing a plan to deploy an advanced missile-defense system in South Korea, one that could intercept short, medium and intermediate missiles. The anti-missile system THAAD, short for Terminal High-Altitude Area Defense, is similar to one deployed by the US to protect bases in its territory of Guam.

Winnefeld argued that a regional approach to missile defense could help spread the costs, noting that a single Thaad missile interceptor costs around \$11 million compared to \$3 million for a Scud, North Korea's preferred missile. Meanwhile, Winnefeld said the US will deploy an additional TPY-2 radar in Japan by the end of 2014 "to both improve our homeland and regional defense capabilities." ...The US is also continuing to operate the Sea-based X-Band Radar (SBX) "as needed in the Pacific" and is planning to deploy a new, long-range radar for the Pacific region around 2020.

Source: <http://www.spacedaily.com/>, 28 May 2014.

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NUCLEAR ENERGY

ARGENTINA

New Reactor Construction Starts in Belarus

Unit 2 of Ostrovets nuclear power plant is now under construction, several months ahead of schedule. Russia's Atomstroyexport is building the plant, with two 1200 MWe VVER reactors, on a turnkey basis. It is financed by a Russian export credit facility of up to US\$ 10 billion, for 25 years. All fuel will be supplied by Russia, and used fuel will be returned there for recycling.

Russia is now the world's top exporter of nuclear power plants, and Rosatom's order book for building new plants abroad stands at almost \$100 billion, including units in Finland and Hungary. Many of these export orders are related to attractive financing packages, including loans of up to 90% of the value, and build-own-operate contracts with guaranteed sales.

Source: World Nuclear News, 03 June 2014.

INDIA

Kudankulam Nuclear Plant Attains Full Power Status for First Time

India's largest nuclear plant reached its full power for the first time on 07 June 2014. The Indian atomic energy program got a new high, as the controversial Russian-made nuclear reactor at Kudankulam in Tamil Nadu was able to generate 1000 MW of power.

Speaking to NDTV, the chairman of the Indian Atomic Energy Commission Ratan K. Sinha said, "Kudankulam is totally safe and today was a proud moment on reaching this big milestone, now all questions asked by critics should be laid to rest." The electricity generated at unit number one of the power plant is providing electricity to homes in Tamil Nadu, Karnataka, Kerala and Puducherry. 12 years in the making and made at a cost of Rs. 17,000 crores the reactors have been in the news for a long time for the wrong reasons, first anti-nuclear activists called them unsafe and most recently on 14 May 2014, six workers were injured due to spillage of hot water in the turbine building. The workers are currently recovering from their injuries.

Plant operators say they could declare the plant as commercial in two months. For the next 2-3 days the Kudankulam plant will run at its maximum power of 1000 MW after which as per the directions of the atomic regulator some more tests will be conducted. The second 1000 MW units of the Kudankulam complex will become operational in 2015.

Source: <http://www.ndtv.com/>, 07 June 2014.

India Seeks More Security Measures for Koodankulam Nuclear Power Plant

India has sought "enhanced security measures" for the Koodankulam Nuclear Power Plant after the Fukushima Daichi atomic disaster in Japan, Russia said. "We had received a request from India for enhanced safety measures. Of course India had to pay more for such kind of system. The Koodankulam plants have four channels of safety system," said V Asmolov, first deputy general of Rosenergoatom, the Russian nuclear power station operations subsidiary of a state-owned company.

"This can lead to immediate stopping of chain reaction in case of crisis. The system will ensure water supply for cooling of the reactor even if there is a black out for 24 hours"...

"The system will also help faster cooling of the reactor in case of a crisis. The plant is one of the safest in the world and has both active and passive security measures, which are independent of one another," said Mikhail Bykov, Deputy Chief Designer of Rosatom.

Units 1 and 2 of Tamil Nadu-based KKNPP have been built with the help of Russian assistance at the cost of Rs 17,200 crore. A General Framework Agreement was also signed between the two countries to construct reactor 3 and 4. Sources pointed out, request by India was necessitated after the 2011 Fukushima Daichi incident in Japan due to overheating of the reactor after tsunami hit the plant.

The second reactor of Koodankulam is also likely to attain its full capacity by the end of the year. The first reactor of the Koodankulam Nuclear Power Plant attained 100 per cent capability only last week and had started generating power in October 2013. "The first reactor attained 100 per cent capability last week. The second reactor should also attain full level hopefully by late this year," said V Limarenko, head of NIAEP-ASE, a company of Rosatom, responsible for building reactors for KKNPP....

