



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

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STATEMENT – Yukiya Amano, IAEA Director General

Introductory Statement to the Board of Governors

A number of important nuclear safety and security documents are before the Board. The Nuclear Safety Review 2017 provides an overview of Agency activities in 2016 and of global trends in nuclear safety. It also presents priorities for 2017 and beyond. As outlined in my report on Building on the Action Plan on Nuclear Safety last June, we will consider ways of further strengthening our work in nuclear, radiation, transport and waste safety. We will continue to focus on regulatory effectiveness, safety culture and capacity-building. Efforts to strengthen global nuclear safety in light of the lessons learned from the Fukushima Daiichi accident continue as we approach its sixth anniversary.

Radioactive sources offer many benefits in areas such as medicine, industry and agriculture. But they pose risks to human health and the environment if not managed safely and securely. My report entitled Code of Conduct on the Safety and Security of Radioactive Sources: Guidance on the Management of Disused

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The 7th Review Meeting of the Contracting Parties to the Convention on Nuclear Safety will be held in Vienna from March 27th to April 7th. Through its peer review process, the Convention has made a significant contribution to strengthening nuclear safety in the countries which are party to it. This will be the first Review Meeting at which participants may report on actions taken in relation to

the Vienna Declaration. I encourage all countries which have not yet done so to become parties to the Convention on Nuclear Safety.

Mr Chairman, A first draft of the IAEA Nuclear Security Plan 2018–2021 has been circulated for discussion and informal consultations have begun. The Plan builds on resolutions of the General Conference and on the Ministerial Declaration adopted at our International Conference on Nuclear Security in December 2016. It is intended to guide our work in providing support to Member States over the next four years. Our focus is on concrete measures which will be of practical value to all countries as they work to strengthen nuclear security. We will consult very closely with Member States on this.

Nuclear Energy: Mr Chairman, The Nuclear Technology Review 2017 provides an overview of global developments related to nuclear power last year. As the Review notes, nuclear power contributes significantly to meeting the goal set under the Paris Agreement of holding the increase in global temperature well below 2°C above preindustrial levels, and to achieving the Sustainable Development Goals.

It also highlights the key role of technological innovation. Innovative nuclear power technologies, including small and medium sized or modular reactors and advanced fuel cycles, could more efficiently contribute to reducing greenhouse gas emissions and extend the role of nuclear power into new applications.

There are 449 nuclear power reactors in operation in 30 countries today. Sixty reactors are under construction, mostly in Asia.

Preparations are well underway for the IAEA Ministerial Conference on Nuclear Power in the 21st Century, which opens in Abu Dhabi on October 30th. It will provide an opportunity for governments, operators and regulators to consider the valuable contribution which nuclear power

makes to energy security and to mitigating the effects of climate change. I encourage all countries to be represented at ministerial level.

The 2016 edition of the biennial Red Book on global uranium resources, production and demand was published after the November Board by the IAEA and the OECD Nuclear Energy Agency. It shows that global uranium resources are more than adequate to meet foreseeable demand in the coming decades.

Assurance of Supply: The IAEA LEU Bank project in Kazakhstan continues to

make good progress. Construction of the LEU Storage Facility is proceeding on schedule and Kazakhstan expects to have the facility built, and ready to receive LEU, by September this year. You have before you for approval an Agreement between the IAEA and China for the transit of LEU to and from the LEU Bank. It is similar to the Agreement with the Russian Federation which you approved in 2015.

Following ratification by Kazakhstan, the Host State Agreement has now entered into force. This triggers entry into force of related Technical Agreements and paves the way for the entry into force of the Transit Agreement with the Russian Federation. We continue to work on the LEU Procurement Plan and aim to have an LEU acquisition contract in place before the end of 2017.

Nuclear Applications: Mr Chairman, Turning now to nuclear applications, I am pleased to report that the modernisation of the Seibersdorf laboratories under the ReNuAL project is proceeding on schedule

and within budget. I encourage all Member States to visit Seibersdorf to see the impressive progress being made.

My status report outlines the scope and estimated resource requirements of ReNuAL+. Since the

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funding target for ReNuAL was achieved, over four million Euros in extrabudgetary funds have been pledged or provided for ReNuAL+. If we receive an additional two million Euros in extrabudgetary funds by June this year, we can maximize cost efficiencies in the construction of the third wing of the Flexible Modular Laboratory. I warmly thank Member States that have already provided funding to ReNuAL and ReNuAL+, and I encourage all countries in a position to do so to contribute.

I wish to inform the Board that this year's Scientific Forum in September will focus on Nuclear Techniques in Human Health. It will bring together government officials and leading experts to consider the latest advances in the use of nuclear techniques in disease prevention, diagnosis and cure.

Technical Cooperation: Mr Chairman, The Technical Cooperation programme remains the key mechanism for the delivery of IAEA services to Member States under our Atoms for Peace and Development mandate. I remind all Member States of the importance of contributing, on time and in full, to the TCF.

I encourage all countries to participate actively in the first ever International Conference on the IAEA Technical Cooperation Programme, which will take place from May 30th to June 1st. The aim of this important conference is to raise awareness of the achievements and potential of the TC programme and ensure greater recognition for our work on assisting sustainable development.

Verification and Monitoring in Iran: Mr Chairman, You have received my report on Verification and monitoring in the Islamic Republic of Iran in light

of United Nations Security Council resolution 2231 (2015). The Agency has been verifying and monitoring the implementation by Iran of its nuclear-related commitments under the Joint Comprehensive Plan of Action for more than a year.

In January, the Agency verified the removal of excess centrifuges and infrastructure from the Fordow Fuel Enrichment Plant to the Fuel Enrichment Plant at Natanz, where they are now stored under Agency continuous monitoring. My Report provides more information in relation to Iran's LEU stockpile, which was facilitated by clarifications agreed by the Joint Commission

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established under the JCPOA. The Agency continues to verify the non-diversion of nuclear material declared by Iran under its Safeguards Agreement. Evaluations regarding the absence of undeclared nuclear material and activities in Iran continue.

Nuclear Verification: Conclusion of Safeguards Agreements and Additional Protocols. Turning now to nuclear verification, you have before you for approval a draft safeguards agreement with Pakistan concerning Units 2 and 3 of the Karachi Nuclear Power Plant.

The number of States with safeguards agreements in force stands at 182, while 129 States have brought additional protocols into force. I ask States Parties to the NPT without comprehensive safeguards agreements in force to bring such agreements into force without delay. I hope that States which have not yet concluded additional protocols will do so as soon as possible. I also call on States with small quantities protocols based on the old standard text to amend or rescind them.

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Application of Safeguards in the DPRK: Mr Chairman, I remain seriously concerned about the nuclear programme of the DPRK. It is deeply regrettable that the DPRK has shown no indication that it is willing to comply with the UN Security Council resolutions adopted in response to its two nuclear tests last year. I again call upon the DPRK to comply fully with its obligations under Security Council resolutions, to cooperate promptly with the Agency, and to resolve all outstanding issues, including those that have arisen during the absence of Agency inspectors from the country. The Agency maintains its readiness to play an essential role in verifying the DPRK's nuclear programme.

Implementation of the NPT Safeguards Agreement in the Syrian Arab Republic: As far as implementation of safeguards in the Syrian Arab Republic is concerned, there have been no new developments since my last report to the Board. I renew my call to Syria to cooperate fully with us in connection with all unresolved issues.

NPT Review Conference:

The first session of the Preparatory Committee for the 2020 NPT Review Conference will take place from May 2nd to 12th in Vienna. The Agency will participate actively and provide all necessary assistance. We will organize side events and an exhibition in the margins of the Preparatory Committee meeting. ...

Finally, Mr Chairman, let me note that we will continue to mark the 60th anniversary of the IAEA this year. The Agency was established when the Statute entered into force on July 29th, 1957. Thank you, Mr Chairman.

Source: Excerpted, <https://www.iaea.org>, 06 March 2017.

OPINION – Jim Buxton

Should President Trump have Control of the Nuclear Codes?

President Trump recently stated that the US had “fallen behind on nuclear weapon capacity,” and that we “must greatly strengthen and expand our

nuclear capability until such time as the world comes to its senses regarding nukes.” That sounds pretty ominous and compelling. It sounds like Trump believes that “the world” is involved in some kind of mad nuclear arms race, and that the Obama administration was naively sitting still while everyone else was massively building up.

But let's look at the facts. According to the nonpartisan Arms Control Association, there are only nine countries with nuclear warheads: Russia (7,000), the U.S (6,800), France (300), China (260), UK (215), Pakistan (130), India (120), Israel (80) and North Korea (15). Every other country on earth swore off any attempt to get nuclear weapons when they signed the NPT, and only Iran is suspected by some to be moving in that direction.

Since their peak in the mid-1980s, global arsenals have shrunk by more than two-thirds more countries have given up weapons and programs during the past 30 years than have tried to acquire them. According to much of the globe, it's Donald Trump who is “losing his senses regarding nukes.”

Since their peak in the mid-1980s, global arsenals have shrunk by more than two-thirds. In the early 1980s, the US and the erstwhile USSR had more than 70,000 nuclear warheads combined, but every President since Reagan has agreed to nuclear reduction treaties. More countries have given

up weapons and programs during the past 30 years than have tried to acquire them. According to much of the globe, it's Donald Trump who is “losing his senses regarding nukes.”

Source: <http://www.providencejournal.com>, 28 February 2017.

OPINION – Daisaku Ikeda

Time for a Treaty to Bring an End to Nuclear Danger

Last December, the UNGA adopted a historic resolution calling for the start of negotiations on a legally binding instrument to prohibit nuclear weapons. The resolution calls for a first conference to be convened at the end of March at UN Headquarters in New York, and encourages participating governments to exert their best efforts for the early conclusion of a treaty. It further calls for the participation and contribution of international organizations and civil society representatives.

One must seize the opportunity to put an end to the era of nuclear weapons. There are still more than 15,000 nuclear warheads in our world today. Efforts in nuclear disarmament have stalled, while plans for modernization of arsenals have progressed. The threat posed by these weapons is...growing. Constructive discussions at the upcoming UN negotiations, as well as the earliest possible holding of a US-Russia summit in order to reinvigorate the nuclear disarmament process should be emphasised. A truly weighty responsibility bears down on the shoulders of the leaders of these two countries that together possess over 90 percent of the world's nuclear arsenals which threaten the lives of everyone on Earth and could reduce to ash the civilizations humanity has forged over the millenniums.

More than 25 years since the end of the Cold War, the policy of nuclear deterrence is still in effect, and approximately 1,800 nuclear weapons are on high alert, meaning they can be launched at an instant's notice. What does this actually mean? Former US Secretary of Defence William J. Perry recounted...that he received a late-night emergency communication from the watch officer at the NORAD indicating that 200 Soviet missiles were in flight heading toward the US. Although this was quickly understood to be a false alarm, had it been accurate, the President of the US would have had only minutes to make the momentous decision whether or not to launch a nuclear counter-strike. The logic of deterrence requires being able to demonstrate the readiness to retaliate at any time as a means of forestalling an enemy strike. Under these conditions, one's guard cannot be let down even for a moment, and the threat of imminent nuclear war becomes a constant and unavoidable burden.

Sixty years ago in 1957, Soka Gakkai's second President, Josei Toda, made a powerful

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declaration calling for the abolition of nuclear weapons. At the time, both the US and the erstwhile Soviet Union were testing hydrogen bombs, and the Soviet Union at that time had successfully tested an intercontinental ballistic missile. The US-Soviet nuclear confrontation was compared at the time to "two scorpions in a bottle." What was largely forgotten was that many countries other than the nuclear-weapon states were also in the same bottle, along with their several billion inhabitants. This is why Toda wanted to challenge

the underlying thinking that justifies the possession of nuclear weapons. Stating forcefully that "we, the citizens of the world, have an inviolable right to live," he declared that it was impermissible for any country to threaten this right and that the use of nuclear weapons can never be justified. He also called on youth to take up the challenge of working for their abolition.

