



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

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## OPINION – W.P.S Sidhu

### Should India Inc. Bid for Westinghouse?

George Westinghouse and the company he founded in 1886 in Pittsburgh, Pennsylvania, pioneered the commercial production and transmission of a scientific marvel called electricity, which has since powered and revolutionized the modern world. With the dawn of the nuclear age, Westinghouse Electric Company went on to develop PWRs for marine propulsion of aircraft carriers, submarines and ice-breakers. Based on these military reactors, Westinghouse supplied the world's first PWRs in 1957 for a nuclear power plant. Since then it has remained one of the most prominent companies in the nuclear industry whose technology formed the basis of nearly half the world's nuclear units until now.

This US nuclear industry giant, which was acquired by Japanese conglomerate Toshiba in 2007, filed for bankruptcy in March this 2017 on account of mismanagement and billions of dollars of cost overruns for the construction of four nuclear reactors in the US states of Georgia and South Carolina. Toshiba, which itself sank into a deeper financial quagmire because of its US subsidiary, is now desperate to sell

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Westinghouse's nuclear business. Within days of the announcement on Westinghouse, which is slated to build six nuclear reactors in India at Kovvada, Andhra Pradesh, several prominent voices called for India not to enter into a contract with the bankrupt company. This conventional wisdom notwithstanding, it is worth exploring whether India might be better off taking a bold step by bidding for Westinghouse instead.

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it will need to acquire Westinghouse. Of course, the counter-argument would be that India should not be bankrolling loss-making Indian public sector companies in the first place, let alone throwing a lifeline to non-Indian companies. However, some investments inevitably need to transcend short-term financial reasoning to secure long-term strategic and economic gains. A bid for Westinghouse would inevitably have to be done by an Indian consortium of public and private companies, since neither one is likely to be in a position to raise the necessary funds. This consortium might be able to raise additional funds from Japan and the US as well to make the bid. Such an effort would benefit India Inc. in several strategic ways.

First, it would be an ideal test case for the public-private partnership model promoted by the Modi government to work at a global scale. Acquiring Westinghouse would not only secure the six reactors that the company plans to build in India but would also make India a major player in the global nuclear market, competing with a state-of-the-art reactor. While the Westinghouse AP1000 was an experimental reactor, which faced numerous teething troubles, most of these have now been resolved, albeit at a heavy cost. The revolutionary prefabricated plants, coupled with existing orders to build reactors in Bulgaria, China, the UK and the US, would make India part of a global nuclear supply chain. This would also

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build on the decision by Infosys to create 10,000 jobs in the US. Moreover, it is bound to strengthen the India-US nuclear deal and partnership, along with the India-Japan partnership, and might also pave the way for US subsidies for Westinghouse power plants.

Third, and perhaps most significantly, a successful bid will allow New Delhi to steal a strategic march over Beijing. China, which is developing its own

**A successful bid will allow New Delhi to steal a strategic march over Beijing. China, which is developing its own reactors based on a copy of the AP1000 has, unsurprisingly, and so far unsuccessfully, made a bid for Westinghouse. This bid, despite the faux bonhomie at the summit between Trump and his Chinese counterpart Jingping, has alarmed top US officials, given China's well-documented espionage efforts to acquire details of the reactor from Westinghouse. Thus, Washington will block any official bid by Beijing.**

Besides, Westinghouse's expertise in marine nuclear propulsion systems would be particularly welcome, given India's ambitious plans for building nuclear-powered aircraft carriers and submarines. Second, such a bid, which will inevitably save thousands of US jobs (while also generating a significant number in India) is likely to curry favour with the Trump administration. It would

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official bid by Beijing. Moreover, were India Inc. able to acquire Westinghouse, it would also gain leverage over the US reactors being built in China, which are crucial for the future of China's own nuclear ambitions. As a corollary, China might feel

compelled to acquiesce to India's membership of the NSG for its own interest.

