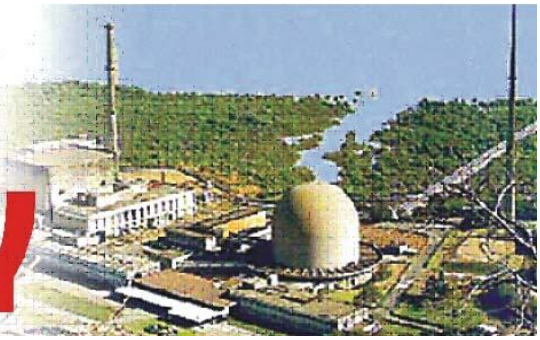
NUCLEAR SECURITY



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

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OPINION – Neeta Lal

India's Nuclear Energy Imperative

PM Narendra Modi's strong emphasis on making nuclear energy an integral part of the country's energy basket to kick start a flagging economy may well be challenged by ground realities. Energy-starved India currently relies on coal to produce two-thirds of its electricity even as – according to the World Bank – nearly 400 million Indians remain without access to power.

With demand likely to double by 2020, mainly attributable to the rapidly growing Indian middle class, already some 300 million strong, and the new government's focus on manufacturing in the economy (as encapsulated in Modi's recently launched "Make in India" campaign), India's power generation capacity may be stretched to the limit. In July this year, Modi urged the DAE to triple the country's nuclear capacity to 17 GWe by 2024. The prime minister also underscored the importance of maintaining the commercial viability and competitiveness of nuclear energy compared with other clean energy sources. Industry body FICCI has further called for an investment of more than $100 billion in nuclear power over a 25-year period.

In July this year, Modi urged the DAE to triple the country's nuclear capacity to 17 GWe by 2024. The prime minister also underscored the importance of maintaining the commercial viability and competitiveness of nuclear energy compared with other clean energy sources.

However, these ambitions need a dose of realism, given that the country's nuclear energy market (worth around $150 billion) and the nascent domestic nuclear energy infrastructure are currently unequipped to deal with the projected ramp up in demand. This was evidenced in July 2012 when an overburdened northern grid crashed in the early hours of the morning, leaving more than 600 million people across 22 states literally powerless for a whole day.

India currently has 21 operational nuclear power reactors across six states that contribute under three percent of the country's total energy generation. The government is keen to boost this to 25 percent by 2050. To realize this goal, Modi has reached out to foreign administrations. He secured Japanese Prime Minister Shinzo Abe's pledge for a nuclear agreement during a visit to Japan in August. He has also brought on board Australian

PM Tony Abbott for a deal for uranium sales to India. China's President Xi Jinping – who was in India last month – has also evinced interest in nuclear cooperation with India.

Be that as it may, critics point out that the country's regulatory climate is hardly conducive to either nuclear generation or foreign investment in the sector. And this has much to do with the fraught India-US civil nuclear agreement signed in 2005 by the George Bush administration and the Congress-led UPA dispensation helmed by Manmohan Singh.

Hailed as a "path-breaking achievement" at the time, the agreement had the US lobbying for a controversial international push to provide India access to nuclear fuel and technology for the first time in 35 years. New Delhi aimed to make private US companies – and in future private Indian companies – stakeholders in an ambitious expansion drive for nuclear power generation. A raft of new nuclear reactors were to come up with American help to whittle down the strains resulting from erratic and expensive power supply.

However, the deal's fine print ended up dampening investor enthusiasm. So much so that Russia – India's long-time ally for nuclear cooperation – refused to supply the two additional Kudankulam nuclear reactors in southern Tamil Nadu.

Under the treaty, operators are liable for a fine of up to $100 million per incident, and plant owners for up to $450 million. The agreement seeks to cap the liability for accidents to private contractors, suppliers and operators because the UPA government was reluctant for a repeat of the Bhopal gas tragedy. Dubbed "the world's worst industrial disaster," the tragedy involved a gas leak incident in 1984 in the central state of Madhya Pradesh at the Union Carbide factory. More than 500,000 people were exposed to the deadly methyl isocyanate gas and other chemicals.

Critics blame the civil nuclear liability law for doing more damage than good to India's nuclear future. Even the state-run NPCIL has gone on record to state that "no manufacturer, Indian or foreign, would be able to serve the nuclear power industry" under the provisions of this new law. The most contentious clauses of the deal, say legal specialists, are section 17 (b), which gives the operator the right of recourse against suppliers in the event of a nuclear accident, and clause 46, which states that suppliers can be sued under any other Indian law as well as by anyone.

Some of the foreign suppliers' reservations also stem from the fact that the liability law contradicts India's obligations under international law. New Delhi signed on to the Convention for Supplementary Compensatory in 2010, but hasn't been able to ratify it as the latter will mean an automatic violation of the international treaty.

"The fundamental incompatibility between India's civil liability law and international conventions limits foreign technology provision in the country," an NPCIL official told *The Diplomat* on the condition of anonymity. The law has also had ramifications for local industry, said the official, adding that more than 200 domestic companies that make reactor components (which are also subject to unlimited nuclear liability), are reluctant to supply components for state-run nuclear power plants.

Such an asphyxiating regulatory atmosphere has naturally impacted productivity. Indian nuclear power plants have been running at sub-optimal capacity for years due to a chronic shortage of nuclear fuel. Their average load factor plummeted below 60 percent over the period 2006-2010. The deficit of raw materials has had another undesirable fallout – it has foiled NPCIL's plans to build 16 new power plants across the country in the 12th five-year plan.

"The law bucks international norms by making suppliers potentially liable for nuclear accidents. Given this handicap, how can any foreign or Indian energy company ever be enthusiastic about making a foray into the Indian civil nuclear market?" questions energy expert Dr. Shanti Prasad... . Prasad advocates a redrafting of the "tardy legislation" that is not only depriving the country of clean fuel but also choking economic growth. "It creates stifling conditions for the suppliers while damaging the credibility of Indian nuclear manufacturers. It also deters other stakeholders

like the domestic nuclear industry suppliers and manufacturers."

Foreign minister Sushma Swaraj said at her first press conference that the new government will not be eschewing the supplier liability clause. "We (BJP) put it there, we are not going to change it," she said. Be that as it may, businesses are hopeful that reform-minded Modi will amend this restrictive legislation to accelerate nuclear energy production. A sliver of hope is emerging with the government announcing last month that it will amend the law to allow private companies to be involved in nuclear power generation and possibly other aspects of the fuel cycle. Following the announcement, Reliance Power Ltd, GVK Power & Infrastructure Ltd and GMR Energy Ltd are reported to be in discussion with overseas nuclear vendors including Areva, GE-Hitachi, Westinghouse and Atomstroyexport.

A sliver of hope is emerging with the government announcing last month that it will amend the law to allow private companies to be involved in nuclear power generation and possibly other aspects of the fuel cycle. Following the announcement, Reliance Power Ltd, GVK Power & Infrastructure Ltd and GMR Energy Ltd are reported to be in discussion with overseas nuclear vendors including Areva, GE-Hitachi, Westinghouse and Atomstroyexport.

Experts are unanimous that India urgently needs a new legislation, one that unambiguously spells out the liability involved in building and running a nuclear reactor in India. "The choice is clear – either we amend the law or jettison our plans to make nuclear power a major component of our energy profile," K. Ramanathan told *The Diplomat*

According to Ramanathan, India's gargantuan energy requirements necessitate an inclusive approach to harness all forms of energy to produce power. "We can't afford to be choosers. A judicious mix of fuels in the country's energy portfolio is pivotal to powering India's growth story. This is also necessary because renewable energy – especially wind and solar – remain largely seasonal options. This is compounded by the fact that India has very little storage capacity to store such power for future use," adds the expert. An urgent focus on nuclear energy generation is thus the need of the hour for Asia's third largest economy. Without it, the day will soon come when crises akin to the one that struck in July 2012 become part of the country's daily narrative.

Source: http://thediplomat.com, 08 October 2014.

OPINION – Eric R. Mandel

US-Iran Nuclear Negotiations

As the November 24, 2014 deadline for a final deal approaches, it is important to be able to decipher what the US administration offers Iran. Will it be a decisive setback, or a great victory for Iran's nuclear aspirations? President Obama, Secretary of State, John Kerry and chief US negotiator Wendy Sherman have repeatedly said that they will not sign a bad nuclear deal with Iran. If only this were true.

Unfortunately, politics has entered the equation of a decision that is vital to American national security. The clear political goal is to give Obama a much-needed "win" in Middle East foreign policy, where disastrous choices (which he controlled) and events (at least some of which he did not control) have created a Middle East that threatens American national security more today than in 2009, when the president began his outreach to the Muslim world.