Given the lethal risks of nuclear weapon detonation resulting from accident... the leaders of the US and Russia should get engaged in dialogue toward taking their weapons off high alert and to make significant new progress in nuclear arms reduction. ...Japan can play an active role in building consensus in the negotiations

toward the conclusion of a nuclear weapons treaty starting in March 2017 as the only country in the world to have experienced a nuclear attack in wartime. Recognizing this historical responsibility and mission, Japan should work assiduously to achieve the broadest possible participation, including that of states that possess or rely on nuclear weapons for deterrence.

It is also important to ensure linkages with the first Preparatory Committee for the 2020 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons to be held in May. A treaty prohibiting nuclear weapons shares the same standpoint as the NPT — deep concern

over the horrors of nuclear war — and would reinforce it. The work of establishing a treaty prohibiting the production, transfer, threat of use or use of nuclear weapons should be viewed as a global enterprise with the goal of preventing the horrors of nuclear war from ever again being experienced by any country.

Earnest efforts must be made to find a way to reach a consensus based on this vision. ...The full spectrum of civil society actors should be encouraged to generate statements directed toward the negotiations. Together, these would constitute a people's declaration for a world without nuclear weapons and serve as a popular basis for a treaty prohibiting them. NGOs and citizens' groups can play a vital role in clarifying and giving a human face to problems that are deeply relevant to all people across national borders — problems that might otherwise only be addressed within the context of national policy. Now is the time for us to express strong support for the upcoming negotiations and build momentum to establish this historic treaty as a unique form of people-driven international law.

Source: <http://www.japantimes.co.jp>, 28 February 2017.

OPINION – Chuck Spinney

Sleepwalking into a Nuclear Arms Race with Russia

The nuclear question is becoming increasingly obfuscated by spin and lobbying as the West sleepwalks into Cold War II — a walk made all the more dangerous when the loose lips of the US tweeter-in-chief announced that another nuclear arms race is a great idea. Two Cold War II issues are central and almost never addressed: What will be the Russians' understanding of all the propaganda surrounding the nuclear question and the looming American defence spend-up? And how might they act on this understanding?

Background: Barack Obama first outlined his vision for nuclear disarmament in a speech in Prague on April 5, 2009, less than three months after becoming president. This speech became the basis for what eventually became the New Start nuclear arms limitation treaty. But President Obama also opened the door for the modernization of our nuclear forces with this pregnant statement: "To put an end to Cold War thinking, we will reduce the role of nuclear weapons in our national security strategy, and urge others to do the same. Make no mistake: As long as these weapons exist, the US will maintain a safe, secure and effective arsenal to deter any adversary, and guarantee that defence to our allies — including the Czech Republic." Obama's

To put an end to Cold War thinking, we will reduce the role of nuclear weapons in our national security strategy, and urge others to do the same. Make no mistake: As long as these weapons exist, the US will maintain a safe, secure and effective arsenal to deter any adversary, and guarantee that defence to our allies — including the Czech Republic.

speech paved the way to his Nobel Peace Prize in October 2009, but he was also trying to manipulate the domestic politics of the Military Industrial Congressional Complex (MICC). By Dec. 15, 2009, 41 senators sent a letter to President Obama saying that further reductions of the nuclear arsenal would

be acceptable only if accompanied by "a significant program to modernize our nuclear deterrent."

Viewed in retrospect, it is clear that the new President — either naively or cynically — acquiesced to that senatorial spending demand in order to keep the powerful nuclear laboratories and their allies in the defence industry and Congress from lobbying against his new arms limitation treaty. In April 2009 Obama took the first steps that launched a huge spending plan to modernize US nuclear forces across the board. Eight years later, during his first call to President Putin on Jan. 28, 2017, President Trump locked that program in place by denouncing Obama's New START as a "bad deal," saying it favoured Russia.

A particularly dangerous component of the Obama nuclear spending plan is the acquisition of low-yield precision-guided nuclear bombs/

warheads. These weapons only make sense within a radical strategy for actually fighting a nuclear war – as opposed to the almost universally accepted idea that our nuclear arsenal exists only to *deter* any thought of using these weapons – since actual use is unthinkable, with profoundly unknowable consequences. In December 2016, the prestigious Defence Science Board – an organization replete with members closely connected to the nuclear labs and their defence industry allies – added its imprimatur to this radical strategy by resurrecting the old and discredited ideas of limited nuclear options (LNOs). LNOs are based on the unproven – and unprovable – hypothesis that a president could actually detonate a few nukes to control a gradually escalating nuclear bombing campaign, or perhaps to implement a psychological tactic of encouraging deterrence with a few small “preventative” nuclear explosions.

Adding to Obama’s expansion of ... nuclear posture is President Trump’s intention to fulfill his campaign promises to strengthen all nuclear

offensive and defensive forces, with particular emphasis on spending a lot more for the BMD program – which implies expanding the current deployments of BMD weapons in eastern Europe within a few hundred miles of the Russian border. Early cost estimates...for Obama’s entire nuclear modernization program are for \$1 trillion over the next 30 years. No missile defence costs are included in this estimate – nor are the costs of Trump’s promised expansions. The components of the currently authorized program – e.g., a new bomber, a new ballistic missile carrying submarine, a new ICBM, a new air-launched cruise missile, a complete remanufacturing upgrade of the existing B-61 dial-a-yield tactical nuclear bomb that also adds a precision guidance kit, a new family of missile warheads, new nuclear warhead production facilities and a massive array of new large-scale intelligence, surveillance, command and control systems to manage these forces – are all in the early stages of development.

Assuming business as usual continues in the Pentagon, the \$1 trillion estimate is really a typical front-loaded or “buy-in” estimate intended to stick the camel’s nose in the acquisition tent by deliberately understating future costs while over-promising future benefits. The money for all of these programs is just beginning to flow into hundreds of congressional districts. As the torrent of money builds up over the next decade, the flood of subcontracting money and jobs in hundreds of congressional districts guarantees the entire nuclear spend-up will acquire a political life of its own — and the taxpayer will be burdened with yet another unstoppable behemoth. Readers who doubt this outcome need only look at how the problem-plagued F-35 Strike Fighter lives on, resisting reductions in money flows and even receiving congressional add-ons, despite mind-

numbing effectiveness shortfalls, technical failures and unending schedule delays (e.g., see this recent 60-page report by the Pentagon’s Director of Operational Test and Evaluation).

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Locking hundreds of congressmen and senators into this nuclear modernization program guarantees that the money flow and cost overruns will increase without interference for the next 30 to 50 years. Our many years of observing and analyzing DoD’s largest politically engineered acquisitions makes it obvious that the initial buy-in guess of a trillion-dollar total will turn into at least a \$3 trillion price tag by the end of three decades. In short, the Pentagon is planting the seed money for another F-35-like disaster, only this time on steroids.

Further, once this multitrillion-dollar, self-sustaining money gusher is sluicing steadily into the boiler rooms of the MICC, US force deployments, alliances, treaties and threat assessments will be shaped even more heavily than now to support the domestic politics of ever-increasing spending for it. Despite this, our nation’s foreign policy mandarins seeking to steer

the ship of state from their perch on Mount Olympus will remain oblivious to the fact that their "policy" steering wheel is not connected to the ship's rudder. As one perceptive Pentagon wag succinctly observed years ago, "In the real world, foreign policy stops at the water's edge," i.e., the domestic politics of the MICC always trump foreign policy. President Eisenhower understood this, though he did nothing about it before leaving office.

As of now, no one in the MICC really gives a damn how the Russians (or the Chinese) might actually react to America's looming nuclear (and non-nuclear) spending binge. This is clearly seen in the cognitive dissonance of the Obama Defence Department: It was torn between insisting the Russians are not the target of the nuclear program but at the same time justifying the nuclear build up as a means to counter Russian conventional aggression. Equally revealing, a Feb. 8 editorial in the Pentagon's favoured house organ, *Defence News*, described President Trump's upcoming Nuclear Posture Review without once mentioning the Russians or Chinese nor how they might react to the looming American spending spree. On the other hand, the editorial took great pains to explain in detail how the forces of domestic political consensus will ensure steady funding for Obama's nuclear spending plans throughout the Trump administration years.

Do Actions Trigger Reactions (1)?: So, how might the Russians react to the threat of increased American defence budgets? Let's try to look at the nuclear modernization program – and the looming defence spend-up – from the Russian leadership's point of view. The Russians, particularly those internal political and industrial factions that benefit from Russian defence spending, are very likely to characterize the American spending program as an aggressive sharpening of the US nuclear sword and a strengthening of its nuclear shield, synchronized

From the Russian leadership's point of view. The Russians, particularly those internal political and industrial factions that benefit from Russian defence spending, are very likely to characterize the American spending program as an aggressive sharpening of the US nuclear sword and a strengthening of its nuclear shield, synchronized with a threatening build-up of America's conventional force.

with a threatening build-up of America's conventional force. And that will be used to argue that Russia is spending far too little on defence because it faces an existential threat due to increased American spending...this is a mirror image of the argument used successfully by President Ronald Reagan in a televised address to the nation on Nov 22, 1982.

His subject was also nuclear strategy, as well as the need to increase America's entire defence budget, Reagan said... "You often hear that the US and the Soviet Union are in an arms race. The truth is that while the Soviet Union has raced, we have not. As you can see from this blue US line in constant dollars our defence spending in the 1960s went up because of Vietnam and then it went downward through much of the 1970s. Now, follow the red line, which is Soviet spending. It has gone up and up and up." ...The combination of the Soviets spending more and the US spending proportionately less changed the military balance and weakened our deterrent. Today, in virtually every measure of military power, the Soviet Union enjoys a decided advantage. ...If my defence proposals are passed, it will still take five years before we come close to the Soviet level.

Mirror imaging Reagan's argument, Russian defence advocates emphasizing the dangers of the US spend-up are likely to point out that the US and its allies are already spending far more on their military forces than Russia is spending. Moreover, America certainly intends to rapidly increase the size of this spending advantage, because the large new American nuclear modernization program is only part of a yet-larger long term spending build-up.

After all, have not President Trump and Sen. John McCain (R-AZ) proposed huge increases to President Obama's defence budget to rebuild what Trump and McCain claim is a "depleted" military.... Advocates of increased Russian defence budgets might also ask, are not Trump and McCain declaring an emergency by calling on Congress to exempt

defence spending from the spending restrictions imposed by the Budget Control Act of 2011? Indeed, Russian politicians, echoing Reagan in 1981, might construct a graphic using the West's own numbers to prove their points, beginning perhaps with something like this (Chart 2):

A Russian defence advocate...could argue that (1) Russia is now spending slightly less than Saudi Arabia, less than India, and less than the UK; (2) the size of Russia's budget is only a quarter of China's; and (3) the size of Russia's defence budget is an astonishing one-twelfth of that of the US.