Source: <http://www.newindianexpress.com/>, 09 June 2014.

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UGANDA

Uganda Considers Nuclear Energy

Uganda is considering the use of nuclear energy to supplement hydro-power, President Yowri Museveni has said. The President said a developed Uganda would need a lot of energy (50,000 megawatts or more) which cannot be got from hydro-power even if all the sites that are not yet exploited are complete.... President Museveni said a developed Uganda would need alot of energy to meet demand. "We shall have some more energy from the geo-thermal (may be 1,000 megawatts or there about). Yet a developed Uganda needs a lot energy % 50,000 megawatts or more."

"Meanwhile I prepare the country for the option of the nuclear energy because for that one, we have got endless supply. The composite growth for the whole economy has improved even before the bottlenecks have been removed," ...Museveni however, said that if the cost per unit for solar energy goes down, then the solar energy will be the solution.

Source: <http://www.newvision.co.ug/>, 05 June 2014.

USA

US EPA Announces Carbon Emission Reduction Targets

The US Environmental Protection Administration has announced that it will use its authority under the Clean Air Act to require(a reduction in carbon emissions from US power plants of 25% below 2005 levels by 2020, and a 30% reduction by 2030, with states to be responsible for achieving this. There has already been a 16% drop since 2005. The EPA's rules are expected to be finalized in June 2015, and states will then have at least one year to submit their plans to comply with(the emission reductions, using various means including increased energy efficiency, greater proportion of nuclear power and renewables, and carbon capture and storage.

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Source: *World Nuclear News*, 03 June 2014.

Nuclear Energy Considered at Energy Summit

The nuclear portion of the Wyoming Energy Summit started off with a bang, or perhaps a controlled reaction, with the showing of the film

"Pandora's Promise." The movie begins with anti-nuclear activists passionately protesting, and rapidly evolves to the tale of a group of people who started out against nuclear energy who found themselves coming around just as passionately in favor of it. The rest of the movie explains their changes of heart, and why they now feel that nuclear energy is key to powering the planet. ...

Wyoming Perspective: ...After the movie ended and the lights came up, a uranium panel representing all the major players in Wyoming took the stage. In addition to Ken Vaughn, representing Cameco, the sponsor of "Pandora's Promise;" there was Wayne Heilli, president and CEO of UR Energy; Donna Wichers, senior vice president of Uranium One and Paul Goranson, president and COO of Uranerz.

Although the uranium industry is struggling with current spot uranium prices around \$28 per pound, all agreed that brighter days are ahead, and that they could be even brighter if Wyoming took over the licensing of radioactive material, a task currently handled by the Nuclear Regulatory Commission.

"If Wyoming can survive this downturn, we're going to be in a much better place than we were," Goranson said. "We missed the last peak because the regulatory process is so slow. It took us [Uranerz] seven years to reach commercial operations What if Uranerz had gotten into operation when the price of uranium was up in the \$50s? It would have been a tremendous game-changer." Goranson added that part of the delay is "because most of the time the

NRC is duplicating work that has already been done by the Wyoming Department of Environmental Quality."

Agreement State Status: Heili suggested that Wyoming could improve its competitive position in the world by enhancing its permitting process. "We can bring home the radioactive material license through 'agreement state status' – rather than rely on the NRC," Heili said. "If the state can agree to regulate those aspects, it would reduce redundancies and shorten timelines."

For example, in Texas, which is an agreement state, Uranium Energy Corporation was able to start production three years faster than companies in Wyoming, Heili said. Having the NRC fly "all the way from Rockville, Maryland, just to agree to everything the DEQ has already signed off on – it's not adding one ounce of environmental protection; all it's doing is slowing things down," Goranson added. Besides, he added, it's part of the NRC's mission statement to allow states to take over.

Thirty-seven states have agreement state status, but Wyoming, which has four of the eight active uranium production sites, does not. In fact, it's the only producing state that isn't an agreement state. Routing licensing through the NRC is also costly. Currently, the state pays the NRC about \$280 per hour, plus annual fees and "everything else needed to get a new license," Wichers said. Uranium One paid \$3 million to get their license for Moore Ranch, "plus three years of pain," she added. "This is the time for Wyoming to become an agreement state," Wichers said. "This process will take a couple of years, and we're looking at three years for the boom to start back. The state needs to be there – be an agreement state – by that time."