During my recent meetings with advisors close to PM Binyamin Netanyahu, everyone reminded me that Iran is still Israel's main existential threat. But this is not just Israel's problem. Eric Edelman, Dennis Ross and Ray Takeyh from the Center for Strategic and Budgetary Assessments, The Washington Institute and Council and Foreign Relations respectively, agree. They opined in *The Washington Post*: "The war on terrorism should not be allowed to conceal the fact that the theocratic Iranian regime and its attempt to upend the regional order remains the United States' most

consequential long-term challenge in the Middle East."

While the administration creatively is trying to ensure that Iran is significantly delayed in its quest for nuclear weapons, Iranian hegemonic aspirations depend on being perceived as a threshold nuclear power that can realize its nuclear program at any time. Ayatollah Khamenei believes that Iran has improved its negotiating position relative to the US because of their shared interest in defeating the IS. He perceives Secretary of State Kerry's repeated outreach to Iran for help in defeating IS as a weakness he can leverage to soften American demands.

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To gain insight into the negotiations, I spoke to Mark Dubowitz, executive director of the Foundation for the Defense of Democracies. He confirmed that the US negotiating position has been eroded from 2013. We have gone from "dismantling and disclosing, to disconnecting and deferring," he said. Dubowitz said, in 2013, the US proposal was to "stop 20% enrichment, ship nuclear material out, and shut key facilities" like Fordow and Arak. We also were insisting that Iran come clean on its past weaponization activities. "Now we are proposing only technical fixes" without shutting down these nuclear facilities and deferring the resolution of the possible military dimensions of Iran's program until after a deal is signed…. As the November 24, 2014 deadline approaches, here is a short primer to decode the rhetoric of the American-Iranian nuclear negotiations:

1. Is there any "safe" level of uranium enrichment for Iran? Ideally, Iran should have no enrichment or reprocessing capabilities, and therefore pose no risk of breakout. Some experts say that Iran's breakout time should be at least 12 months to allow enough time not only for detection but also for international debate and response.

2. Did Iran ever have a right to enrich uranium? Until the JPOA (Interim Plan), Iran had no right to enrich. In fact, enrichment totally contradicted all relevant UNSC resolutions from 2003-2009, which clearly called for a freeze of enrichment. No nation, let alone the world's leading state sponsor of terror has an inalienable right to enrich.

3. How many centrifuges does Iran have now? Iran has 9,000 active centrifuges, and another 10,000 that are installed but not operating.

4. How has the US position changed on the number of centrifuges? Until the JPOA, the US followed the Security Council and demanded that Iran have no centrifuges. Then, the US offered no more than 1000 IR-1 (oldest and slowest) centrifuges. Iran balked and the US raised the number to 6,000. Iran refused again.

According to Robert Joseph, former undersecretary of state for arms control and international security, "using SWU as a substitute for limiting the number of centrifuges is nothing more than sleight of hand." If SWU is in a final deal, it will be a strong indication that Iran has won the negotiation.

5. What is SWU and why is it so important to understand? SWU's are a "creative" way to bypass Iran's objection to counting its centrifuges. It is a Trojan horse that makes a future Iranian breakout nearly unstoppable. According to Robert Joseph, former undersecretary of state for arms control and international security, "using SWU as a substitute for limiting the number of centrifuges is nothing more than sleight of hand." If SWU is in a final deal, it will be a strong indication that Iran has won the negotiation.

Source: http://www.jpost.com/, 04 October 2014.

OPINION – Ramesh Thakur

India's Illusionary Nuclear Gains

In May 1998, India conducted five nuclear tests. Even if one were to concede the tests were understandable, the question arises: What did India gain? The short answer, contrary to facile

claims of strategic, military or political utility, and cost-effectiveness is: not much. Unilateral nuclear disarmament is unlikely by any of the nuclear-armed states, including India, and is thus unrealistic as a policy goal.

However, a denuclearized world that includes the destruction of India's nuclear stockpile would favorably affect the balance of India's security and other interests like development and social welfare, national and international interests, and material interests and value goals. Although prospects for nuclear disarmament look dim, especially after the Ukraine crisis, the goal of an eventually denuclearized world is both necessary and feasible. For nuclear peace to hold, deterrence and fail-safe mechanisms must work every single time.

For nuclear Armageddon, deterrence or fail-safe mechanisms need to break down only once. This is not a comforting equation. As long as any one country has nuclear weapons, others will want them. As long as nuclear weapons exist, they will be used again someday by design, miscalculation, rogue launch, human error or system malfunction. And any nuclear war fought by any set of nuclear-armed states could be catastrophic for the whole world.

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Nuclear weapons may be sought for (1) compellence, (2) defense, (3) deterrence and/or (4) status.

"Compellence" means the use of coercion to force an adversary to stop or reverse something already being done, or to do something he would not otherwise do. There is no demonstrable instance of a non-nuclear state having been cowed into changing its behavior by the threat of being bombed with nuclear weapons. Indian doctrine, backed by deployment patterns, explicitly eschews any intent to use nuclear weapons as tools of coercion.

It is hard to see any role for India's nuclear armaments as instruments of defense. India's no-first-use doctrine disavows use of nuclear weapons in response to conventional attacks. Nuclear weapons cannot be used for defense by nuclear-armed rivals whose mutual vulnerability to second-strike retaliatory capability guarantees that any escalation through the nuclear threshold would be mutual national suicide.

India's nuclear arsenal offers no defense against a major conventional attack by China, Russia or the US – the only three countries with the *capability* to do so. As for *intent*, Russia is a diplomatic ally and friend of long standing. Relations with the US have warmed to a remarkable degree, including a just concluded high-profile visit by PM Narendra Modi, which was remarkable for the fact that a person denied a US visa from 2005 until May 2014 was hosted to a state dinner by President Obama.

With nuclear weapons being unusable for defense, their sole operational purpose and role is mutual deterrence. Deterrence stability depends on rational decision-makers being always in office on all sides: a shaky precondition. It depends equally critically on there being no rogue launch, human error or system malfunction: an impossibly high bar.

Deepening and broadening bilateral Sino-Indian relations, and cooperation on several major international issues based on converging interests in forums like the group of BRICS, provide considerable substance, texture and ballast to that relationship today. During his recent visit, Chinese President Xi Jinping signed agreements to invest $20 bn to upgrade India's woeful infrastructure.

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To believe in deterrence is to argue that Iran should be encouraged, indeed facilitated in getting the bomb in order to contribute to the peace and stability of the Middle East where presently Israel is the only nuclear-armed state. Good luck and good night. The subcontinent's history since 1998 gives the lie to the then-hopes and expectations, on both sides of the border, that nuclearization would prove to be a largely stabilizing factor.

Powerful domestic constituencies have grown in both countries to identify multiple threats that justify a matching expansion of a highly elastic nuclear posture. The low-cost, low-risk covert war in the shadow of the subcontinent's nuclearization had three attractions for Pakistan: It would weaken India by raising the human and economic costs of Kashmir's occupation; the fear of nuclear escalation would raise the threshold for cross-border Indian retaliatory raids; and it would help internationalize the Kashmir dispute by highlighting the risk of nuclear escalation.

Pakistan has invested in terrorist groups as part of its unconventional inventory against India. In responding to a terrorist attack, any deliberate escalation by India through the nuclear threshold would be extremely high-risk. The development of tactical missiles and battlefield nuclear weapons by the two sides, whose utility is contingent on proximity to battlefields, multiply the risks. India must also live with the nightmare possibility of jihadists getting their hands on Pakistan's nuclear weapons. While obviously more acute for Pakistan, the threat is grave for India also.

Just what is a "credible minimum deterrent" – India's official doctrine – that would dissuade nuclear blackmail and coercion and permit second-strike nuclear retaliation? China and Pakistan are incommensurate in their national power, strategic frames and military capabilities. The requirements of numbers, reach, deployment patterns and locations, and the distribution between land-based, air-launched and sea-borne platforms, are as mutually incompatible between them. That which is credible toward China cannot be the minimum toward Pakistan, and vice versa.

India does have a higher international profile today than in 1998. This is despite, not because of, nuclear weapons, and rests in its economic performance and information technology credentials. No serious Indian analyst is likely to claim that Pakistan's profile has risen alongside India's since 1998, despite Islamabad's more focused efforts on expanding, deepening and broadening its nuclear weapons capability.

Few analysts would take issue with the claim that currently non-nuclear-armed Germany has a higher status, weight and clout in Europe and the world than nuclear-armed Britain and France. Nuclear brinkmanship earns North Korea neither prestige, power nor friends; non-nuclear-armed South Korea fares better on all three counts.