A Russian defence advocate...could argue that (1) Russia is now spending slightly less than Saudi Arabia, less than India, and less than the UK; (2) the size of Russia's budget is only a quarter of China's; and (3) the size of Russia's defence budget is an astonishing one-twelfth of that of the US! Add to the US defence budget the contributions of its allies and close friends and the spending balance in favour the US and its allies to that of Russia alone becomes an astounding 21 to 1! Even if Russia could trust China to be a reliable ally – which it can't – the current spending imbalance is over four to one in favour of the US and its allies on the one hand and Russia and China on the other. Advocates of increased Russian defence spending might even argue their comparison does not suffer from the gross distortions created by Reagan's earlier chart because the Ruble was *not* convertible into dollars in 1982 (whereas it is today), and Reagan's comparison severely overstated Soviet spending levels using an artificial exchange rate....

inside Russia are likely to insist on a rational application of the precautionary principle by the Russian nation. That principle will dictate a response, presumably a massive Russian nuclear arms race with the US

The obvious fact that the politically engineered US nuclear program cannot be reined in or terminated by politicians in the US is almost certainly understood by the Russians. But that

appreciation would serve merely to magnify the sense of *menace* perceived by patriotic Russian leaders. ... The Russians are unlikely to view the emerging nuclear menace in isolation. For one thing, there is the toxic question of NATO's expansion and the mistrust it created. The vast majority of Russians, including former President Gorbachev, President Putin, and Prime Minister Medvedev, believe strongly that the US and the West violated their verbal promises not to expand NATO eastward in return for the Soviet Union's acquiescence to the unification of Germany as a member of NATO. Many leaders of the West have either denied any promises were made or downplayed the import of any such understandings. But reporters from the German weekly *Der Spiegel* discovered documents in western archives that supported the Russian point of view, and on Nov 26, 2009 published an investigative report concluding

Do Actions Trigger Reactions (II)?:

Of course, from a Russian leader's point of view, the strategic threat goes well beyond the madness implied by the asymmetries in defence budgets. They might see the Trumpian expansion of both nuclear offense and missile defence as evidence the US is planning to dominate Russia by preparing to fight and win a nuclear war – a radical shift from America's 50+ years of building nuclear forces only for deterrence (often referred to as Mutually Assured Destruction or MAD). Faced with such a threat, militarist factions

One thing is beyond dispute: The impression or understanding or promise not to expand NATO was broken by President Clinton — largely for domestic political reasons — making a mockery of President Gorbachev's hopeful vision of a greater European home.

After speaking with many of those involved and examining previously classified British and German documents in detail, SPIEGEL has concluded that there was no doubt that the West did everything it could to give the Soviets the impression

that NATO membership was out of the question for countries like Poland, Hungary or Czechoslovakia. One thing is beyond dispute: The impression or understanding or promise not to expand NATO was broken by President Clinton — *largely for domestic political reasons* – making a

mockery of President Gorbachev's hopeful vision of a greater European home. Clinton announced support for NATO expansion in October of 1996, just before the November election, to garner conservative and hawk votes, the votes of Americans of Eastern European descent and in response to an intense NATO expansion lobbying campaign mounted by the MICC – and to steal the issue from his conservative opponent Senator Robert Dole.

From a Russian perspective, the NATO and EU expansions worked to deliberately isolate and impoverish Russia – and the potential (though to date frustrated) expansion by the West into Ukraine and Georgia intensified the sense that Russia had been hoodwinked by the West. The expansion of NATO eastwards combined with President Bush's unilateral withdrawal from the ABM Treaty in June 2002, followed by the deployment of ABM systems to Eastern Europe certainly increased the Russians' sense of *mistrust* and *menace* regarding US intentions. To this day, Putin's speeches repeatedly refer to the broken American promises.

There is more to an appreciation of the Russian point of view. In parallel with the NATO expansion, the EU expanded eastward, precipitously like an expanding cancer, beginning in 1995 and continuing to 2013. The EU's exclusion of Russia from the "greater European home" further fuelled an atmosphere of mistrust and menace. From a Russian perspective, the NATO and EU expansions worked to deliberately isolate and impoverish Russia – and the potential (though to date frustrated) expansion by the West into Ukraine and Georgia intensified the sense that Russia had been hoodwinked by the West.

The perception of a deliberate US and EU campaign to cripple Russia has a history dating

back to the end of the First Cold War in 1991: Russian leaders, for example, are unlikely to forget how, during the Clinton administration, US NGOs combined with American pressure, supported the extraordinarily corrupt privatization of the former Soviet state enterprises in the 1990s (aka "Shock Therapy").

In the words of the Nobel Prize winning economist, Joseph Stiglitz (June 16, 2000): "In the early 1990s, there was a debate among economists over shock therapy versus a gradualist strategy for Russia. But Larry Summers [under

secretary of the Treasury for international affairs, then deputy secretary of the Treasury, now secretary] took control of the economic policy, and there was a lot of discontent with the way he was driving the policy. The people in Russia who believed in shock therapy were Bolsheviks – a few people at the top that rammed it down everybody's throat. They viewed the democratic process as a real impediment to reform. The grand larceny that occurred in Russia, the corruption that resulted in nine or ten people getting enormous wealth through loans-for-shares, was condoned because it allowed the re-election of Yeltsin.

And in a touch of irony, given the current hysteria over President Putin's alleged meddling in the US presidential election, it gets worse. Russian leaders are also unlikely to forget American intervention on behalf of Boris Yeltsin in the Russian elections of 1996, including using American control of the International Monetary Fund to float a \$10.2 billion loan in March to 1996 to help the corrupt and malleable Boris Yeltsin to win the election in June. So, from a Russian perspective, the recent increasingly severe US sanctions are not only hypocritical, they certainly reinforce the view that

The NATO and EU expansions worked to deliberately isolate and impoverish Russia -and the potential expansion by the West into Ukraine and Georgia intensified the sense that Russia had been hoodwinked by the West. The expansion of NATO eastwards combined with President Bush's unilateral withdrawal from the ABM Treaty in June 2002, followed by the deployment of ABM systems to Eastern Europe certainly increased the Russians' sense of *mistrust* and *menace* regarding US intentions.

So, from a Russian perspective, the recent increasingly severe US sanctions are not only hypocritical, they certainly reinforce the view that the US-led campaign to cripple the Russian economy is ongoing and perhaps endless. Moreover, the rapid, opportunistic expansion of NATO and the EU created a kaleidoscope of internal frictions.

the US-led campaign to cripple the Russian economy is ongoing and perhaps endless. Moreover, the rapid, opportunistic expansion of NATO and the EU created a kaleidoscope of internal frictions. Now both institutions are in trouble, riven by contradictions and disharmonies. Great Britain is leaving the EU but will remain in NATO. Northern Europe and the EU bankers are imposing draconian austerity measures on Southern Europe, particularly Greece. Turkey, long a key NATO ally, is turning to Russia while being rejected by the EU.

The destruction of Libya, Iraq and Syria, under US leadership with European participation, has created an unprecedented flood of refugees into the EU, deeply threatening

the EU's organizing principle of open borders. The increasing tide of European instability and chaos, accompanied by the looming spectre of growing Fascist movements from Spain to Ukraine, inevitably add to the traditional Russian sense of being

endangered and encircled. That sense of endangerment is certainly heightened by a recent creepy piece of nuttiness coming out of Poland, perhaps the most Russo phobic member of the EU and NATO. The German daily *DW* says Jaroslaw Kaczynski, a very conservative former prime minister of Poland, chairman of the ruling nationalist-conservative Law and Justice party (PiS), has called for a massive EU nuclear force — trading on Polish fears that the United States will not sacrifice Chicago to save Warsaw. That France and Britain already have nuclear weapons and are members of NATO is, of course, left unsaid in Kaczynski's demagoguery.

Russian leaders cannot ignore the fact that Kaczynski called for a nuclear EU shortly after the US 3rd Armored Brigade Combat Team of the 4th Infantry Division (3,500 troops and 2,500 vehicles) deployed to Poland. Even worse, the commanding officer promptly declared the brigade is "ready to fight," though it is intended to "deter" any threat to Poland. One brigade is a trip wire ... or a kind of blank check that might be exploited for nutty reasons to trigger a shooting war — and

as Kaczynski just demonstrated, nuttiness is afoot in that part of the world. Now, if you were a Russian, and (1) you remembered the West's destruction to your homeland beginning in 1812, 1914 and 1941 together with the recent string of broken promises, economic exclusion, and destructive meddling in Russian internal affairs that made a mockery of the ideal of a post-Cold War common European home; and ... (2) you faced a country that excluded you from Europe, suborned your election and is intent on crippling your economy, a country already outspending you on defence by a factor of 12 to one while expressing an intent to increase that lopsided ratio in a major way; and ... (3) that country has already started a nuclear arms race with a hugely

expensive across-the-board modernization program to buy atomic weapons some of which can be justified only in terms of fighting and winning nuclear wars: What would you do?

To ask such a question is to answer it. For patriotic Americans interested in

increasing their real national security (rather than their national security *budget*), the nuclear issue boils down to a question of understanding the powerful impact of America's spending decisions and actions on patriotic Russians. In other words, it is a question of reasoned empathy and pragmatic self-interest. Yet the mainstream media and the politicians of both parties in thrall to our MICC are working day and night to pump up anti-Russian hysteria and hype fear to ensure Americans remain completely oblivious to the powerful, dangerous impact of our senseless Obama-Trump nuclear spend-up on the Russians — or on anyone else, for that matter.

Source: <http://billmoyers.com>, 27 February 2017.

OPINION – Keyhan Barzegar

Nuclear Deal and Fight against Terrorism Key to Countering Trump's Hostile Policies

Donald Trump's ascension to the White House has prompted a new round of antagonism against Iran. The new US President has announced that he

For patriotic Americans interested in increasing their real national security (rather than their national security budget), the nuclear issue boils down to a question of understanding the powerful impact of America's spending decisions and actions on patriotic Russians.

would walk out or renegotiate the nuclear deal, trying to restrict Iran's influence in the Middle East and isolate the country through fresh sanctions. What policies should Iran adopt under the new circumstances?

The main goal of Trump's policies against Iran is a DeObamazation of the US regional policies. Ex-president Obama wanted to prevent Iran's nuclear program from entering a weaponization phase and to attract Iran's cooperation on regional issues in return for the nuclear deal. Understanding Iran's significance in the region, he did his best to control Iran through its involvement in the Middle East. Trump however wants to end the policy and return to US' conventional policy, that is, to control Iran through sanctions and threats. In recent decades, controlling Iran's power in the region has been the main axis in US' Middle East policy.

Emphasis on the issue is based on a prevailing strategic approach in the US, which considers maintaining equilibrium among major ME powers the best way to protect US' interests and security. Iran's active role in the fight against terrorism and extremism exercised by the IS and al-Qaeda, and its nuclear deal with world powers has augmented its regional influence more than ever. Obama and his State Secretary John Kerry repeatedly stressed that the nuclear deal was, beyond proliferation, a turning point for the resolution of wider regional issues. Finding that the best way to handle Iran's influence in the region was to encourage its involvement in major regional issues, particularly in the Syrian crisis, the Obama administration turned away from George W. Bush's policy of sanctions and threats. The shift worried US'

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Finding that the best way to handle Iran's influence in the region was to encourage its involvement in major regional issues, particularly in the Syrian crisis, the Obama administration turned away from George W. Bush's policy of sanctions and threats. The shift worried US' traditional allies in the region, including Saudi Arabia, Israel, Turkey, and even Egypt, so much so that each of these countries, through its own specific method, called on the US to restrict Iran's role.

traditional allies in the region, including Saudi Arabia, Israel, Turkey, and even Egypt, so much so that each of these countries, through its own specific method, called on the US to restrict Iran's role.