Long-term Outlook Positive: The long-term outlook for uranium is good. China – which already has 20 operating nuclear plants, is building 28 more. Emerging economies, like India's, are increasingly turning to nuclear power while France, the poster

child for nuclear energy, has gone all-nuclear and now has half the carbon footprint of Germany. With Wyoming being the No. 1 source for uranium in the country, Wichers said a few more years of pain will lead to a bright future for the industry....

Source: <http://www.wyomingbusinessreport.com>, 06 June 2014.

SRI LANKA

Sri Lanka Eyes Nuclear Power Plant After 2030

Sri Lanka's state-run Ceylon Electricity Board has included nuclear power for the first time as a possible power generation option in 2031 in its latest study of long term generation capacity. CEB long term generation plan has studied nearly 20 different scenarios along with a base case scenario with the lowest which will be immediately implemented.

Sri Lanka's state-run Ceylon Electricity Board has included nuclear power for the first time as a possible power generation option in 2031 in its latest study of long term generation capacity. CEB long term generation plan has studied nearly 20 different scenarios along with a base case scenario with the lowest which will be immediately implemented.

Nuclear power has been included in a situation where coal power has been restricted to 60 percent of the total in the system and a diversification into different types of energy. "Nuclear plants are inherently large compared to other technologies for power generation," the 2013-2032 Long Term General Plan said. ...However cabinet approval has been given to consider nuclear as an option to meet the future energy demand and also to consider Nuclear Power in the generation planning exercise and to carry out a pre feasibility study on the Nuclear Option. Nuclear option was included in this study as a candidate plant from year 2030 onwards."

The CEB said a proposal had been given to the IAEA for technical assistance. Initially a 600MegaWatt plant has been included in the study, which is relatively small. Nuclear power complexes run into several thousand MegaWatts in most countries. Tilak Siyambalapatiya, a power sector specialist and former generation planner said running nuclear plants are complex and new skills including in nuclear medicine are needed. To start a plant is 2030, Sri Lanka has to begin work on many aspects of the plant now, he said, so the deadline may be too

optimistic. The CEB also needs specialists to run such a plant. At the moment the CEB is gaining capacity to run coal power plants

Source: <http://www.lankabusinessonline.com/>, 04 June 2014.

NUCLEAR COOPERATION

RUSSIA-BELARUS

Russia and Belarus Settle All Disputes over Nuclear Plant Construction

Russia and Belarus have resolved all controversial issues related to the construction of the first nuclear power plant in Belarus, Russia's nuclear chief Sergei Kirienko said Monday. The \$10-bln Ostrovets power plant is being built by Russia's Atomstroyexport company, a subsidiary of state-owned nuclear energy corporation Rosatom, under a contract signed in July 2012. The project is expected to be completed in July 2020. "We have settled all disputes over the work of Russian organizations [involved in the project] and agreed that nothing should be sacrificed," Kirienko, head of Rosatom, said at a meeting with Prime Minister Dmitry Medvedev. Kirienko said that the construction of two reactors with capacity of 1,200 MWe each is going ahead of schedule. "The first unit is a month ahead of schedule, while the second is about 4-5 months ahead"

Source: <http://voiceofrussia.com/>, 02 June 2014.

RUSSIA-CHINA

Russia to Work with China on Floating Nuclear Power Plant

President Vladimir Putin of Russia signed a contract with President Xi Jinping of China for the two nations to build a floating nuclear power plant during his visit to Shanghai earlier this June 2014.... Russia is

currently constructing the world's first floating nuclear power plant named the Akademik Lomonosov in Saint Petersburg. Powered by two KLT-40C naval propulsion reactors, the Akademik Lomonosov will be able to provide up to 70 MW of electricity or 300 MW of heat. After it is completed, it is likely to enter service in the city of Pevek.

...Vasiliy Kashin from the Center for Analysis of Strategies and Technologies based in Moscow suggested however that developing a floating nuclear power plant jointly with Russia will give China the experience it needs to build a nuclear-powered carrier in the future. Huang Dong, a military expert from Macau, said building a nuclear-powered submarine is a totally different proposition to building a nuclear-powered aircraft carrier. The displacement of a submarine may be no greater than 10,000 tonnes while that of an aircraft carrier is usually 100,000 tonnes, Huang said.

The Hong Kong-based Ta Kung Pao suggested Russia is unlikely to transfer such technology to China for military use, however. The report pointed out that the floating nuclear plant is designed primarily for civilian use and this is the only program

in which Putin is willing to cooperate with China.