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If India's economy stutters, its social pathologies intensify and multiply and its political system proves incapable of making and implementing hard decisions. The fact that India has nuclear weapons will add to international unease and worries rather than enhance its global stature and international prestige. If India's economic future is mortgaged to bad governance rooted in populist politics pursued by corrupt politicians, other countries will return India to the basket of benign neglect while offering ritual but empty praise for

its rich civilization and culture. PM Modi at least seems to get this.

Source: http://www.japantimes.co.jp/, 06 October 2014.

OPINION – Douglas Roche

Nuclear Weapons Policy Incoherent

Have the televised killings in the Middle East, Ukraine, Syria and Iraq made it impossible to focus attention on the 16,300 nuclear weapons still in existence, any one of which – by design, accident or terrorism – could set off a catastrophe of epic proportions? Global instability is not a time to back away from the UN goal of a nuclear weapons-free world. When barbarism breaks out, it is time to redouble our efforts to develop a law to eliminate nuclear weapons. Three events show disarmament is still very much on the international agenda.

The first UN Day for the Total Elimination of Nuclear Weapons – September 26 – now provides a built-in mechanism focused on promoting multilateral negotiations for a nuclear weapons convention – a global treaty to prohibit and eliminate nuclear weapons.

The first UN Day for the Total Elimination of Nuclear Weapons – September 26 – now provides a built-in mechanism focused on promoting multilateral negotiations for a nuclear weapons convention – a global treaty to prohibit and eliminate nuclear weapons. On December 8-9, 2014 the Austrian government will host in Vienna the third in a series of international conferences on the "catastrophic humanitarian consequences" of nuclear weapons. Earlier meetings have spelled out in excruciating detail the horrors that await humanity in the accidental or deliberate use of nuclear weapons.

US – Russia bilateral negotiations for deeper cuts are stalled over such issues as the US's proposed missile defence system in Europe, the militarization of space and the US intention to militarily dominate air, land, sea, space and cyber-warfare. The CD in Geneva has become a ritualistic facade.

In May, 2015 in New York, the NPT will undergo its month-long quinquennial Review Conference, where the good-faith pledge of the five permanent members of the Security Council (the principal nuclear weapons states) to negotiate the elimination of their nuclear arsenals will again be tested. Since the NPT came into existence in 1970, the big five have been bobbing and weaving on their commitments, all the while modernizing their stocks. Nuclear disarmament is not something that culminates the peace process, it stimulates it. A terrorist nuclear attack is an undeniable possibility. Comprehensive negotiations must lead to a legal framework for the verified, irreversible, and enforceable elimination of nuclear weapons.

But the nuclear weapons states, aided principally by NATO, are holding out for a step-by-step approach: First, get a ban on the production of fissile materials, bring the CTBT into force, get more US-Russian reductions before attempting global negotiations. This approach, which has been embraced by Canada, has led to today's virtual paralysis. US–Russia bilateral negotiations for deeper cuts are stalled over such issues as the US's proposed missile defence system in Europe, the militarization of space and the US intention to militarily dominate air, land, sea, space and cyber-warfare. The CD in Geneva has become a ritualistic facade.

Canada participates in the 12-nation Non-Proliferation and Disarmament Initiative, which sees multilateral negotiations taking place only after the US-Russia reduction process has greatly reduced existing stocks. But this is a dead-end hope. This is why nations like Mexico, Norway, Austria, Switzerland and Indonesia are in the forefront of a new movement, emphasizing humanitarian law, to create a legally binding instrument to ban nuclear weapons. This is the movement Canada should join.

A chief impediment to such action is Canada's membership in NATO, which keeps insisting that nuclear weapons are the "supreme guarantee" of security. However, a double standard has deeply conflicted NATO: While member states reaffirm their commitment to the NPT, NATO remains dependent on nuclear weapons. The continued deployment of US tactical nuclear bombs on the soil of Belgium, Germany, the Netherlands, Italy and Turkey, though resisted by growing numbers of people in those countries, is a standing provocation to Russia, which is consequently disinclined to lower its own huge numbers of tactical nuclear weapons. About 15 years ago, Canada tried to get NATO to change its nuclear policies. When NATO resisted, Canada gave up. But Norway, another NATO country, is a leader in the new humanitarian movement. Why can't Canada give this effort full support?

The humanitarian movement to eliminate nuclear weapons fits in with long-held Canadian values. More than 750 members of the Order of Canada have called upon the Canadian government to take a major diplomatic initiative to support the UN Secretary-General's Five-Point Plan for Nuclear Disarmament, which centres on a nuclear weapons convention. A motion supporting this was unanimously passed by both the Senate and the House of Commons. Canada should align itself with the highly respected New Agenda Coalition countries (Brazil, Egypt, Ireland, Mexico, New Zealand and South Africa) and commit itself to achieving "a comprehensive and legally binding framework" to eliminate all nuclear weapons in a defined period. It is not NATO but the UN goals that should drive Canada's work.

Source: Author is a former MP, senator and disarmament ambassador, http://www.edmontonjournal.com/, 06 October 2014.

US nuclear weapons capability remains important for two main reasons: deterrence and counter-strike capability. An effective nuclear deterrence posture is achieved by increasing the credibility of one's nuclear posture, including tailoring weapons to threaten what adversaries value. Today's adversaries value their own survival and the tools that enable them to oppress their domestic populations and threaten their neighbors.

OPINION – Steven Smolinsky

US Nuclear Weapons Capability Still Essential

With Russia's invasion of Ukraine and the rise of terrorist groups ISIS and Khorasan in Iraq and Syria, the world clearly remains a dangerous place. The multitude of threats to the US and its allies highlight the importance of US nuclear capability, even in the post–Cold War era. US nuclear weapons capability remains important for two main reasons: deterrence and counter-strike capability. An effective nuclear deterrence posture is achieved by increasing the credibility of one's nuclear posture, including tailoring weapons to threaten what adversaries value. Today's adversaries value their own survival and the tools that enable them to oppress their domestic populations and threaten their neighbors.

According to Lieutenant General Stephen Wilson, the commander of Air Force Global Strike Command, "The US' strategic forces provide the nation a safe, secure and effective deterrent that's ready 24/7." The Air Force recently conducted unarmed cruise missile tests to gauge the operability of its nuclear weapons. The Glory Trip 211 was another test of Air Force capability, focused on ground-based intercontinental ballistic missiles and aimed at gauging the range and reliability of the missile system. It was one of nearly 200 similar missile launch tests. Major General Scott Vander Hamm stated that these tests themselves serve as part of the larger deterrence strategy, in that successful launches can serve as a warning to adversaries.

In addition to unilateral testing, the Air Force participated in Valiant Shield, a recent joint forces exercise that was intended to improve coordination

between the various branches. A key takeaway of the exercise is that "bomber rotations provide Pacific Air Forces and US Pacific Command commanders a global strike and extended deterrence capability against any potential adversary." Under Secretary of Defense for Acquisition, Technology and Logistics Frank Kendall said that the US nuclear deterrent is paramount to US security. Adequate funding needs to be appropriated for nuclear modernization.

Source: http://dailysignal.com/, 06 October 2014.

OPINION – Debalina Ghoshal

US Plans to Deploy MK.41 Launchers in Romania and Poland: Implications for INF Treaty

As the issue pertaining to violations of the INF Treaty between the US and Russia heats up, Russia is pointing its finger at the United States in its plans to deploy MK 41VLS in Romania and Poland. Under the INF treaty, both the US and Russia are prohibited from developing ground-launched cruise and ballistic missiles with ranges 500-5500km. The launch system in question is employed by US Navy warships for storing and launching naval missiles and is claimed to be the "worldwide standard in ship-borne missile launching systems."

At present, this system launches Tomahawk land-attack cruise missiles and is also reported to be able to launch SM-3 interceptors. According to the FAS, this VLS is a canister launching system "which provides a rapid-fire launch capability against hostile threats." The launch system is further reported to be capable of firing anti-air, anti-ship and anti-submarine missiles, therefore strengthening both the offensive and defensive capabilities of the US Navy. What's more, according to Lockheed Martin, the MK41 can also accommodate surface to surface missiles along with weapon control systems and missiles simultaneously. The MK 41 has already been battle tested and was used in Operation Iraqi Freedom.

At present, the plan to deploy this VLS is a part of the EPAA of the United States. However, what the Russians fear is that the US could use these launchers to fire land- based intermediate range cruise missiles, seeing that such systems have the capability of launching such a category of missile systems. That the system would be able to launch these intermediate range cruise missiles from Poland and Romania has concerned Russia as targets falling within its territory could easily be reached. Coupled with this is Russia's concern over US drones, which it claims fall under the land-based cruise missile systems category and are not allowed under the INF Treaty. Russia has also claimed that the US violated the treaty by testing missile defence target missiles which could be used to develop missiles that are prohibited by the INF.