On the other hand, the unprecedented growth of terrorism in the region, convinced the US and other global powers like Europeans, Russia, China, Japan, and India of the necessity for Iran's

participation in the regional order. In other words, Iran's integration in regional issues was effectively caused by a geopolitical urge among the powers to prevent the spread of instability and extremism in the Middle East, which had wreaked great havoc on their interests, including an immigration rush, citizens who joined terrorist groups, trade, and energy. Even though the Obama administration wisely tried to create a balance between the nuclear deal and Iran's regional role, selling the deal and cooperation with Iran as something in the interest of US allies in the region, the political and bureaucratic structure in the US was stronger

than to let the paradigm shift become fully realized. That resembles the scenario in which US allies like Japan, South Korea, and India were frustrated with US policies years after President Nixon's deal with China in the 1970s.

Attacking Obama's legacy, Trump has once again resorted to the old method employed by US conservatives, i.e. to use pressure in order to control

Iran. He emphasizes that no option is taken off the table, implying the possibility of a military invasion against Iran. The main problem with Trump's policy toward Iran is the reduction of Iran relations to the nuclear deal and an absolute negligence of the Iran's significant role in regional

issues and the fight against terrorism. But the success of Trump's policy faces two major problems: how to fight terrorism and how to persuade other world powers.

... On the other hand, world powers like Europeans, Russia, China, and others agree on commitment to and legitimacy of the nuclear deal and the necessity for Iran's involvement to participate and cooperate in regional crises and the fight against terrorism and extremism. It is in the same line that they constantly call for détente between Iran and Saudi Arabia.

If Trump fails to create balance between the nuclear deal and Iran's regional role, it will cause further distrust on the part of Iran on the efficiency of collective collaboration in the region. This will doubtlessly cause rifts in US' international position, because, more than anything, it will challenge multilateral cooperation for sustainable security and stability, encouraged by the world community. Trump's policy of reconsidering the nuclear deal will start a new era of bilateral political-security blocs (Saudi-US or US-Russia for instance) in the region, which will sure be seen by third parties, like Iran, to be against their interests.

Last but not least, the truth is that Trump's policies in the Syrian crisis, the nuclear deal, ties with Russia, China, and regional allies like Saudi Arabia and Turkey, and even the fight against terrorism have remained mere slogans and failed to turn into specific strategies. The American bureaucratic, political, and media structure is now vehemently standing against implementation and internalization of such policies. In such circumstances, the best policy for Iran is to increase its legitimacy by keeping its international commitments under the nuclear deal. On the other hand, relying on its national power and geopolitical advantage, the country should adopt

an innovative, multilateral approach in order to play an even more active role in the fight against terrorism and the resolution of regional crises. If so, Trump will definitely fail to form a new anti-Iran coalition based on the nuclear dossier and terrorism.

Source: <http://www.eurasiareview.com>, 02 March 2017.

OPINION – Charles Kenny

Time to Get Serious about Nuclear Power

While the US remains lukewarm about nuclear power, shutting down plants as much as it is opening new ones, the developing world is rapidly adding capacity. Ten new plants came online in 2016, nine of them in the developing world, supporting the largest addition of nuclear power since 1990. This is good news for people living in developing countries and for the global climate, but to make faster progress with safer designs, it is high time America started investing in next-generation nuclear power.

Ten new plants came online in 2016, nine of them in the developing world, supporting the largest addition of nuclear power since 1990. This is good news for people living in developing countries and for the global climate, but to make faster progress with safer designs, it is high time America started investing in next-generation nuclear power.

This year, Russia, China, India, Pakistan, Slovakia, South Korea and the United Arab Emirates will turn on new reactors. The International Atomic Energy Agency suggests nuclear production could grow 60 percent by 2030, powered by growth in Asia and the Middle East. And Russia and China are both taking a considerable share of the global business opportunities involved. In 2015, Kenya signed a deal with China, for example, to construct a nuclear power plant by 2025. The year before that, Russia inked deals to sell 10 power plants to India and as many as eight more to South Africa.

Poor countries need more power, and Planet Earth needs that power to come from low-carbon sources. No country in the world enjoys a high quality of life — a decent income and good health

— without consuming a lot of energy. Because of their economic progress, developing countries will account for two-thirds of global energy demand over the next 25 years. Nuclear power will be a healthy addition to the production mix.

Sure, some countries oppose the proliferation of nuclear power plants, including Germany, where politicians have promised to phase out such reactors by 2022. But deaths from the only two deadly nuclear power accidents, Chernobyl and Fukushima, suggest that global nuclear power generation kills perhaps one person per trillion kilowatt hours of generated electricity. That compares to roughly 100,000 deaths per trillion kilowatt hours from the air pollution caused by coal-fired plants. Power generation from fossil energy, including coal, causes 54,000 US deaths each year alone.

Nuclear power is also a zero-carbon energy source and the only one that's been scaled to provide the bulk of an industrialized country's electricity needs, including 80 percent of French production. While costs for solar are dropping rapidly, there are limits to how much an energy network can rely on intermittent power sources that produce less when the sun doesn't shine. That's why, for all of the advances in renewable technologies like solar and wind, nearly two-thirds of US zero-carbon energy is still nuclear and why, for all the impressive growth of solar and wind capacity in Germany, electricity production from coal and natural gas production has been climbing there since 2011. It's also why the Intergovernmental Panel on Climate Change suggests that the cheapest and most effective course to limiting climate change involves nuclear power.

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But for all that the global record suggests nuclear generation is safe, it could still be safer and cheaper and produce less radioactive waste. There are a number of designs in development that reduce the risk of meltdowns and more efficiently burn fuel so there is even less waste. Some of the designs – many of them pioneered in the US – also limit the potential to turn reactor products into weapons. A molten salt reactor was built in the 1960s at Oak Ridge National Laboratory, for example; it uses liquid fuel rather than solid rods, one of a number of features that make it inherently safer and more efficient.

But the US didn't develop the technology further, putting resources behind the pressurized water reactor design instead. These remain the most common nuclear power plants in the US today. The Chinese Academy of Sciences is using lessons learned from Oak Ridge to build its own molten salt reactor to come online in the early 2020s – some 60 years after the US took the lead. This lack of American progress reflects that the US simply

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doesn't commit the needed resources to fund new technologies: From 2000 to 2014, the US Department of Energy spent \$1.2 billion a year on nuclear energy research – less than 1 percent of total government R&D expenditure.

For national security, American politicians would doubtlessly prefer reactor technologies that don't generate large quantities of weapons-ready nuclear material as a by-product. They would also presumably prefer that developing countries buy nuclear technology from America, not Russia or China. Just imagine the economic gains from having US firms building the next generations of nuclear power plants worldwide. Finally, to tackle

climate change, we shouldn't be waiting more than a half-century to get from new designs to commercial-scale reactors. All of which suggests that it's in America's best interest to push the government to spend more on nuclear power research and development.

Source: <http://www.ozy.com>, 06 March 2017.

NUCLEAR STRATEGY

GENERAL

Stockpiles of Nuclear Weapons around the World

North Korea launched four ballistic missiles, leading to renewed condemnation from the international community. This latest action by the East Asian nation, which has now carried out dozens of missile launches and five nuclear tests, was described by Japanese Prime Minister Shinzō Abe as "an extremely dangerous action". North Korea, on the other hand, says joint military exercises by the US and South Korea are at fault: "The situation on the Korean peninsula is again inching to the brink of a nuclear war," Ambassador Ja Song Nam said in a letter to the UN security council.

It is estimated that North Korea now has 10 nuclear weapons, up from six or eight in 2013. This increase is in contrast to an overall decrease in the number of nuclear weapons worldwide. The SIPRI has estimated that the number has fallen by almost a third, from 22,600 in 2010 to around 15,395 last year. That said, SIPRI also states that both the US and Russia are going through extensive modernising programmes for their remaining weapons.

The main factor in this reduction is the diminishing numbers of warheads held by the US (which dropped from around 9,600 to 7,000 in that period) and Russia (which went from 12,000 to 7,290). The UK figure also dropped, from 225 to 215.

But some countries' arsenals have grown: China was thought to have 260 warheads in early 2016,

compared with 240 in 2010. India and Pakistan have also seen their figures creep up in recent years: India is thought to have between 100 and 120 nuclear weapons now, compared with between 60 and 80 in 2010, while Pakistan may have as many as 130, up from 70-90. There were an estimated 15,400 nuclear weapons in 2016 – 32% down on 2010.

Source: <https://www.theguardian.com>, 11 March 2017.

EU

Europe Seeks Collective Nuclear Strategy

European officials are discussing a plan...in which "France's [nuclear] arsenal would be repurposed to protect the rest of Europe and would be put under a common European command, funding plan, defence doctrine, or some combination of the three. It would be enacted only if the Continent could no longer count on American protection."

The fact that Europe is even discussing this subject is remarkable. Post-war Europe is famously pacifist and, at least until recently, has been at the vanguard of global nuclear disarmament. That this issue is now being openly

and seriously discussed by European leaders, the mainstream media and a growing number of European citizens speaks to the anxieties pulsing through the Continent; anxieties that include a resurgent, combative Russia to the East, a retreating US presence in regions critical to European strategy, and a more independent Britain.

As informative as it was, the *Times* article did not get to the heart of this issue. While the notion of bringing France's nuclear weapons under a "common European command" sounds rational, the fact is, when it comes to European integration on any issue, there is no "common European command." Germany is Europe's largest nation and the most powerful economically and politically. Germany's mere presence in any

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collective European entity makes it the de facto leader. Granting nukes to a “common European command” means granting nukes to Germany. This is the issue that we really ought to think on: Is Europe—is the world—comfortable with Germany getting nuclear weapons? We are still early in the conversation and, as Fisher explained, some significant hurdles have to be overcome before Europe forms any sort of common nuclear strategy.

But the fact that this discussion is even underway—that it hasn’t been flatly dismissed or consumed in a massive public outcry—is extremely revealing. The fact that this conversation is even taking place shows that there is a growing appetite for some sort of overarching pan-European nuclear and military strategy. Consider too that the factors *compelling* Europe to think in this direction are not going away anytime soon. To the contrary, world conditions and conditions inside Europe will intensify the urge to develop some sort of nuclear security blanket. This is a major development that needs to be closely watched. Fisher wrote, “Though no new countries would join the nuclear club under this scheme, it would amount to an unprecedented escalation in Europe’s collective military power and a drastic break with American leadership.”

Today, nuclear weapons are seen primarily as a geopolitical issue. Whenever nuclear weapons are discussed, it’s generally in the context of strategy and leverage.

Many will probably learn of Europe’s developing nuclear strategy and think, *America has nukes, Britain has nukes, and Russia has nukes. Isn’t it fair for Europe also to have nukes?* The answer is simple: Europe’s history is fraught with

competition and conflict. Germany, in particular, has been unable to exist peacefully with its neighbours for longer than a few decades. Today, multiple factors are converging over Europe that are resurrecting the historic tendencies that inevitably result in war. The development of some sort of European nuclear strategy would mean that Europe’s next major conflict will be nuclear.

Source: [https:// www. thetrumpet. com](https://www.thetrumpet.com), 08 March 2 017.

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US needed to revive its nuclear arsenal, “I am the first one that would like to see...nobody have nukes, but we’re never going to fall behind any country even if it’s a friendly country, we’re never going to fall behind on nuclear power.”... “It would be wonderful, a dream would be that no country would have nukes, but if countries are going to have nukes, we’re going to be at the top of the pack.”

annual Conservative Political Action Conference (CPAC) on 24th February. Trump takes top billing at the conference a day after his key

advisers, chief strategist Steve Bannon and chief of staff Reince Priebus, appeared on the CPAC stage to discuss Trump’s agenda and rail against the media.