Source: <http://www.wantchinatimes.com/>, 29 May 2014.

RUSSIA-IRAN

Russia Plans to Build Up to Eight New Nuclear Reactors in Iran

Russia plans to sign a contract with Iran this year 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 Reuters....

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

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demands for cuts in its uranium enrichment capacity, pointing to plans for a future network of nuclear power stations.

Western powers want any lasting agreement with Iran to put to rest suspicions that it could develop nuclear weapons-making ability through enrichment. Iran denies any such intent.... Russia, one of the six powers, built Iran's only operating nuclear power reactor, at Bushehr. "Russia and Iran may sign an intergovernmental agreement this year 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.

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...Longstanding Western fears that the Bushehr project could yield spent fuel of use in nuclear weapons - something it denies it is seeking to do - receded after Iran promised to send the material back to Russia. Moscow voted for four rounds of UNSC sanctions against Iran over its contested nuclear activity but has sharply criticised additional measures imposed by the US and European Union, calling them a hindrance to diplomacy in search of a permanent settlement with Tehran.

Source: <http://www.haaretz.com/>, 29 May 2014.

NUCLEAR SAFETY

UK

UK Will Have to Gamble with Nuclear Safety to Provide Power, Analyst Warns

Britain may have to stretch safety limits on nuclear power stations to keep the lights on, warned a leading energy analyst.... Dorian Lucas, a nuclear specialist at energy consultancy, Inenco, made his comments after it was revealed that power group, EDF, had won permission to change the rules for its Dungeness B station.

"Britain has no choice but to gamble with extending the safety limits of the country's ageing fleet of nuclear power plants to avoid the looming spectre of 1970s-style blackouts," said Lucas. The atomic power station in Kent has come to an agreement

with the Office of Nuclear Regulation (ONR) that it can have the margin increased on the shrinkage of the graphite bricks inside the reactor from 6.2% to 8%.

The bricks are losing weight due to decades of radiation but a spokeswoman for EDF said the new limit was only a "teeny little step" that was well within the most conservative safety case. In a statement, the nuclear regulator said: "ONR would not allow continued operation of any nuclear reactor unless it was safe to do so. We recognise the challenges presented by ageing of the Advanced Gas-cooled Reactor (AGR) fleet in the UK, and we continue to pay close attention to the problems associated with the graphite core of the reactors. We are satisfied that the

reactors are safe to operate." But Steve Thomas, professor of energy policy at the University of Greenwich, told the BBC: "It doesn't feel good when we come up against limits and the first thing they [the ONR] do is to move the goalposts."

Source: <http://www.theguardian.com/>, 04 June 2014.

NUCLEAR WASTE MANAGEMENT

USA

US to Miss Deadline for Removing Nuclear Waste from Los Alamos

The US Department of Energy said it would be unable to meet a deadline to remove drums of nuclear waste from Los Alamos National Laboratory in New Mexico because of safety concerns tied to the radiological materials. New Mexico officials asked federal officials to remove 3,706 cubic meters of waste from a mesa on the Los Alamos complex, out of a concern that wildfires could reach the material. Much of that nuclear waste has been removed, and the US Department of Energy had agreed to transfer the rest of it to a Texas facility by June 30.

But those shipments have been put on hold due to concerns about the chemical stability of the mixture in the containers that have arisen since it was discovered a drum from the federal Los Alamos National Laboratory may be behind a radiological leak at a repository near Carlsbad, New Mexico.

...The backup of nuclear waste at Los Alamos has been worsened by the shutdown of the Waste Isolation Pilot Plant in Carlsbad, the only facility of its kind in the US, where material from Los Alamos had been sent.

A drum from Los Alamos is suspected in a radiation leak on 14 February 2014 at the underground repository for so-called transuranic waste, which consists of tools, rags and other debris contaminated with radioisotopes such as plutonium from US nuclear labs. Government investigators believe a chemical reaction between organic kitty litter used

as a new absorbent and nitrate salts in the radiological waste likely caused the drum to breach and eject materials onto a container nearby. ...Also officials at the Waste Isolation Pilot Plant said an ongoing investigation and cleanup tied to the Feb. 14 radiation release and an accident the week before that saw a truck catch fire would prevent the facility from setting firm deadlines for sealing off two vaults that collectively hold 368 drums of nuclear refuse from Los Alamos.

Source: <http://www.scientificamerican.com/>, 30 May 2014.



Centre for Air Power Studies

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P-284

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