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Allegations made by both the United States and Russia that one or the other has violated the treaty have been of recent concern when considering the possibility that either of the parties could withdraw from the treaty. Indeed, the Russians have time and again threatened to withdraw from the INF treaty. Yet in turn, Russia has also been accused of violating the INF Treaty.

In fact, according to Hans Kristensen, Russia is developing an INF category ground-launched cruise missile, the R-500, which is a replica of the submarine-launched cruise missile SS-N-21. The blame game regarding INF Treaty violations has continued and Russians have claimed that the US accusations are "ungrounded." However, if the news on Russia's cruise missile development is true, and if the

Russian concerns that the US could develop INF category cruise missiles are justified, then there could very well be a new INF cruise missile race likely to start between Russia and the United States. However, Russia is of the view that these allegations it faces are a "tendentious and provocative" effort to create a "smokescreen" and draw attention away from US's own violations of the treaty in addition to aiding in its effort to "dismantle" the "global strategic stability system."

Russia's suspicion that the US could develop intermediate range cruise missiles grows stronger as the United States continues its Prompt Global Strike program, an effort which foresees the development of conventional weapon systems that can reach any part of the globe in less than an hour. Thus, in the near future, the United States could develop intermediate range ground-launched cruise missiles and deploy them in its umbrella states. This would be a violation of the INF Treaty because even though the strategy adopted by the US in its Prompt Global Strike program relies on conventional weapons, the INF Treaty prohibits the development of even conventionally capable ground-launched missiles with ranges from 500-5500km.

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In a recent article published in *The Wall Street Journal*, John Bolton, a senior fellow at the American Enterprise Institute and John Yoo, a visiting scholar also at the AEI, had suggested that the US withdrawal from the INF Treaty and fund the development of new intermediate range weapon systems, "thereby countering Russian testing and deployment of the RS-26."

However, on September 11, 2011, both the United States and Russia discussed this key arms control treaty and pledged to abide thereby. However, according to the Russian Foreign Ministry, Russia has yet to receive a "satisfactory" response to its concerns that the United States is not true to its assurance that it will abide by the treaty. Both the United States and Russia must solve such trivial issues pertaining to violations of the agreement in order to make this nuclear arms control treaty a successful one.

Source: http://www.turkishweekly.net/, 08 October 2014.

OPINION – John LaForge

United States' H-Bomb Addiction Running to Trillion

In 2008, the Obama Administration made eye-popping headlines by announcing a 10-year, $80bn nuclear weapons development program. In 2009, Obama promised to pursue a "world without nuclear weapons," but that was then. By 2010, new warhead plans had grown to an estimated $355bn, decade-long cash cow that amounts to $1 trillion over 30 years. The colossal expense has already been generally adopted by the House and Senate in military authorization bills ....

One of three new production sites just opened – a $700mn non-nuclear parts plant run by Honeywell in Kansas City, Missouri. The other factories include a uranium fabrication complex at the Y-12 site in Oak Ridge, Tennessee; and a plutonium processing works at Los Alamos National Laboratory in New Mexico. The latter two programs have run up such enormous cost increases that even the White House has blinked.

Plans for LANL's plutonium production – originally expected to cost $660mn – expanded into a $5.8bn golden goose. The project was suspended in 2012, and engineers went to work at cost cutting. At Oak Ridge, the uranium processing "canyon" rocketed from a $6.5 billion proposal to a $19 billion war contractor's wet dream. The White House halted the scheme this year, and the lab is reworking plans for fixing its 60-year long nuclear meth habit.

New H-bomb production is advertised as "revitalization", "modernization", "refurbishment" and "improvements". The buzz words are used by corporate weapons contractors and their congressional lapdogs who speak of the "40-year-old submarine warhead" (known as the W-76), or who feign concern over "fires, explosions and workplace injuries" that are "deplorable" because the equipment "breaks down on a daily basis", the Times reported.

The [US] military currently deploys almost 5,000 nuclear warheads – on submarines, land-based missiles, and heavy bombers. This, even though Pentagon Chief Chuck Hagel signed a report (before he was appointed to his current job) that found that only 900 nuclear warheads were "necessary.

The War System always neglects to mention that 15,000 plutonium warheads are currently maintained at Pantex, Texas and are good for 50 years, according to *The Guardian*, September 29, 2014. The trillion dollar nuclear bomb building plan is to produce up to 80 new warheads every year by 2030. The [US] military currently deploys almost 5,000 nuclear warheads – on submarines, land-based missiles, and heavy bombers. This, even though Pentagon Chief Chuck Hagel signed a report (before he was appointed to his current job) that found that only 900 nuclear warheads were "necessary." Hagel's report recommended abolishing 3,500 warheads now in ready reserve, saying warhead numbers are much larger than required.

The [US] Air Force's $44 billion plans for a new nuclear bomber called the Long-Range Strike Bomber Program (LRS-B). The Air Force reportedly wants 80-100 of them at roughly $550 apiece.

Independent observers, watch dogs and think tanks have argued for decades that the arsenal can be drastically reduced and made less dangerous: a) by not replacing retired warheads; b) by taking deployed warheads off "alert"; and c) by separating warheads from missiles and bombs. This separation would lengthen warning-to-launch times, thus easing international tensions and ending the terrifying likelihood of accidental or unauthorized launches.

Greg Mello of the Los Alamos Study Group, which bird dogs the Cold War lab, says the reason new H-bomb production is being considered at all is simply private greed. For-profit corporations now run all the government's nuclear weapons labs, ever since they were privatized in 2006. Mello says, "The nuclear weapons labs are sized for the Cold War, and they need a Cold War to keep that size."

... Jay Coghlan, of Nuclear Watch New Mexico, was shocked by the President's double talk, telling the Guardian, "Obama's proposed 2015 budget is the highest ever for nuclear weapons research and production. And at the same time, they're cutting non-proliferation budgets to pay for it." The $1 trillion doesn't include a few hundred billion more for new nuclear war-fighting systems like: The $80 billion cost of building 12 new ballistic missile submarines to replace the Navy's Trident fleet. Sen. Richard Blumenthall, D-CT, told the *New London Day on* Sept. 23, "The essence here is this boat will be the strongest, stealthiest, most sustainable of any in the history of the word." "Sustainable"? Well yes; like bankruptcy or suicide.

The [US] Air Force's $44 billion plans for a new nuclear bomber called the Long-Range Strike Bomber Program (LRS-B). The Air Force reportedly wants 80-100 of them at roughly $550 apiece. The chilling rationale for these billions was provided by Lt. Gen. Stephen Wilson, Chief of Global Strike Command, who said Sept. 16 at in Washington DC, "It will be essential as we move forward to have a bomber force that can penetrate any place on the globe and hold any target on the planet at risk." The planned replacement of 450 Minuteman 3 ICBMs known as the "Ground-Based Strategic Deterrent" set to be deployed in existing silos after 2030 that a RAND study said would cost between $84 and $219 billion.

Source: *http://www.truth-out.org/, 08 October 2014.*

NUCLEAR STRATEGY

CHINA

China Test Fires 10,000-km Range Nuclear Missile

China has flight tested an upgraded version of its 10,000-km range DF missile which can reach most of the US and European cities, demonstrating its nuclear capability…. PLA launched a Dongfeng-31B on September 25, 2014 days before its October 1 National Day from the Wuzhai Missile and Space Test Centre, also called Taiyuan Satellite Launch Centre in Shanxi province….

The DF-31B is an upgraded version of the DF-31A and the launch was at least the second time the PLA's Second Artillery Corps had tested a DF-31 missile in the past three months. In late July, 2014 the PLA conducted a flight test of a DF-31A in what was the fourth known flight test of that missile in two years….The mobile missiles are designed specifically for travel over rugged terrain and in difficult road conditions.

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Xu Guangyu, a Beijing-based retired PLA major general said the strategic aim of the test is "Beijing just wants to increase China's military might and its nuclear strategic threat. It's not really targeting the US or other countries". "China needs to conduct intensive weapons tests and military drills because the (US-led build-up) now in the Asia-Pacific area is not good for Beijing," he told. Earlier state media reports said Beijing would roll out the Dongfeng-41, a system designed to have a range of 12,000km, allowing it to hit targets anywhere in the US. Xu said the US' "pivot to Asia" and its plan to send 60% of its military force to the region by 2020 had put pressure on Beijing to step up missile development. …

Source: http://timesofindia.indiatimes.com/, 04 October 2014.

RUSSIA

Russia Deploying Tactical Nuclear Arms in Crimea

Russia is moving tactical nuclear weapons systems into recently-annexed Crimea while the Obama administration is backing informal talks aimed at cutting U.S. tactical nuclear deployments in Europe. Three senior House Republican leaders wrote to President Obama two weeks ago warning that Moscow will deploy nuclear missiles and bombers armed with long-range air launched cruise missiles into occupied Ukrainian territory.