‘Top of the Pack’: In the Reuters interview... Trump said the US needed to revive its nuclear arsenal, “I am the first one that would like to see...nobody have nukes, but we’re never going to fall behind any country even if it’s a friendly country, we’re never going to fall behind on nuclear power.”... “It would be wonderful, a dream would be that no country would have nukes, but if countries are going to have nukes, we’re going to

USA

Trump: US Must be ‘Top of the Pack’ in Nuclear Weapons Capability

President Trump has expressed concern that the US has “fallen behind” in its nuclear weapons capacity and that he would like to restore its supremacy. ... Trump said, he would prefer a world free of nuclear weapons but otherwise the U.S should be “at the top of the pack.” The remarks came as Trump prepares to address the

behind any country even if it’s a friendly country, we’re never going to fall behind on nuclear power.”... “It would be wonderful, a dream would be that no country would have nukes, but if countries are going to have nukes, we’re going to

be at the top of the pack.”

The comments were his first on the US nuclear arsenal since taking office. In December – hours after Russian President Vladimir Putin pledged to enhance his country’s nuclear forces – Trump tweeted that the US “must greatly strengthen and expand its nuclear capability until such time as the world comes to its senses regarding nukes.” When asked that if he would raise Russia’s apparent breach of an arms control treaty with Putin, Trump replied: “I don’t even know if they are discussing meetings right now, but if I meet, if and when we meet, I would bring it up.” Trump also dismissed the New START agreement, a key US-Russia nuclear disarmament treaty, as “a one-sided deal.” The treaty came up in a phone conversation between Trump and Putin in January.

Accuses China of Currency

Manipulation: In a wide-ranging interview, Trump also declared China the “grand champions” of currency manipulation and said Beijing should be doing more to rein in North Korea, “I think they could solve the problem very easily, if they want to,” he said of China. Questioned about his support for the European Union, Trump said he was “totally in favour of it,” adding: “I think it’s wonderful if they are happy. If they are happy, I am in favour of it.” Senior Trump administration figures have been in Europe ...seeking to reassure longstanding US allies amid concerns over apparently contradictory messages coming from the White House. ...

Source: <http://edition.cnn.com>, 24 February 2017.

Facing Test of Resolve, Trump Pushes for Completion of N Korea Strategy Review

Faced with a growing test of resolve for a new US president who vowed while campaigning to get tough on North Korea, Trump’s aides are pressing to complete a strategy review on how to counter Pyongyang’s missile and nuclear threats. Pyongyang’s latest missile launches and the assassination in Malaysia of North Korean leader

Kim Jong Un’s estranged half-brother have added urgency, driving home the need for Washington to confront the security challenge.

All options are on the table, ranging from tighter sanctions aimed at pushing North Korea back into disarmament talks, to a return of US nuclear weapons to South Korea, and even pre-emptive air strikes on North Korean missile installations, senior US administration officials said. They added a consensus was forming around relying for now on increased economic and diplomatic pressure – especially by pressing China to do more to rein in North Korea – while deploying advanced anti-missile defences in South Korea and possibly in Japan, as well.

Among the other possibilities, one US official said, was returning North Korea to the US list of countries that support terrorism. That would be a response to the suspected use of nerve gas to kill Kim’s brother at a Malaysian airport in February. It would subject Pyongyang – already heavily sanctioned by the UN and individual states,

All options are on the table, ranging from tighter sanctions aimed at pushing North Korea back into disarmament talks, to a return of US nuclear weapons to South Korea, and even pre-emptive air strikes on North Korean missile installations.

so far to little effect – to additional financial sanctions that were removed when it was taken off the list in 2008. For now, US officials consider pre-emptive military action far too risky, given the danger of igniting a regional war and causing massive casualties in Japan and South Korea and among tens of thousands of US troops based in both allied countries. Such ideas could gain traction, however, if North Korea proceeds with a threatened test of an ICBM capable of hitting the US. Just before he took office in January, Trump tweeted: “It won’t happen!” when Kim said North Korea was close to testing an ICBM. Trump also could opt for escalating cyber attacks and other covert actions aimed at undermining the North Korean leadership, a US government source said.

Review could be Completed this Month: The review is expected to be completed by the end of March.... Decisions could be held up, however, by

the slow pace at which Trump has been filling national security jobs. Trump is known to have little patience for detailed foreign policy discussions, but officials said he seemed to have heeded a warning from his White House predecessor, Barack Obama, that North Korea would be the most urgent international issue he would face – so much so that he requested intelligence briefings on the issue. While officials have stressed the need to persuade China to do more to pressure North Korea, Trump's first concrete response to North Korea's missile tests has been to start installing an advanced anti-missile defence system in South Korea, which has incensed Beijing. Diplomats said the move might reassure US allies but could backfire by antagonising China, which regards the system as a threat, and make it less willing to step up sanctions on its neighbour. "You have to adjust and calibrate all the options based on the facts on the ground," said an administration official, who added that media reports highlighting military options were overblown. "The ability to have sanctions that pack some punch and are more dynamic than we have had in the past is going to be dependent to some extent on Chinese cooperation," he said.

Chinese diplomats argue that Beijing is doing all it can. Bonnie Glaser at Washington's Centre for Strategic and International Studies said China could close banks that conduct illicit financial transactions with North Korea, prosecute front companies facilitating business, cut off oil exports and expel North Korean workers.

No Good Military Options: Glaser said she saw no good military option. While past talks have failed, she would not be surprised if Trump wanted to try diplomacy. One idea could be to discuss a freeze in North Korea's nuclear and missile programmes, which would fall short of current demands for nuclear disarmament. "North Korea may insist on being recognised as a nuclear weapons state as a precondition, in which case the US would have to decide whether to make that concession," she said. Evans Revere, a former senior diplomat who dealt with Korea under President George W. Bush, said Washington

should pressure North Korea with sanctions, military deployments and covert operations. "Doing this would ... compel the regime to rethink its course and make it more likely to return to dialogue and denuclearisation, lest it risk collapse," he said. Whether Trump will be willing to tolerate the level of risk needed to make such a strategy work remains unclear. "This is an administration that is more inclined to be averse to regime change than previous administrations," the first administration official said. "That's from the top down." "This administration intends to come up with options based on the cards we are dealt; not try to change the deck entirely, which is what regime change is."

Source: <https://thewire.in>, 08 March 2017.

BALLISTIC MISSILE DEFENCE

INDIA

India Successfully Test-Fires Interceptor Missile

In yet another step towards an operational two-tier BMD system, India on 01, March, tested a low-altitude interceptor missile to destroy an incoming ballistic missile over the Bay of Bengal. DRDO on February 11 had tested a high-altitude interceptor missile as part of the experimental BMD system, which is designed to track and destroy ballistic missiles both inside (endo) and outside (exo) the earth's atmosphere for a higher "kill" probability. While test in February, involved the "exo-atmospheric" interceptor missile hitting the target at an altitude of 97-km, the test-firing on 01 March was against an incoming missile at 15-km altitude.

Defence officials said the interceptor missile fired from the Abdul Kalam Island (Wheeler Island) off Odisha coast "successfully destroyed" the incoming "enemy" Prithvi missile, which was launched from the integrated test range at Chandipur, at 10.15am. "All the mission objectives were successfully met. The weapon system radars tracked the target and provided the initial guidance to the interceptor which could precisely home on to the target and destroyed it in the endo-atmospheric layer. The complete event including

the engagement and destruction was tracked by a number of electro-optical tracking systems using infrared imagery. Radars and telemetry stations tracked the target and the interceptor till the destruction of the target," said the defence ministry, in a statement.

The long-delayed BMD system, which requires an overlapping network of early-warning and tracking sensors, reliable command and control posts, land and sea-based batteries of advanced interceptor missiles, will take at least another two years to become ready for deployment to protect a city or strategic installation. Development of this two-layered missile shield began in late-1990s, with the first interceptor missile being tested in 2006. The system has been tested over 10 times till now, with at least three of the tests failing. Moreover, it has not been tested so far in an integrated mode, with both exo and endo interceptor missiles together, which will be the real challenge. Only the US, Russia, Israel and China have operational BMD systems as of now. The ongoing testing of the Phase-I of the indigenous BMD system, with interceptors flying at 4.5 Mach high-supersonic speeds to intercept enemy missiles, is meant to tackle hostile missiles with a 2,000-km strike range. The Phase-II, in turn, will be geared for taking on 5,000-km range missiles, with interceptors at hypersonic speeds of 6-7 Mach.

Source: <http://timesofindia.indiatimes.com>, 02 March 2017.

USA-SOUTH KOREA

US Deploys Anti-ballistic Missile Defence System to South Korea

The US military has begun deploying an anti-ballistic missile defence system to South Korea, following a string of missile tests by North Korea, the US Pacific Command said 06, March.

The announcement came after nuclear-armed North Korea launched four missiles which it said was part of training for a strike on US bases in Japan. Three of the missiles came down provocatively close to Japan.

Deployment of the THAAD system "contributes to a layered missile defence system and enhances the US-ROK Alliance's defence against North Korean missile threats," the Pacific Command said in a statement. "North Korea's accelerating programme of nuclear weapons tests and ballistic missile launches constitute a threat to international peace and security, and are in violation of multiple United Nations Security Council resolutions." South Korea and the US agreed last year to install the THAAD system, which China has repeatedly denounced as a threat to its security.

The statement from the Pacific Command, which oversees US military operations in the Asia-Pacific, pointed out that the system is "a strictly defensive capability and it poses no threat to other countries in the region." The system is meant to intercept and destroy short and medium-range ballistic missiles during their final phase of flight.

Source: <https://tribune.com.pk>, 07 March 2017.

NUCLEAR ENERGY

CHINA

Nuclear Power has Big Role in Energy Security

... According to IHS Market Inc, many of the plants are going to be much less utilized than what they had initially been planned for, despite the growing power demand, it said. China had 35 nuclear power reactors in operation with a total installed capacity of 33.6 GW by the end of 2016,

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accounting for 2% of the country's overall installed electricity capacity... .

China added about 8 GW of nuclear power capacity last year, boosting its installed capacity to about 34 GW, according to BMI Research, which provides macroeconomic, industry and financial market analysis. Nuclear power is expected to reach 58 GW by the end of the decade, the National Development and Reform Commission said in December in its 2016-20 development plan for the power industry. He said, China wasted a total 46.2 billion kilowatt-hours of power last year, a waste of 19 percent as its power industry was capable of generating 242.8 billion kilowatt-hours that year. The suspension of nuclear reactors also leads to a waste of uranium resources, the reactor fuel, while increasing the difficulties and cost of nuclear waste disposal, he said. ...The government has vowed to make renewable energy play an integral role in sustainable development, boosting the amount of non-fossil energy to 15 percent by 2020 and 20 percent by 2030, with coal consumption reduced to 62 percent of energy use by 2020. ...

Source: <https://www.pressreader.com>, 08 March 2017.

China Sets Out Nuclear Plans for 2017

China will complete construction of five nuclear power reactors and start construction of eight more in 2017, according to plans released by the country's National Energy Administration (NEA). Planning for a further eight reactors will also be progressed this year. In its Energy Work Guidance Opinion for 2017, published on 10 February, the NEA said construction will be completed of the Sanmen 1 and Haiyang 1 AP1000 units, the Taisha EPR and the Fuqing 4 and Yangjiang 4 CPR-1000 units. These, together with "other projects", will add some 6.41 GWe of nuclear generating capacity....

The NEA's plan calls for the safe development of nuclear power. ... It will actively promote the construction of "qualified" nuclear power projects and there would be an orderly approval of coastal projects. There will be continued implementation of major nuclear power science and technology projects to promote the construction of the high-temperature gas-cooled demonstration project in Shidaowan in Shandong province. It also...would "prudently" promote the preliminary work of small reactor demonstration projects and "actively explore the comprehensive utilisation of nuclear energy."