Of course, there is every chance that the Trump administration might directly intervene to assist Westinghouse or that a bid by India Inc. might be blocked after it is reviewed by the all-powerful committee on financial investment in the US. Nonetheless, declaring its intentions to save Westinghouse and US jobs, and making a sincere effort to rescue both, will be well received in Washington. It will also provide India with several other advantages. Not making a bid will bring no gain and might even disrupt the India-US nuclear deal if no agreement is reached on the construction of the six reactors by the belaboured company. The Westinghouse woes offer an opportunity for India to grab a place at the high table. Will it be bold enough to seize it?

**Of the three biggest nuclear "disasters", two harmed nobody. Three Mile Island, in the US in 1979, caused by faulty instruments and operator error, released far too little radiation to cause harm. Fukushima, in Japan in 2011, caused by a monstrous earthquake and tsunami, also released too little radiation for harm. Chernobyl, in the Ukraine in 1986, was caused primarily by bad design and secondarily by deliberate operator error.**

Source: <http://www.livemint.com/>, 08 May 2017.

**OPINION – Andrew Kenny**

**Nuclear is 'Safe and Economic'**

This is a fundamental mistake, contributing to nuclear's biggest problem, poor public perceptions. The path of technical progress would be smooth and happy if we simply had to answer this question: "Which technology will bring the most benefit and the least cost to man and the environment?" Unfortunately many technological choices are caught up in politics, ideology and morality. Nuclear power must learn to deal with this. So far, it has not. This is tragic, because nuclear power has the strongest moral case of all energy sources, including renewable energy. In South Africa, and much of the world, a green dogma proclaims that nuclear is dangerous, expensive, huge, centralised and immoral and that "renewables" (usually meaning wind and solar) are safe, economic, small, local and moral. This is

the inverse of the truth, easy to refute. But nuclear advocates do not refute it very well at all.

**Best Safety Record:** The facts about nuclear power are simple. It has the best safety record of any energy technology, including solar and wind. Nuclear power has been operating for sixty years and the number of people it has killed is minuscule compared with other energy technologies. Of the three biggest nuclear "disasters", two harmed nobody. Three Mile Island, in the US in 1979, caused by faulty instruments and operator error, released far too little radiation to cause harm. Fukushima, in Japan in 2011, caused by a monstrous earthquake and tsunami, also released too little radiation for harm. Chernobyl, in the Ukraine in 1986, was caused primarily by bad design and secondarily by deliberate operator error. The word "deliberate" means that the

authorities instructed that a safety test be carried out in which certain safety systems were intentionally switched off, while the reactor was stressed. This all went horribly wrong.

Chernobyl did release radiation quantities large enough to kill about 55 people in the following decades. This is tragic, but is less than fatality figures from other major accidents involving other energy sources. While the Fukushima nuclear accident was harming nobody, large numbers of people, including children, were suffering cancer and other crippling diseases from the awful pollution caused by mining for neodymium, used in wind turbines, near the Chinese town of Baotou. There was not a peep about this from the extreme greens. During the decades of nuclear power, tens of thousands of people have died in accidents in coal, oil, gas and hydro power. Nuclear is sustainable indefinitely, because there is so much nuclear fuel in the ground and the sea. It is extremely reliable.

It is economic everywhere and is often the cheapest source of electricity. It can be sited wherever you want, since the total nuclear fuel required is tiny in quantity and is easy to transport; so it can be localised if you want. It uses small amounts of materials to produce large amounts of reliable power, so causing the least disruption to the environment of any energy source. Like all energy technologies, including solar and wind, it leaves toxic waste that lasts a long time, but unlike the others its waste is small and it has procedures for storing it safely. Nuclear power is very clean, emitting no noxious gases in operation, and few over the whole energy cycle. If rising CO2 worries you - although the scientific grounds for your worry are scanty - nuclear is the best technology for reducing CO2 emissions.

...We must work in harmony with nature, and not against her. This is what nuclear power does. Nature has provided us with chemical energy (coal, oil, gas), indirect nuclear energy from the sun (wind, solar and hydro) and direct nuclear energy (nuclear fission from uranium and other isotopes). Coal, despite its pollution, delivered man into the industrial age, vastly improving human welfare. So did oil and gas. Wind and solar have wonderful applications for small scale, off-grid energy, including solar water heating and remote Karoo farm wind pumps. Nuclear offers huge amounts of reliable electricity from small stations that work in harmony with nature.