… Regarding the nuclear deployments to Crimea, Senate Armed Services Committee ranking member James Inhofe (R., Okla.) first disclosed last month that Putin had announced in August his approval of deploying nuclear-capable Iskander-M short-range missiles along with Tu-22 nuclear-capable bombers in Crimea, located on the Black Sea.

… "The stationing of new nuclear forces on the Crimean peninsula, Ukrainian territory Russia annexed in March, is both a new and menacing threat to the security of Europe and also a clear message from Putin that he intends to continue to violate the territorial integrity of his neighbors," Inhofe stated in a Sept. 8 op-ed in *Foreign Policy*. The action "further undermines Russian credibility in terms of the Budapest Memorandum that the Russian Federation signed in 1994," the congressmen said. The memorandum promised Ukraine would have security assurances against threats or use of force in exchange for Kiev giving up its Soviet-era nuclear weapons – at the time the third largest arsenal in the world.

… The United States is believed to have around 200 nuclear weapons in Europe. Russia's tactical nuclear arsenal is at least 2,000. "NATO politics

will prevent any cuts in US tactical nuclear weapons in Europe" …. "This is obviously about the worst possible time to talk about something like this." Schneider said nuclear policymakers should focus on deterrence now instead of disarmament. A Russian Defense Ministry spokesman told state-run Interfax March 26 that a "missile-carrying regiment" of Tu-22 Backfire nuclear bombers will be deployed to the Crimean airbase at Gvardeyskoye within two years. IHS *Jane's Defence Weekly* described the nuclear-capable Tu-22s to be based in Crimea as "the backbone of Soviet naval strike units during the Cold War." Rogers, the strategic forces subcommittee chairman, said Sept. 18 that the Russians have discussed "plans to station tactical nuclear weapons in Crimea."

Source: Bill Gertz, http://freebeacon.com, 10 October 2014.

BALLISTIC MISSILE DEFENCE

INDIA

Rafael Agrees Indian Missile Deal

Rafael Advanced Defense Systems Ltd. will provide the Indian Navy with hundreds of Barak-1 missiles over the next 18 months in a deal worth $143 million. India's Ministry of Defense approved the procurement in recent days in part because naval commanders have warned of a grave shortage of such missiles in the Indian Navy's inventory. The Barak-1 is an anti-missile defense system, and the Indian Navy is reportedly down to its last 150 such missiles.

The Indian government has decided to procure more than 260 Barak-1 missiles, which are manufactured by Rafael in collaboration with Israel Aerospace Industries Ltd. (IAI) and its Elta Industries division. IAI produces the command and control systems for the missile while Elta has developed the radar.

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There was a long period of discussions before the Indian government made its final decision about procuring the missiles due to enquiries into a bribery scandal involving defense manufacturers from other countries. Rafael and IAI were eventually cleared of any wrongdoing and the Barak-1 missile deal was given the go-ahead. The Barak-1 missile was developed in the 1990s and with a range of 9-10 kilometers serves as the main defense missile for the Israel Navy. India is also a major partner of Israeli defense manufacturers in plans to develop a more advanced version of the Barak-1 missile the Barak-8. The agreement to develop the Barak-8 was signed four years ago and when development is complete, the Indian Navy will be equipped with hundreds of these innovative missiles in a deal worth $1.4 bn.

Source: http://www.globes.co.il/, 29 September 2014.

We firmly support the creation of this (missile shield) system as a pan-NATO one because only this makes deep sense both politically and in terms of defence," Poland's President Bronislaw Komorowski said at a joint press conference with NATO Secretary General Jens Stoltenberg.

POLAND

Poland Urges NATO to Push Ahead with Missile Shield

Poland on the October 6, 2014 urged NATO's new secretary general to push ahead with a missile shield system amid the West's worst standoff with Russia since the Cold War. "We firmly support the creation of this (missile shield) system as a pan-NATO one because only this makes deep sense both politically and in terms of defence," Poland's President Bronislaw Komorowski said at a joint press conference with NATO Secretary General Jens Stoltenberg.

"Poland is determined to build its missile shield and air defence system - it's important not only for Poland - and we uphold our obligations for the US portion of this project," Komorowski said. Stoltenberg, who chose Warsaw for his first foreign visit, said Poland "was a key contributor to our missile defence system." The new NATO chief said in the first week of October that Russia must reverse course in Ukraine but stressed that the alliance remains ready to have a constructive relationship with Moscow. Poland said in 2013 it would spend 33.6bn euros ($43.3 bn) to set up its own missile shield. NATO's 28 members decided in 2010 to create a missile shield based on US technology. The project is due to be completed in 2020, with significant elements in Romania and Poland.

The Western defence alliance insists the role of the planned shield is a "purely defensive" response to external threats, notably from so-called "rogue states," and is in no way directed against Russia. But Moscow has taken a dim view of the project, seeing it as a security threat on its very doorstep. ...

Source: http://www.dailystar.com.lb/, 06 October 2014.

RUSSIA

Russia to Create Space-Based Ballistic Missile Warning System

Russia will create a space-based ballistic missile warning system capable of detecting launches of existing and test missiles, Russian Defense Minister Sergei Shoigu said on October 8, 2014. "The creation of an integrated space system is one of the key directions in which Russian nuclear deterrent forces will be developed. As a result, we will be able to detect sea and ground launches of various types of ballistic missiles, including prototypes," Shoigu said. According to the defense minister, the system will replace Soviet-made ballistic missile early warning systems. The integrated space system will comprise next-generation space vehicles and modernized space centers that would ensure control over the satellites and allow for automatic information processing.

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Source: http://en.ria.ru/, 09 October 2014.

SAUDI ARABIA

Saudi Arabia Seeks Billion-Dollar Air Defense Deal

More than 200 Patriot Air Defense Systems with PAC-3 enhancement may be sold to Saudi Arabia under the US Foreign Military Sales program. The US Defense Security Cooperation Agency, which acts as the middle man for FMS deals, said in its required notification to Congress the possible deal carries a value of $1.750 billion. ...

The Saudi shopping list is for 202 Patriot Advanced Capability-3 missiles with containers, PAC-3 telemetry kits, fire solution computers and launcher station modification kits. Also included are missile round trainers, Patriot automated logistics systems kits, spare and repair parts and ground support equipment. Technical and logistics support services and other related elements of logistics and program support would also be part of the deal. ... The principal contractors would be Lockheed Martin Missiles and Fire Control and Raytheon.

Source: Excerpted from article by Richard Tomkins, http://www.spacedaily.com, 02 October 2014.

NUCLEAR ENERGY

BRITAIN

EU Approves Plan for New Nuclear Power Station in Britain

The European authorities on October 8, 2014 approved construction of Britain's first nuclear power station since the mid-1990s, in a ruling that could clear the way for other European countries to plan nuclear plants as part of their energy future. The decision, by the EU's competition regulator, removes one of the final obstacles for

the plant, at Hinkley Point in southwest England, which would produce about 7% of Britain's current power supply but would not start operating before 2023.

Although the British government had already approved the power station, Brussels needed to sign off to make sure the financing plan did not constitute unfair state aid. The plant would be built by EDF Energy, the British subsidiary of the French state-controlled utility, which already operates nearly all the nuclear power plants in Britain. EDF said the plants would cost 16bn pounds, or $25.7bn, at 2012 prices.

EDF has spent more than 1bn pounds on design work and preparation for the site, which overlooks the Severn Estuary. Under the arrangement, a government-guaranteed rate for the power eventually generated from the plant is guaranteed to give EDF a return on its investment. Policy makers and energy executives elsewhere are closely watching Hinkley Point as a test case of whether new nuclear plants can be built in the West given the high costs and the environmental risks. While valued by proponents as a cleaner-energy alternative to carbon-fueled power plants, the radioactive risks of nuclear power were vividly illustrated by the Fukushima disaster in Japan in 2011, an event that helped prompt Germany's decision to abandon all future plans for nuclear power stations.

The Hinkley Point project is running years behind schedule, with mounting costs. Centrica, a British utility, walked away last year from its 20% share in the project, citing frustration over delays and costs. To share in the costs, EDF has said it wants to bring in two Chinese state-backed companies, the China General Nuclear Corporation and the China National Nuclear Corporation, and, potentially, other investors. The British government is nonetheless pressing on with the project, as it worries about future sources of energy. Britain's current nuclear plants, which generate around 20 percent of the country's electricity, are approaching the ends of their lives. Meanwhile, the country's North Sea oil and natural gas reserves are dwindling, and coal-fired plants are being retired to reduce carbon emissions.