The Administration plans to start construction of eight units in 2017, but it did not name them or state the type of reactors they will feature. Preparatory work is also to be carried out in 2017 on a further eight units. These include units 3 and 4 of Sanmen, Ningde units 5 and 6, and two units each at new plants at Zhangzhou in Fujian province and Huizhou in Guangdong province. Together with other projects, these will add 9.86 GWe of nuclear generating capacity. The NEA also said China will promote the export of its nuclear power technology. It is to carry out follow-up cooperation work related to the planned construction of units at Karachi, Pakistan, as well as promote the implementation of the Hualong One reactor design in the UK. The country will also strengthen its nuclear cooperation with other countries, including Russia and the USA. It will also seek "steady progress" on nuclear power project cooperation with Argentina, Romania and Turkey.

China, the NEA said, would be involved in the reorganisation of France's Areva. In February, Areva said the capital of New Areva – the entity comprising Areva's nuclear fuel cycle activities ahead of the sale of its reactor business to EDF - "remains open" for an investment by CNNC.

China added about 8 GW of nuclear power capacity last year, boosting its installed capacity to about 34 GW, according to BMI Research, which provides macroeconomic, industry and financial market analysis. Nuclear power is expected to reach 58 GW by the end of the decade.

China's operating nuclear generating capacity will double over the next 5 years under the country's recently-published 13th FYP. Under that plan, over the next 5 years China aims to have all 4 Sanmen and Haiyang AP1000 units in operation by the end of this year. It also aims to develop Hualong One demonstration projects at Fuqing and Fangchenggang and begin construction on the CAP1400 demonstration project at Shidaowan. China will also start building a number of coastal NPPs and carry out preliminary work for inland projects.

Source: <http://www.world-nuclear-news.org>, 02 March 2017.

China-Inland Nuclear Power Station in the Pipeline

The establishment of inland nuclear power plants will not only boost local employment and ensure a steady power supply, but also reduce the reliance on fossil fuel energy sources and the emissions of carbon dioxide and other major pollutants, experts noted. The comments came after reports that the country is moving ahead with its plan to build nuclear power stations in inland areas, with pre-selected sites including Taohuajiang in

Central China's Hunan Province, Xianning in Central China's Hubei Province and Pengze in East China's Jiangxi Province. The sites have almost been confirmed and construction is expected to start during the 13th Five Year Plan period (2016-20), *China Youth Daily* reported, citing Wang Yiren, vice director of the State Administration of Science, Technology and Industry for National Defense.

Establishing nuclear power plants in inland areas will ensure a stable supply of electricity and optimize energy structures by reducing the reliance on fossil fuel energy, Li Ning, the dean of

the College of Energy at Xiamen University, told the *Global Times* on 20th February. "For example, Hunan is a province with a large electricity demand, but has a shortage of hydropower and is far away from coal mines. In this regard, building a nuclear power plant here will alleviate pressure on resources and transportation volume," he explained.

China had 35 nuclear power units in commercial operation by the end of 2016, with a combined installed capacity of 33,632 megawatts, according to a report released by the China Nuclear Energy Association (CNEA) on February 13. However, China's electricity generated by nuclear power represents only 3 percent of the country's total, much lower than the global average of 11 percent... The report noted that China's nuclear

power capacity would reach 58,000 megawatts by 2020 and the capacity of plants under construction would be 30,000 megawatts. "If the plan is implemented, thousands of jobs are expected to be created during about five-year construction period. And some 1,000 to 2,000 jobs will be produced by one nuclear power plant. Besides, local factories will be the first in line for electricity generated by nuclear power plants, which will meet their

growing demand," Li said.

The investment returns from nuclear power stations is substantial, according to Prof. Wang Dezhong Shanghai Jiao Tong University. ...In 2016, electricity generated by nuclear energy was 210.5 billion kilowatt hours, the equivalent of 65.68 million tons of standard coal used in coal-fired electricity-generating plants, according to the CNEA report.

Safety Standards: Building nuclear power plants inland is essentially the same as building them in coastal areas, and security can be ensured if

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workers comply with security codes and standards, according to Wang Yiren in the *China Youth Daily* report. Wang from Shanghai Jiao Tong University said that building an inland nuclear power station is technically feasible. An inland nuclear power station will use cyclical water cooling towers, instead of draining away or pumping water from rivers, he said. About 60 percent of nuclear power stations in the world are built in inland areas, Li said, noting that safety issues are unlikely to occur if they are built in non-seismic regions. Though the safety of third-generation nuclear power plants has been greatly improved, compared with those in the 1970s, some issues need to be solved for the establishment of inland nuclear power stations, according to Li. ...

Source: <http://www.globaltimes.cn>, 20 February 2017.

UK

UK Nuclear Power Stations 'could be Forced to Close' after Brexit

...Nuclear power stations would be forced to shut down if new measures are not in place when Britain quits a European atomic power treaty in 2019, an expert has warned. Rupert Cowen, a senior nuclear energy lawyer at Prospect Law, told MPs on the 28th February that leaving the Euratom treaty as the government has promised could see trade in nuclear fuel grind to a halt. The UK government has said it will exit Euratom when article 50 is triggered. The treaty promotes cooperation and research into nuclear power, and uniform safety standards. ...Asked by the chair of the Commons business, energy and industrial strategy select committee if that would see reactors switching off, he said: "Ultimately, when their fuels runs out, yes." Cowen said that in his view there was no legal requirement for the UK to leave Euratom because of Brexit: "It's a political issue, not a legal issue."

Nuclear power stations would be forced to shut down if new measures are not in place when Britain quits a European atomic power treaty in 2019 leaving the Euratom treaty as the government has promised could see trade in nuclear fuel grind to a halt.

The UK nuclear industry would be crippled if new nuclear cooperation deals are not agreed within two years, a former government adviser told the committee. ...The government said it was working on alternative arrangements to Euratom. Describing the notification of withdrawal as a "regrettable necessity" when article 50 is triggered, energy minister Jesse Norman said that the UK saw "clear routes" outside of Euratom to address issues such as "We take this extremely seriously and are devoting serious resources [to looking at new arrangements]," he told the Lords science and technology committee....

Source: <https://www.theguardian.com>, 28 February 2017.

NUCLEAR COOPERATION

INDIA-USA

Westinghouse CEO Visits India, Keeps Nuclear Project Deal in Andhra Pradesh Alive

A deal to build six Westinghouse nuclear reactors in India is still alive, but to be viable must be ring-fenced from a financial crisis at the US reactor maker and its Japanese parent Toshiba Corp, people with direct knowledge of the matter told Reuters. Westinghouse would only provide reactors for the six AP1000 units to be built in the southern state of Andhra Pradesh. It would not carry out civil engineering work to build the entire project - an approach that led to cost overruns at its projects in the US

Toshiba, in February, booked a \$6.3 billion charge arising from those overruns, forcing it to put its core flash-memory chip business up for sale and pull out of building nuclear power plants abroad. Despite the financial crisis, Westinghouse CEO Jose Gutierrez flew in to India...for talks with state-run NPCIL and the DAE that reports to PM Modi, said two people who spoke on condition of anonymity. "We still have daily meetings and

things are going to plan," said one, echoing comments to Reuters on February 17 by India's atomic energy secretary Sekhar Basu....

US-India Nuclear Cooperation: Modi and former US President Obama made finalising the multi-billion-dollar reactor deal

by mid-2017 the centrepiece of their Washington summit in June 2016. That deadline will probably slip but, in an industry inured to lengthy talks, some participants now suggest a final agreement would still be possible by the end of year 2017. Closing the deal would crown a US-India civil nuclear accord championed by George W. Bush that had been slow to advance because of teething troubles over liability in the event of a nuclear accident. Now, existential doubts over the viability of nuclear power at a global level threaten Modi's ambitious goal of tripling India's nuclear capacity by 2024 to wean Asia's third-largest economy off polluting fossil fuels like coal.

Toshiba has asked a Japanese law firm to estimate the potential financial impact if Westinghouse files for Chapter 11 bankruptcy to protect itself from creditors and allow it to continue operating. Indian engineering group Larsen & Toubro, a potential partner that has signed a MoU with Westinghouse to supply nuclear plant elements and do civil works, still views the India project as viable. ...

"Safest and Most Economical": Westinghouse advertises its AP1000 pressurised water reactor, with a generation capacity of 1,110 megawatts, as "the safest and most economical nuclear power plant available". Yet it was the same reactor that

Modi and former US President Obama made finalising the multi-billion-dollar reactor deal by mid-2017 the centrepiece of their Washington summit in June 2016. That deadline will probably slip but, in an industry inured to lengthy talks, some participants now suggest a final agreement would still be possible by the end of year 2017.

While technical negotiations have reached an advanced stage, more work is needed on the commercial side of the deal that would include financing from the Export-Import Bank of the US. US ExIm, though, has lacked a quorum on its board of directors, preventing it from issuing loans over \$10 million, and the attitude of new President Trump's administration to the India reactor deal remains unclear. Those are grounds enough for scepticism.

was the source of its financial problems in the US, and construction of a fleet of AP1000s in China has also faced delays. Critical to managing costs is ensuring that any overruns on the construction side of the project would be borne by contractors and not Westinghouse, as is the norm in India, one of the sources said.

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Source: <http://www.hindustantimes.com>, 08 March 2017.

KAZAKHSTAN-RUSSIA

Kazakhstan, Russia Re-affirm Nuclear Energy Development Cooperation

Kazakhstan and Russia in October 2016, signed an updated MoU to cooperate on nuclear energy projects during a meeting in Astana. The memorandum focuses on cooperation in

developing nuclear energy joint ventures using existing infrastructure, including uranium mining segments, conversion, enrichment, fuel fabrication and the final stage of the nuclear fuel cycle. It also reaffirms earlier agreements of the Comprehensive Programme of Kazakh-Russian Cooperation in nuclear energy.

The MoU was signed within the framework of the October 2016 13th Forum of Interregional Cooperation between Kazakhstan and Russia. The trilateral memorandum was discussed during a...meeting between Kazakh Prime Minister Bakytzhan Sagintayev, Rosatom State Atomic Energy Corporation Director General Alexei Likhachev and a representative of Kazakh national uranium importer and exporter Kazatomprom.... The group also discussed Rosatom's participation in EXPO 2017. Rosatom, established in 2007, is the regulatory body of the Russian nuclear complex, which includes more than 360 enterprises. It is headquartered in Moscow and runs all nuclear assets of the Russian Federation, both civil and military

Source: <http://astanatimes.com>, 01 March 2017.

IRAN-EU

EU, Iran Agree to Boost Nuclear Cooperation

The European Union and Iran concluded a 2-day high-level seminar in Brussels on nuclear cooperation with success, the two sides said in a press statement. The seminar titled "International Nuclear Cooperation: Expectations and Responsibilities" was a joint initiative of EU Commissioner for energy and climate actions Miguel Arias Canete and Iranian Vice President and Head of the Atomic Energy Organization of Iran, Ali Akbar Salehi.

"The seminar allowed for fruitful exchanges between a high level delegation from Iran,

including prominent parliamentarians, as well as senior officials from the Atomic Energy Organisation of Iran and the Ministry of Foreign Affairs with participants from several European Commission services, the External Action Service, as well as representatives from third countries and the International Atomic Energy Agency," noted the statement.

Dominique Ristori, Director-General of the European Commission's Directorate General for Energy, said that international civil nuclear cooperation can make a major contribution to ensuring the responsible use of nuclear energy. In a message transmitted on behalf of Ali Akbar Salehi, it was emphasized that the proactive framework for nuclear cooperation was established by the Joint Comprehensive Plan of Action, ranging from research and development to nuclear safety, promises

a bright future for further cooperation in different peaceful nuclear fields. ...