Britain's determination to go ahead with a new nuclear power station at a large cost accentuates the divisions that are opening among European countries over nuclear power. The government wants to build not only Hinkley Point but also several more plants to replace its aging collection of nuclear reactors. Meanwhile, Germany is easing out of the nuclear power business, forcing utilities to rely more on highly polluting coal to generate the kind of steady flows of electricity that cannot yet be supplied by renewable energy sources like solar and wind.

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Despite the problems, other nuclear providers from around the world are eyeing Britain as a potential market. Toshiba and Hitachi of Japan have been studying British projects, while EDF is also contemplating building another plant on Britain's east coast at Sizewell. But how many new plants will be built in Britain or other European countries now considering such a move – including Hungary, Lithuania and Poland – remains a big question. A few countries voted against the decision. That includes Austria, which opposes the use of nuclear power and is threatening to go to court to try to block Hinkley Point. Of the main European economies, only France has long remained committed to nuclear power....

The specter of future power outages and the pressures to meet climate change goals have pushed the British government to intervene once again in a power sector that was privatized decades ago. The government, which also built all of Britain's nuclear plants in the past, is now getting actively involved in the energy business, offering generous subsidies not only for nuclear power but also for renewable energy installations

like giant offshore wind and even projects using tidal power.

... Analysts say that there was tremendous pressure on the European regulators to approve the deal because two big players in the 28 nation group, Britain and France, were behind it and because the British government portrayed the power station as necessary to keep the lights on – not to mention creating around 25,000 jobs during the decade-long construction phase....

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Source: http://www.nytimes.com/, 08 October 2014.

CHINA

China should Develop Nuclear Power Sector Inland, Says Government Researcher

China should expand its nuclear power sector to ease fossil fuel dependence and fight pollution, and in particular it should expand into interior regions, away from current coastal bases, a top government researcher said on September 30, 2014. Zhou Dadi, former chief of the Energy Research Institute, a think tank linked to the National Development and Reform Commission, said nuclear remained a crucial part of China's plans and, despite public opposition, it needed to plough ahead. ...

It is the world's largest market for new reactors and the operator of 21 reactors with a combined capacity of 17.8 GW. But it has scaled back its 2020 capacity target to about 58 GW from 80-100 GW and experts say it might struggle to reach even that, with many projects delayed.

China suspended its nuclear programme for a period after Japan's Fukushima disaster in 2011. It resumed the approval process for new plants in late 2012 following a safety probe that lasted more than a year. It is the world's largest market for new reactors and the operator of 21 reactors with a combined capacity of 17.8 GW. But it has scaled back its 2020 capacity target to about 58 GW from 80-100 GW and experts say it might struggle to reach even that, with many projects delayed.

The world's first AP1000 reactor, designed by US-based Westinghouse, part of Japan's Toshiba group, and originally due to be completed in 2013, has been put back until at least the end of 2015. All of China's reactors are located on the eastern coast, and projects in inland provinces such as Sichuan and Hubei are unlikely to be approved in the near term, with the public worried about safety, especially in earthquake-prone regions.

But Zhou said that for inland provinces short of other clean energy sources such as wind or solar, nuclear was a better alternative than importing more oil or burning more coal, a major source of air pollution and climate-changing greenhouse gases. According to Zhou, "To address popular concerns of safety and technical security about nuclear power, China can develop the sector in two steps – first along the coast and then move to the interior." Citing a research report by the China Academy of Engineering, Zhou said China should aim for 200 GW of nuclear capacity by 2030 and 400-500 GW for 2050. Energy consultants Wood Mackenzie said in April that China would only reach 175 GW by 2030 and that would mean additional demand of 55 million tons of coal by that year. ...

Source: http://articles.economictimes.indiatimes.com/, 30 September 2014.

FRANCE

France to Weigh Costs of Maintaining Older Plants in Nuclear Policy

France's energy minister said on October 5, 2014 that the cost of maintaining older reactors would be factored into any decision on the future size of size of its large and aging nuclear power fleet. The government already plans to shut the

Fessenheim plant on the German border as part of a pledge to bring down atomic energy to 50% of French power output by 2025 from the current 75%, the highest share in the world. But it has skirted the issue of whether to extend the operating life of its 58 nuclear reactors, which state-owned utility would like to prolong from 40 years to up to 60 years.

...France, like other European countries, faces rising costs to maintain a nuclear fleet with an average age of about 30 years. EDF has estimated that extending the life of the plants would cost 55 billion euros. About half of its reactors are due to reach the current 40-year limit during the 2020s. French nuclear watchdog ASN has said it will give an initial opinion on the issue in 2015. Energy Minister, Royal is steering through parliament an energy transition bill that introduces a cap on nuclear power production, which would force EDF to close an equivalent capacity when it launches the 1,600 megawatt Flamanville reactor, due in 2016....

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Source: http://uk.reuters.com/, 05 October 2014.

KAZAKHSTAN

Kazakhstan Banking on Nuclear to Fuel Growth, Says Think-Tank

Kazakhstan's leadership believes development of nuclear energy will fuel the country's economic growth and stimulate high-tech industrialisation, a report published by a Washington-based think-tank concludes. The report, by the Carnegie Endowment for International Peace, says the Kazakhstan government expects that 4.5% of all electricity will come from a nuclear source by 2030.

Kazakhstan is the only country in Central Asia that has made a firm commitment to developing nuclear energy. It is also likely to host an international low-enriched uranium bank, construction of which could begin in 2015. The IAEA has held a number of meetings with Kazakhstan to negotiate the host state agreement and supporting technical agreements for the project. The likely site of the bank is the Ulba Metallurgy Plant in Ust-Kamenogorsk, which produces low-enriched uranium and, as a result, has experience in storing the fuel, the report says.

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But the Carnegie report notes that like any country choosing nuclear power, Kazakhstan will face a number of universal challenges. Key among them are financing, nuclear safety, nuclear security and non-proliferation, and spent fuel management. ... Domestically, Kazakhstan will need to approach the development of nuclear energy with extreme care. The economic, technological, and energy security benefits of nuclear power should not take attention away from inherent challenges that nuclear energy development presents for newcomers. Nuclear security and safety, even stronger non-proliferation measures, required financial investment, and spent fuel and waste management require serious consideration, the report says.

Kazakhstan's "exemplary" non-proliferation record reduces any concerns that there might be an authorised misuse of nuclear technology for non-peaceful purposes. However, since nuclear technology is inherently dual-use, Kazakhstan will need to invest additional efforts into ensuring that the risk of unauthorised diversion of any nuclear material and nuclear technology in its possession is minimised. ...

Source: http://www.nucnet.org/, 07 October 2014.

RUSSIA

Russia to Launch Development of Small, Medium-Capacity Nuclear Power Units

Russia's state-run nuclear corporation Rosatom is launching a program on the development of nuclear power units of small and medium-level capacity, Rosatom's deputy director, Vyacheslav Pershukov, said on October 7, 2014. "A fundamental decision was made – we are starting to engage in these activities," Pershukov said, speaking at the "Innovative Projects and Nuclear Energy Technology" international conference.

Rosatom's program is "an important step" in the Russian nuclear power industry, which will open new market opportunities and lead to the development of new technologies.

According to Pershukov, Rosatom's program is "an important step" in the Russian nuclear power industry, which will open new market opportunities and lead to the development of new technologies. Earlier, head of Rosatom Sergey Kiriyenko said that the state corporation intends to accelerate the work on the creation of small and medium-capacity nuclear power reactors, which will allow Russia to secure firm positions on foreign markets. Under the new program, Rosatom plans to put the first medium-level capacity unit into operation before 2025. The need for nuclear power units of small and medium capacity exists in regions with poorly developed infrastructure networks and in remote areas, where fuel supplies are hard to establish.

Carlson notes that the civil nuclear cooperation agreement signed by Australia and India in September, 2014 contains "substantial departures from Australia's currentsafeguards conditions" which suggest "that Australia may be unable to keep track of what happens to uranium supplied to India.

Source: http://en.ria.ru/, 07 October 2014.

NUCLEAR COOPERATION

AUSTRALIA–INDIA

Australia's Uranium Agreement with India under Attack

The federal government's plan to permit uranium sales to India has been subjected to a strong critique by the former Director-General of the Australian Safeguards and Non-Proliferation Office, John Carlson. Others to have raised concerns include former Defence Department Secretary Paul Barratt, and Ron Walker, former Chair of the IAEA Board of Governors. Carlson notes that the civil nuclear cooperation agreement signed by Australia and India in September, 2014 contains "substantial departures from Australia's current safeguards conditions" which suggest "that Australia may be unable to keep track of what happens to uranium supplied to India."

The failure to provide regular reports "will also expose the agreement to potential legal challenge under the 1987 Safeguards Act", Carlson writes. (Another problem, not mentioned, is that nuclear material could be diverted and reports falsified. There is little likelihood that the falsification of reports would be detected.) Carlson notes that provisions for 'fallback safeguards' in the event of IAEA safeguards ceasing to apply are vague and open to differing interpretations. There are many concerns other than those noted by Carlson. The IAEA"India safeguards agreement is on the public record, if only because it was leaked, and it is clear from the agreement that safeguards inspections are few and far between. A leaked IAEA document states that the IAEA "will not mechanistically or systematically seek to verify" information obtained from India.

Underpinning this entire debate is an infuriating secrecy. For example, it seems reasonable that we should be able to find out how often IAEA safeguards inspections are carried out in India, which facilities have been inspected, and whether any accounting discrepancies were detected. But national governments refuse to supply that information and the IAEA itself only releases aggregate information on the number of inspections carried out across three countries " India, Pakistan and Israel.

Carlson notes that the 'administrative arrangement' which will append the nuclear cooperation agreement may be "even more consequential than the agreement itself" as it sets out the working procedures for the agreement. But the Australian public will never get to see the administrative arrangement. And the Australian public will never be able to find out any information about the separation and stockpiling of weapons-useable plutonium in India; or nuclear accounting discrepancies ('Material Unaccounted For'); or even the quantity of Australian uranium (and its by-products) held in India.

K.Subrahmanyam, former head of the India's NSAB, has said that: "Given India's uranium ore crunch and the need to build up our minimum credible nuclear deterrent arsenal as fast as possible, it is to India's advantage to categorise as many power reactors as possible as civilian ones to be re-fuelled by imported uranium and conserve our native uranium fuel for weapons-grade plutonium production.

Even if strict safeguards were in place, uranium sales to India would create an intractable problem: uranium exports freeing up India's domestic reserves for weapons production. K. Subrahmanyam, former head of the India's NSAB, has said that: "Given India's uranium ore crunch and the need to build up our minimum credible nuclear deterrent arsenal as fast as possible, it is to India's advantage to categorise as many power reactors as possible as civilian ones to be re-fuelled by imported uranium and conserve our native uranium fuel for weapons-grade plutonium production."

A USA-Vietnam agreement on civil nuclear energy cooperation has entered into force. The agreement establishes the terms for commercial nuclear trade, research and technology exchanges between the two countries as provided under Section 123 of the Atomic Energy Act.

And even if strict safeguards were in place, uranium sales to India would create another intractable problem: we are setting a poor precedent by selling uranium to a country that is expanding its nuclear weapons arsenal and its missile capabilities, and refuses to sign the NPT for the CTBT.

Source: http://www.onlineopinion.com.au/, 08 October 2014.

USA–VIETNAM

USA-Vietnam Nuclear Accord Takes Effect

A USA-Vietnam agreement on civil nuclear energy cooperation has entered into force. The agreement establishes the terms for commercial nuclear trade, research and technology exchanges between the two countries as provided under Section 123 of the Atomic Energy Act. "This is a key part of a necessary effort to ensure that US industry is able to participate in the highly competitive global nuclear energy market." "The US role and influence in that multibillion-dollar market is uncertain as global competitors have gained a larger share of it."

Vietnam already has plans to have two Russian reactors totalling 2000 MWe at Phuoc Dinh in the southern Ninh Thuan province by 2020, followed by another 2000 MWe using Japanese technology at Vinh Hai in the same province. "Vietnam is one of those places where international competitors have a head start but, with this agreement in place, US companies can now compete on a more even playing field. The market in Vietnam is estimated to be worth as much as $20bn."

"According to the Department of Commerce, that much work would create 50,000 high-paying US jobs and ensure a US presence and influence in a critical industry.

To support its rapid economic development, Vietnam intends to develop up to 10,000 megawatts of nuclear energy capacity by 2030, with the first reactors beginning construction in the coming decade. This agreement will enable US suppliers to effectively compete against Russian and Japanese suppliers that already have established themselves in the Vietnamese market."

In anticipation of this agreement entering into force, US-based Lightbridge Corporation recently signed a cooperative MoU with Vietnam to support its nuclear energy safety program….Vietnam worked closely with the United States to develop a responsible and transparent nuclear energy program. This included Vietnam affirming its intent to rely on international markets for uranium fuel supplies and not to pursue domestic uranium enrichment or used-fuel reprocessing capabilities.

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A 123 agreement gets its name from a section of the US Atomic Energy Act of 1954, which establishes an agreement for cooperation as a prerequisite for nuclear deals between the USA and any other nation. Under the latest such agreement, the USA could license the export of nuclear reactor and research information, material, and equipment to Vietnam.

Source: http://www.world-nuclear-news.org/, 06 October 2014.

NUCLEAR PROLIFERATION

IRAN

Iran Admits Testing Nuclear 'Bridge Wires' at Exploded Parchin

In the wake of the reported massive explosion at Iran's secret nuclear facility at Parchin on Sunday, it was reported by *USA Today* that Iran has admitted it had "tested 'exploding bridge wires'" at Parchin, and "not neutron initiators."

As recently as September 5, the IAEA reiterated that Iran is still trying to explain its civilian, non-nuclear-weapon, "need" for explosive bridge wires. The … explosive bridge wires simultaneously detonate the conventional explosives placed around the spherical implosion-type nuclear bomb so as to create a symmetric inward detonation wave to ensure uniform compression. In this way, a uranium or plutonium fissile nuclear weapons' core can be compressed and pressured enough to reach "supercritical density" and set off a proper and efficient nuclear chain reaction.

Such an implosion bomb was estimated by A.Q. Khan to be able to achieve a 20-21 kiloton yield equivalent to the plutonium implosion bomb code-named "Fat Man" that was dropped on Nagasaki August 9, 1945, and killed an estimated 35,000 to 40,000 people outright.

Source: Excerpted from article by Mark Langfan, http://www.israelnationalnews.com, 10 October 2014.

NORTH KOREA

North Korea's Yongbyon Nuclear Facility may be Idle Again

North Korea may have shut down a recently restarted reactor that can yield plutonium for bombs, possibly for renovation or partial refuelling, a US security institute said, citing new satellite imagery. North Korea announced in April 2013 that it would revive its aged 5-megawatt research reactor at the Yongbyon nuclear complex, saying it was seeking a deterrent capacity.

… On October 2, 2014 So Se-pyong, North Korea's ambassador to the UN in Geneva, said Pyongyang was ready to resume the so-called six-party talks and was not planning a nuclear or missile test.

Early in September, 2014 the IAEA said in an annual report on North Korea that it had seen via satellite imagery releases of steam and water indicating that the Yongbyon reactor might be operating. ... North Korea may be carrying out a partial refuelling of the reactor's core or it may have shut it down for maintenance or renovation purposes. "The question of refuelling requires closer scrutiny, because the plutonium would be expected, after separation ... to be assigned to nuclear weapons," the institute said. The Yongbyon reactor had been technically out of operation for years. ...

Early in September, 2014 the IAEA said in an annual report on North Korea that it had seen via satellite imagery releases of steam and water indicating that the Yongbyon reactor might be operating.

Source: http://www.scmp.com/, 04 October 2014.

South Korean PM Claims North Korea's Nuclear Reactor Up and Running

North Korea's nuclear reactor is thought to likely to be up and running according to a South Korean Foreign Minister, who has dismissed a US think tank's report suggesting that the Yongbyon reactor was shut down by Pyongyang. "Many believe it is still in operation. On whether the Yongbyon nuclear reactor has been shut down, and on the reasons for the shutdown if it is true, I do not necessarily have the same views as the report," said Yun Byung-se, the Foreign Minister of South Korea.

A report released by the ISIS on October 3, 2014, stated commercial satellite imagery dated August 27 and September 29, 2014 had indicated the 5MWe reactor could be shut down "possibly for either partial refueling or renovations." The Institute also pointed out North Korea may be undertaking "the production of weapon-grade plutonium as well as enriched uranium for its nuclear weapons program."

A manifesto supposedly penned by a senior Islamic State radical has revealed the group's outlandish plans to bribe Russian President Putin in return for secrets about Iran's nuclear program. The document, purportedly obtained during a raid by Iraqi forces on a senior IS commander's house, details how the group had planned to give Russia access to IS-controlled oil fields in Iraq in return for Moscow dropping its support of Iran and handing over knowledge of that country's nuclear program.

Yonhap stresses that the Yongbyon reactor is capable of producing enough plutonium to make one nuclear bomb a year. According to the media source, plutonium produced by the reactor was used in two of the three nuclear tests (in 2006, 2009 and 2013), carried out by Pyongyang. Commenting on the report, the *International Business Times* underscores that North Korea has intensified its missile tests recently, allegedly in response to US-South Korean joint military drills carried out by the countries in August 2014. ...