Source: Kuwait News Agency, 01 March 2017.

RUSSIA-TAZIKISTAN

Russia and Tajikistan Plan Nuclear Cooperation

Russia and Tajikistan signed an agreement on cooperation in the peaceful uses of nuclear energy, during Russian President Vladimir Putin's visit to the Central Asian country. Tajikistan is mineral-rich and has some uranium deposits, but most of its electricity is hydroelectric, with a small part sourced from natural gas. The agreement was signed by Farhod Rakhimov, president of the Academy of Sciences of the Republic of Tajikistan, on behalf of the Tajik government, and Alexey Likhachov, director general of Rosatom, on behalf of the Russian government.

It provides the legal basis for interaction between the two countries in the nuclear power sector for

International civil nuclear cooperation can make a major contribution to ensuring the responsible use of nuclear energy. In a message transmitted on behalf of Ali Akbar Salehi, it was emphasized that the proactive framework for nuclear cooperation was established by the Joint Comprehensive Plan of Action.

the first time in history, while outlining cooperation in: the design, construction, operation and decommissioning of research reactors; used fuel and radioactive waste management; rehabilitation of tailing storage areas and utilization of decommissioned uranium mining and reprocessing facilities; production of radioisotopes; use of nuclear technology in industry, medicine and agriculture; education and training of highly skilled personnel for the nuclear power industry.

The two countries plan to form a joint coordination commission to manage this cooperation, with Rosatom's Central Asia office supporting nuclear companies in business development in Tajikistan.

Source: World Nuclear News, 28 February 2017.

USA–RUSSIA

Senate Bill would Restrict US Civil Nuclear Cooperation with Russia

Senator Benjamin Cardin (D-MD), along with a bipartisan group of senators that includes John McCain (R-AZ), Marco Rubio (R-FL), Lindsey Graham (R-SC), Amy Klobuchar (D-MN), and Dick Durbin (D-IL), introduced S.94, the "Counteracting Russian Hostilities Act of 2017." While widely reported on for its proposed sanctions on the Russian Federation for cyber attacks on the United States, S.94 also contains a little-discussed provision aimed at civilian nuclear trade with Russia.

Section 209 of the bill would penalize any person who makes an investment that directly and significantly contributes to enhancing the ability of the Russian Federation to construct civil nuclear power plants. While the bill certainly covers the construction of civil nuclear plants in Russia, it is broadly phrased in a manner that could cover Russia's construction of civil nuclear plants in other countries as well. The restriction on investments

is limited to nuclear power plant construction, but the bill also would penalize any person who sells, leases, or provides goods, services, technology, information, or support to the Russian Federation that "could directly and significantly facilitate the maintenance or expansion of the construction, modernization, or repair of civil nuclear plants by the Russian Federation." The dollar threshold for investments or goods, services, etc. is \$1 million per transaction and \$5 million per 12-month period.

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For real-world application, these restrictions would appear to cover support for power uprates, vessel head repairs, and steam generator replacements, among other non-construction activities. The bill does not distinguish between current or advanced designs, or between consulting services or the sale of major plant equipment. However,

the restrictions could be read to exclude research and development activities, which indirectly facilitate nuclear plant construction and operations. Finally, the bill applies only to actions on or after the date of enactment of the legislation, so any investment or support provided before that time would not be covered.

Penalties for violating the sanctions would be severe. The bill contains 12 possible penalties and requires that the president impose at least five of them on any person who violates Section 209. The penalties include debarment from government contracts, denial of export licenses, and freezing of banking accounts, as well as prohibiting a US financial institution from issuing more than \$10 million in loans over a 12-month period.

S.94 continues the trend of imposing additional restrictions on civil nuclear trade with Russia. Although nuclear-related exports are already controlled under 10 C.F.R. Parts 110 and 810 and the Export Administration Regulations (EAR) in 15

C.F.R. Parts 730-774, Congress in recent years has imposed additional restrictions on the transfer of technology to Russia. For example, in the National Defense Authorization Act of 2015 (NDAA), Pub. L. 114-92, § 3136, codified at 42 U.S.C. § 2077a, Congress imposed additional reviews by administrative agencies, including the Office of the Director of National Intelligence, of proposed transfers of civil nuclear technology to Russia. The NDAA also requires regular reports to Congress of any approved transfer of civil nuclear technology to Russia pursuant to Section 57b.2 of the Atomic Energy Act and 10 C.F.R. Part 810. S.94 has been referred to the Senate Committee on Foreign Relations, where it awaits further action.

Source: Alex S. Polonsky, Grant W. Eskelsen, <http://www.natlawreview.com>, 07 March 2017.

USA-UK

US Firm Supplying Three Nuclear Reactors for Plant in Cumbria is Feared Bankrupt

The firm supplying three reactors for a plant in Cumbria looks set to file for bankruptcy in the US – throwing Britain's energy policy into doubt. US nuclear firm Westinghouse Electric is considering the move as its owner Toshiba struggles with huge financial problems. Westinghouse is designing three reactors for a planned nuclear power plant in Moorside, Cumbria, 60 per cent owned by Toshiba.

The £10billion NuGen plant will eventually power up to six million homes as a key part of the Government's energy strategy. The project had already been thrown into turmoil when Toshiba announced a £5billion write down connected to its nuclear business in December. That crisis appears to be deepening with the potential bankruptcy of Westinghouse. Sources said Westinghouse Electric Co had brought in the legal firm Weil, Gotshal & Manges as an exploratory

step, and had not yet taken a decision on a bankruptcy filing.

Unions have called for the Government to get a grip on the country's nuclear strategy and invest in the plant. Justin Bowden, nuclear energy secretary for the GMB union, said: 'It looks like the crisis that everybody feared was taking place is now taking place. 'The only positive that can be taken from it is that they are now dealing with it rather than pretending to the outside world it isn't happening.

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We are still in the position of wondering how it is that the country's energy supply is left to the vagaries of foreign countries thousands of miles away. The average person must be scratching their head.' The AP1000 nuclear reactors Westinghouse is designing for the projects are being tested by the

Office for Nuclear Regulation and the Environment Agency.

The process is expected to finish this month. But it is feared that if different reactors are needed because of problems at Westinghouse it could set the project back significantly. Toshiba said it remained committed to the NuGen project until the final investment decision, but would then seek to sell its shares. It says it will 'consider participating in the project without taking on any risk from carrying out actual construction work'.

A spokesman added it was not aware of any intention for Westinghouse to file for Chapter 11 bankruptcy. In February it confirmed that selling Westinghouse was an option. The Japanese conglomerate faces huge pressure to publish its audited earnings after it postponed them a month ago to probe potential problems at Westinghouse further.

If it fails to meet that deadline it has until March 27 to file or face a delisting. NuGen declined to

comment on Westinghouse. Kepco, the South Korean power utility part-owned by the nation's government, has been in talks with Toshiba to buy a stake in NuGen, a joint venture between Toshiba and Engie of France. Some hope Kepco might keep the plan on track.

The Government has resisted putting public money into nuclear reactors. But in December the Japanese and British governments signed a memorandum of cooperation to increase collaboration in nuclear power. Japanese group Hitachi is planning a power station in Wylfa, north Wales. ...

Source: Rachel Millard, <http://www.thisismoney.co.uk>, 11 March 2017.

As the only volunteer for hosting the LEU bank, Kazakhstan faced no competition. But the country takes this project seriously. Potentially, it can discourage aspiring nuclear powers from developing their own nuclear fuel cycles and thereby limit the proliferation of nuclear weapons. From a more pragmatic standpoint, however, the LEU bank is an opportunity for Kazakhstan to increase its influence in the IAEA and promote its image as a nonproliferation movement leader.

For the Iranian side, it is an opportunity to continue developing its energy sector without violating the 2015 nuclear agreement struck with six world powers. Another Kazakhstan project that is likely to draw attention in 2017 is the LEU Bank. Owned and controlled by the IAEA, it will be located at the Ulba Metallurgical Plant in Oskemen. As the only volunteer for hosting the LEU bank, Kazakhstan faced no competition. But the country takes this project seriously. Potentially, it can discourage aspiring nuclear powers from developing their own nuclear fuel cycles and thereby limit the proliferation of nuclear weapons. From a more pragmatic standpoint, however, the LEU bank is an opportunity for Kazakhstan to increase its influence in

NUCLEAR NON-PROLIFERATION

KAZAKHSTAN

A Leader in Global Nuclear Policy?

Cases of voluntary nuclear disarmament are fairly rare. Along with Belarus, Ukraine, and South Africa, however, Kazakhstan is on the list of former atomic nations. Having once been at the heart of the Soviet nuclear program, the country closed its infamous Semipalatinsk Test Site in 1989 and transferred its atomic arsenal to Russia in the following years. Modern Kazakhstan has in fact rebranded itself as a supporter of non-proliferation policies and peaceful atomic energy...the role of this Central Asian republic should not be underestimated.

Kazakhstan often appears in news as a top uranium producer. In fact, since the country's decision in January to reduce the production of uranium by 10 percent, the world price of uranium ore increased 30 percent.

In this context, Iran's plan to buy 950 tons of uranium seems an appealing deal for Kazakhstan.

the IAEA and promote its image as a nonproliferation movement leader. Source: <http://thebulletin.org>, 02 March 2017.

NUCLEAR PROLIFERATION

IRAN

Nuclear Experts: IAEA Report Shows Iran "Not Fully Complying" with Nuclear Deal

The IAEA's latest report on Iranian compliance with the 2015 nuclear deal suggests "that Iran is not fully complying with the [agreement], or is at least pushing the envelope of compliance in a detrimental direction," the influential Institute for Science and International Security charged in a report... David Albright, the president of the institute, and Andrea Strickler, a senior policy analyst there, wrote that according to the IAEA's February 24 report, Iran seems to have violated heavy water and enriched uranium limits imposed by the agreement, which is formally known as the JCPOA.

By a "reasonable interpretation of the JCPOA," Iran is limited to "a total of 130 metric tonnes of

heavy water whether the heavy water is in Iran or under its control outside Iran," the authors noted. However, Iran currently has 124.2 metric tonnes of heavy water in country, and another 11 metric tonnes stored abroad. Tehran may also be in violation of the deal's limits on enriched uranium, the experts observed. While the IAEA report states that Iran's total enriched uranium stockpile did not exceed its 300 kilogram cap, "this value does not represent the total amount of uranium enriched up to 3.67 percent," the authors noted. "If all the [low-enriched uranium] had been included, Iran's stock would have exceeded the 300 kg cap," they wrote.

Tehran may also be in violation of the deal's limits on enriched uranium, the experts observed. While the IAEA report states that Iran's total enriched uranium stockpile did not exceed its 300 kilogram cap, "this value does not represent the total amount of uranium enriched up to 3.67 percent," the authors noted. "If all the [low-enriched uranium] had been included, Iran's stock would have exceeded the 300 kg cap.

Albright and Stricker also raised concerns that the IAEA report "does not discuss, and is cast in a way as to highly doubt, whether the inspectors have visited Iranian military sites." This access is needed "to verify JCPOA bans on nuclear weaponization activities which could contribute to the development of a nuclear explosive device and develop confidence in the absence of undeclared nuclear material and activity as mandated under the IAEA comprehensive safeguards agreement and reinforced by the Additional Protocol," they wrote. They also cited allegations that Iran exploited the deal's "quality assurance" criteria in order to conduct illicit mechanical testing of centrifuges. Overall, Albright and Stricker wrote, "the IAEA effort in Iran needs to be strengthened, in particular by gaining access to Iranian military sites and providing more comprehensive reporting, and that strengthening should be fully supported by the Board of Governors and the P5+1."