Source: http://www.eurasiareview.com/, 07 October 2014.

NUCLEAR TERRORISM

GENERAL

Islamic State Plot to Use Russian Corruption to Get Nuclear Weapons

A news report on October 6, 2014 said a manifesto supposedly penned by a senior Islamic State radical has revealed the group's outlandish plans to bribe Russian President Putin in return for secrets about Iran's nuclear program. The document, purportedly obtained during a raid by Iraqi forces on a senior IS commander's house, details how the group had planned to give Russia access to IS-controlled oil fields in Iraq in return for Moscow dropping its support of Iran and handing over knowledge of that country's nuclear program, British newspaper *The Sunday Times* reported. Moscow would also have to abandon its support for Syrian President Bashar Assad and back

the Gulf States against Iran as part of the deal, the report said. …

Source: http://www.themoscowtimes.com/, 06 October 2014.

NUCLEAR SAFETY

US, UK and KAZAKHSTAN

US, UK, Kazakhstan Seek Secure Radiological Transportation Vehicles

The US National Nuclear Security Administration joined the governments of Kazakhstan and the United Kingdom in announcing the commissioning of four transportation vehicles specially designed to transport radiological materials. In a ceremony at the Institute of Nuclear Physics in Almaty, US Consul General Theresa Grencik, UK regional Energy Officer Ann Herrigan and Kazakh Deputy Chairman Timur Zhantikin of the Kazakhstan Atomic Energy Committee highlighted the addition of the new vehicles as an example of the cooperation between the three countries to prevent nuclear terrorism.

As part of a broader cooperative effort to help combat nuclear and radiological terrorism around the world, the dedication of these transportation vehicles supports efforts by Kazakhstan's Atomic Energy Committee to implement international guidelines to protect radiological materials in transit.

As part of a broader cooperative effort to help combat nuclear and radiological terrorism around the world, the dedication of these transportation vehicles supports efforts by Kazakhstan's Atomic Energy Committee to implement international guidelines to protect radiological materials in transit. The procurement of the secure transportation vehicles is made possible by a contribution from the UK to NNSA. UK has a long history of significant contributions to global security projects, and this cooperative effort is the most recent of many joint projects between the United States and United Kingdom to prevent nuclear and radiological terrorism.

As part of its radiological security mission, NNSA works with partner countries to search for radiological sources that have been abandoned or disused, remove those sources and place them in secure storage, and improve radiological transportation security and site security.

As part of its radiological security mission, NNSA works with partner countries to search for radiological sources that have been abandoned or disused, remove those sources and place them in secure storage, and improve radiological transportation security and site security. The UK-funded projects provide an immediate security and safety benefit, and ensure Kazakhstan has the tools and skills to identify, secure, and remove radiological material in the future. The commissioning of the secure transportation vehicles and the broader project to secure radioactive material are examples of the productive partnership between the US and Kazakhstan, who share a long history of cooperation on nuclear nonproliferation issues. This cooperation includes many historical and ongoing projects, including:

Secure long-term storage for more than 10 metric tons of HEU Ongoing conversion of the research reactor at the Institute of Nuclear Physics from HEU to low enriched uranium and the elimination of all HEU located at the Institute; Improvement of security for nuclear and radiological materials; Commissioning of heavy-duty transportation security vehicles for IAE and MAEC in 2012; Provision of radiation detection equipment to Kazakhstani ports of entry; Bilateral cooperation on safeguards implementation; Provision of training for Kazakhstani officials on export controls; and Application of expertise of former nuclear weapons scientists to civil pursuits that advance global nonproliferation and security efforts.

Source: http://www.nnsa.energy.gov/, 03 October 2014.

SCOTLAND

Cracks Found at Reactor at Hunterston B Nuclear Power Station

Two of about 3,000 graphite bricks in the core of reactor four are affected. Plant operator, EDF Energy, said the cracking was predicted to occur as the station aged and it would not affect the safe operation of the reactor. Deputy First Minister Nicola Sturgeon said the issue was "hugely concerning" to the public and that the Scottish government was seeking reassurances. ...

The cracks were found during a routine inspection which began in August. These have occurred since the last inspection in 2011. EDF Energy said the cracking was predicted to happen as the plant aged and did not compromise its safety.

'Cracks predicted': Colin Weir, station director at Hunterston B, said: "Every time we take the reactor out of service for planned maintenance we inspect the graphite core, which is made up of around 6,000 bricks. "During the current Hunterston outage we found two bricks with a new crack, which is what we predicted during Hunterston B's lifetime as a result of extensive research and modelling.

What we have found here is that our models and mathematical assumptions are absolutely underpinned by our findings" "It will not affect the operation of this reactor and we also expect that a few additional cracks will occur during the next period of operation." ... The reactor returned to service, after the energy firm received approval from the Office for Nuclear Regulation. It is, however, not supplying electricity to the grid as the start-up process takes time.

'Strict safety': A spokeswoman for EDF said a process known as "turbine balancing" was taking place and the rector would begin supplying electricity "some time soon". Dr Richard Killick, a former director of safety at Scottish Nuclear, said there was no cause for alarm over the identification of cracks which were "expected". Speaking on BBC Radio's Good Morning Scotland programme, he said: "The reactor will be shut down for a very thorough inspection, a periodic safety review, every five years or so and and the blocks will be inspected for any signs of cracking. "These cracks are very small hairline cracks, in only two of the blocks, and we can have complete faith in our office for nuclear regulation, who are very strict about safety. ...

Source: http://www.bbc.com, 06 October 2014.

NUCLEAR WASTE MANAGEMENT

GERMANY

One in Three Nuclear Waste Barrels Damaged

Vattenfall, the energy company which manages the Brunsbüttel site in Schlewswig-Holstein, reported that 102 of the 335 barrels stored in the site's six underground chambers were corroded, leaking or had loose lids. Some of the containers are so deformed that they can no longer be moved, as they no longer fit into the robotic gripping arms installed at the site, the inspectors reported. ... The Brunsbüttel site harbours 631 barrels of nuclear waste in its six chambers, which have been used for storing waste since 1979. The nuclear power plant was decommissioned in 2011.

The barrels contain resin used for water filters, residue from contaminated water and various other types of waste. So far, Vattenfall has only inspected four of the six chambers using remote cameras. The chambers themselves are built from concrete and have walls over a metre thick to prevent radiation escaping into the surrounding environment. The energy company has sent a proposal to the Schlewsig-Holstein Environment Ministry for making the storage facility more secure, including by installing dehumidifiers to slow corrosion, which has yet to be approved by government experts.

"The chambers were supposed to be a temporary storage facility," Vattenfall said in a statement. They weren't designed to for long-term containment." It was originally planned to store the barrels at Brunsbüttel until they were moved to the 'Konrad' mine shaft site in Lower Saxony. This permanent storage facility was to be completed by the mid- to late 90s, but has been subject to successive delays. Completion dates in 2014 has been missed and a target of 2019 is also unlikely. The latest estimate for completion is the start of the next decade.

Source: http://www.thelocal.de, 10 October 2014.

UK

UK Nuclear Bomb Factories Rapped by Watchdogs over Radioactive Waste

Britain's nuclear bomb factories have been reprimanded by two government watchdogs for breaking safety rules on radioactive waste. AWE, the private consortium that operates Trident nuclear weapons facilities at Aldermaston and Burghfield in Berkshire for the Ministry of Defence, has come under fire from the Environment Agency and the ONR for failures in managing its hazardous waste.

The EA has issued AWE with a non-compliance notice because key posts meant to ensure the safe handling of wastes have been vacant for months. These include waste officers, radioactive specialists and the head of environment. AWE blamed security requirements – which can include the vetting of prospective employees – for delays in filling the vacancies. According to the EA, AWE has breached conditions imposed in 2012 to ensure that enough skilled staff were employed to look after radioactive waste safely....

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AWE pointed out that the EA had found its radioactive waste arrangements to be "robust and identified a number of areas of good practice". At the same time ONR is considering whether to take legal action over AWE's failure to make 1,000 drums of hazardous radioactive waste safe. AWE promised in 2007 to repackage and reduce the waste by February 2014, but has not done so. "ONR is continuing to investigate AWE's failure to meet the requirements of the licence instrument, in accordance with our normal processes," said an ONR spokesman. "ONR will consider enforcement action in accordance with our enforcement policy when all investigations are completed." AWE said it was "working with the ONR in support of its decision to formally investigate." It pointed out that ONR was content that the way in which the waste was currently stored was acceptable in the short-term. ...

Source: http://www.theguardian.com/, 02 October 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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