While promoting the nuclear deal, the Obama administration claimed that it cut off Iran's four pathways to a nuclear weapon, thereby ensuring that Iran will temporarily have a breakout time—the time required to develop a nuclear weapon—

of at least one year, enough time for the international community to respond. If Iran is allowed more nuclear material or faster centrifuges, its breakout time will be reduced. The concerns raised by Albright and Stricker suggest that Iran is failing to fully comply with the terms of the deal, while the international community is failing to hold it to account. The authors reported in September 2016 that Washington had granted Iran secret exemptions from some of its responsibilities under the nuclear deal, which Tehran would have otherwise failed to fulfil in time to receive nuclear-related sanctions relief.

Source: <http://www.thetower.org>, 06 March 2017.

NUCLEAR SAFETY

JAPAN

Japanese Utilities Enhance Nuclear Safety Cooperation

Three Japanese utilities - Chubu, Hokuriku and Tepco - have agreed to collaborate on improving their nuclear safety through technical cooperation. They own and operate the same types of reactors: BWRs, including Advanced Boiling Water Reactors (ABWRs). Chubu owns the Hamaoka nuclear power plant in Shizuoka prefecture, Hokuriku owns the Shika plant in Ishikawa prefecture and Tepco owns the Kashiwazaki-Kariwa plant in Niigata prefecture.

They announced the signing of an agreement through which they will collaborate in improving nuclear safety. They will cooperate in areas such as improving operator skills, including through exercises in training simulators. They will also share operating experience, including information on operation management and benchmarking.

"The geographic accessibility among these three

companies also allows them to cooperate on accident recovery and evacuation of residents in the event of a nuclear accident," Tepco said. Through the agreement, the utilities will send their engineers to the other partners' facilities in the event of an accident and provide assistance in recovery measures. The companies will also participate in joint nuclear emergency drills.

It will "enhance the effectiveness" of the Cooperation Agreement

between Nuclear Operators for Nuclear Emergencies, which was signed by Japan's ten electric power companies, Japan Nuclear Fuel Limited and the Japan Electric Power Development Corporation (J-Power) in October 2014. The three companies said they will "continue to make every effort to ensure further safety and reliability as nuclear operators". ...

Source: World Nuclear News, 07 March 2017.

NORWAY-ROMANIA

Norway Helps Improve Romania's Nuclear Safety

A nuclear safety cooperation project between Norway and Romania has been completed. The aim of the three-year collaboration was to enhance the capabilities of Romania's nuclear regulator. The project involved the Norwegian Radiation Protection Authority (NRPA), Romania's National Commission for Nuclear Activities Control (CNCAN) and the IAEA.

The project, which began in late 2013, had a budget of €4.2 million (\$4.4 million), of which 85% was covered by Norway and 15% by Romania. NRPA cooperated with Romania in a similar project

under European Economic Area cooperation in 2009-2011.

NRPA noted that Romania faced strict requirements for improved nuclear security after it joined the European Union in 2007. ... The main objective of the project was to improve the competence of CNCAN in eight specific areas through the exchange of experience, best practices and capacity building. The areas included: nuclear

safety; integrated management systems and knowledge management; oversight/inspections; safety of the transport of radioactive materials; emergency preparedness; control of radiation sources; decommissioning and radioactive waste management; and, safeguards. NRPA said the IAEA's involvement "guarantees the implementation of project activities in accordance with international standards and with the participation of international experts with special expertise in these areas".

The IAEA has assisted the Romanian regulator in updating multiple regulations, standards, methods and procedures, and the development of new documentation. All the new and revised documents take into account the latest IAEA and Western European Nuclear Regulators Association guidelines. Since the project started, 30 new regulations, methodologies, procedures and guidelines have been developed in Romania. In

addition, 16 regulations, methodologies, procedures and guidelines have been updated. NRPA's Ingar Amundsen said, "This has been an extensive project where we've wanted to make a difference for nuclear safety authorities in Romania. Norway also has everything to gain from this kind of preventive nuclear safety cooperation

The project, which began in late 2013, had a budget of €4.2 million (\$4.4 million), of which 85% was covered by Norway and 15% by Romania. NRPA cooperated with Romania in a similar project under European Economic Area cooperation in 2009-2011.

All the new and revised documents take into account the latest IAEA and Western European Nuclear Regulators Association guidelines. Since the project started, 30 new regulations, methodologies, procedures and guidelines have been developed in Romania. In addition, 16 regulations, methodologies, procedures and guidelines have been updated.

with a European country.”

A conference was held in Bucharest between 28 February and 1 March for the partners to discuss the results of the collaboration. They also discussed the challenges and lessons learned during the implementation of the project.

Source: <http://www.world-nuclear-news.org>, 03 March 2017.

NUCLEAR SECURITY

UK

How the UK Seeks to Enhance Nuclear Security with the Help of IPPAS

In October 2011, an IAEA team of international nuclear security experts conducted an International Physical Protection Service mission (IPPAS) to the UK. They visited the Sellafield civil nuclear site, as well as Barrow Port, which is used for the transport of nuclear material. The IAEA conducted a follow-up mission in February 2016.

IPPAS missions provide advice on how to improve the effectiveness of a State’s physical protection regime, either nationally or at facility level. They do so by comparing it with relevant international legal instruments, guidelines and best practices, particularly the 2005 Amendment to the Convention on the Physical Protection of Nuclear Material and the IAEA Nuclear Security Series guidance publications.

“The missions have been valuable in allowing the UK to draw upon the expertise of the IAEA and other Member States in a range

of disciplines across nuclear security,” said Robin Grimes, Chief Scientific Adviser to the Foreign and Commonwealth Office. “They have identified areas of good security practice that the UK can share with others.”

... The follow-up mission reviewed the actions taken in response to the 2011 mission’s recommendations and provided further advice. “The follow-up mission also aimed at evaluating the current status of the UK’s physical protection regime of nuclear material and nuclear facilities, as well as its implementation at Heysham nuclear power station,” said Arvydas Stadalnikas, Senior Nuclear Security Officer at the IAEA. The mission

sought to provide further advice to enhance the UK’s nuclear security regime, as well as identify good practices that could be beneficial to other Member States, he added. The follow-up mission team included experts from Canada, France, Lithuania, the Netherlands, Switzerland, the United Arab Emirates, the USA and the IAEA.

... This year is the 20th anniversary of the service. Since the first mission in 1996, IPPAS has been helping Member States identify ways to strengthen the protection of their nuclear materials and facilities against unauthorized removal and sabotage.

During this period, the IAEA has conducted 75 IPPAS missions in 47 countries and at the IAEA laboratories in Seibersdorf, with the participation of more than 140 experts from around the world.

States that have recently hosted IPPAS missions include Albania, Canada,

Japan, Malaysia, New Zealand, Norway, Poland,

IPPAS missions provide advice on how to improve the effectiveness of a State’s physical protection regime, either nationally or at facility level. They do so by comparing it with relevant international legal instruments, guidelines and best practices, particularly the 2005 Amendment to the Convention on the Physical Protection of Nuclear Material and the IAEA Nuclear Security Series guidance publications.

States that have recently hosted IPPAS missions include Albania, Canada, Japan, Malaysia, New Zealand, Norway, Poland, Sweden and the United Arab Emirates. Several others, including Australia, China, the Democratic Republic of the Congo, Germany, Hungary, Jamaica, Lithuania, Madagascar and Turkey have requested IPPAS missions for 2017.

Sweden and the United Arab Emirates. Several others, including Australia, China, the Democratic Republic of the Congo, Germany, Hungary, Jamaica, Lithuania, Madagascar and Turkey have requested IPPAS missions for 2017.

“The significant increase in the number of requests for IPPAS missions demonstrates that this independent international advisory service is being recognized for its value in the exchange of views and advice on nuclear security,” Stadalnikas said. “IPPAS’ 20-year anniversary marks significant achievements, which are an incentive for the IAEA to continuously enhance this service to make it more beneficial to Member States.” The IAEA has established a database of good practices identified during IPPAS missions and made available with consent from host countries. It is accessible to Member States through the IAEA Nuclear Security Information Portal.

Source: *May Fawaz-Huber, <https://www.iaea.org>, 27 February 2017.*

NUCLEAR WASTE MANAGEMENT

USA

US Consortium Calls for Action on Waste

A US business consortium has called for “decisive, swift and tangible” action on used nuclear fuel and high-level waste storage, including the re-establishment of the Office for Civilian Radioactive Waste Management (OCRWM) and re-engagement with the Yucca Mountain review process. The US Nuclear Infrastructure Council (USNIC) says the current “impasse” is costing US taxpayers billions of dollars.

In more than 30 years since enactment of the US Nuclear Waste Policy Act (NWPA), and 18 years since the federal government failed to meet its statutory and contractual obligation to begin

removing used fuel from nuclear energy reactor sites, the country’s nuclear waste management program is in limbo “largely due to universally recognised political reasons”, the USNIC Backend Working Group has found. As a result, there is no available disposal pathway for used fuel and high-level waste from both the commercial and defence sectors, with used fuel inventories in excess of 75,000 tonnes now in storage at operating and shutdown reactor sites.

It estimates current federal liabilities at about \$25 billion, with an \$11 billion increase since the Obama Administration’s first moves to terminate the Yucca Mountain project failure to “bring closure to the backend of the nuclear fuel cycle” has adversely impacted nuclear energy’s potential role in the country’s energy mix.

“This impasse is costing US taxpayers billions of dollars,” the working group says in an issue brief published. It estimates current federal liabilities at about \$25 billion, with an \$11 billion increase since

the Obama Administration’s first moves to terminate the Yucca Mountain project.

Failure to “bring closure to the backend of the nuclear fuel cycle” has adversely impacted nuclear energy’s potential role in the country’s energy mix, the group said, with the lack of a disposal pathway cited as a factor behind barriers to securing funding for nuclear technology, licensing delays, and state-level bans or restrictions on new nuclear construction. “[T]he continued stalemate is damaging America’s international standing on issues of nuclear safety, non-proliferation and security,” it said.

“It is crystal clear that decisive, swift and tangible action is needed to re-establish a comprehensive program to address the federal government’s statutory and contractual obligations for disposition of growing inventories of [used] nuclear fuel and high-level waste - as well as to provide a path forward for the backend of the fuel cycle for currently operating reactors and pave the way for new nuclear energy plants required for US energy independence, jobs, exports, made-in-America clean energy leadership and national security,” the group said.

It recommends that program reforms are addressed through an “omnibus approach”

including the Yucca Mountain project; consolidated interim storage solutions; management and funding reforms; transportation infrastructure; research and development of backend technologies such as recycling, to optimise the fuel cycle; and incentives for host communities.

Yucca Mountain Reversal: ...The USNIC working group called for the completion of the NRC's environmental and safety review of the Yucca Mountain licence application to be completed and a final decision on whether or not to authorise construction of the repository to be made. It said this should include immediate action to re-establish the OCRWM.

While the licensing process is being completed, consolidated interim storage solutions - with an emphasis on existing private-sector initiatives - should be pursued, the group said. "Consolidated

storage is not a substitute for a permanent geologic repository but it does offer potential advantages as part of an integrated used fuel management system," it said. The private sector should also be used "to the maximum extent possible" to carry out work to ensure the availability of necessary infrastructure and capabilities for the transport of used fuel and high-level waste.

"While the nuclear waste management program has been stymied for years in the executive and legislative branches of government, it cannot be allowed to remain so indefinitely ... It is time for the new Administration to join with Congress and re-establish the Nation's leadership role in the safe, peaceful and responsible use of nuclear energy," the report concludes. ...

Source: World Nuclear News, 13 March 2017.



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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