The Karoo is an arid semi-desert area larger than Germany. It is famous for its stark beauty and for farming mutton and lamb which has a distinctive taste. Right now in South Africa we are being told dishonest nonsense about nuclear versus renewables for grid electricity. We are being told that solar and wind are cheap and that the Renewable Energy Independent Power Producers Procurement Programme (Reipppp) is a huge success. Under this programme the state forces

Eskom to buy this expensive renewable energy from wind and solar suppliers, when the wind decides to blow and when the sun is shining, that it doesn't want or need. Eskom's report, ending September 30, 2016, showed that it had to pay R2.18/kW/\* for renewable electricity when its own average selling price was R0.89/kW/\*. Is this a huge success? Only for the rich renewable power companies and their bankers.

The CSIR, whose energy modeling group seems to have been captured by green activists, produces fantastic theoretical energy models showing that wind and solar, combined with a large amount of imported gas, will give us the cheapest possible baseload electricity.

**All around the world, including Germany, Denmark, Britain, Australia and the US, wind and solar for grid electricity have proved horribly expensive and unreliable. Germany, which unlike South Africa, has access to lots of natural gas (from Russia), has used the CSIR's combination of gas and renewables, sending electricity prices soaring. In South Australia, reliance on wind energy has sent electricity prices sky high and contributed to two total blackouts.**

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reliance on wind energy has sent electricity prices sky high and contributed to two total blackouts. Now the CSIR tells us that in the next round of the Reipppp, renewables will give us some wind and solar photovoltaic energy as low as R0.62/kW/\*. But this is the price of the renewable power. What is the cost of it?

Since wind energy only has a load factor of about 32 percent (which means delivering on average 32 percent of its rated capacity) and is quite unpredictable, what is its real worth? How much would you pay for brakes for your car that only worked 32 percent of the time, and you never knew when? Solar PV only works when the sun shines. To cope with this essentially useless electricity, Eskom will have to pay a fortune in back-up generation, storage and spinning reserve. The

costs to Eskom - which means to its customers, the South African public - are likely to be more than R2/kW/\*.

There is only one solar or wind technology that provides some honest, reliable electricity. This is solar Concentrated Solar Power (CSP), but only if equipped with a substantial storage system. The Bokpoort CSP charges R2.80/kW/\*. Later CSPs will charge more. Meanwhile, electricity from the Koeberg Nuclear Station near Cape Town costs less than R0.40/kW/\*. Future nuclear in South Africa, based on real nuclear costs here and around the world, would cost about R0.80/kW\* - for reliable electricity and for plants lasting 60 years, or more.

Perhaps the worst dishonesty about renewables is that they are "small" and "localised". On the contrary, they are gigantic and highly centralised. Wind turbines require ten times as much concrete and steel per kW/\* as does nuclear. Wind turbines and solar arrays are typically built far away from the centres of demand, requiring hundreds of kilometres of transmission lines. These large scale systems are all held together in vast, highly centralised grids. Just look at Koeberg. With a few buildings of modest size (about the size of a medium block of flats), it works in harmony with nature. Now look at any wind farm, say the one at Jeffreys Bay. You will see large numbers of monstrous wind turbines, looming over the countryside, trying to dominate nature and conquer nature. We want a moral energy policy. This means installing energy technology that works for the best benefit of man and the environment. This means modest sized power stations working in harmony with nature. This means respect for local people. This

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Source: <http://www.iol.co.za> 02 May 2017. Excerpted from a presentation given by Kenny at the Nuclear Africa 2017 nuclear power Conference held near Pretoria, South Africa in

March 2017.

#### OPINION – David Faris

### Does Trump Think America Could Win A Nuclear War?

In between another failed congressional push for TrumpCare and President Trump musing inanely about why the Civil War happened, there's been lots of loose talk about North Korea. The president, who was only recently issuing menacing threats from his Twitter account, now says he is willing to be the first president to meet with his North Korean counterpart, Jong Un, even as White House Chief of Staff Priebus says he can't see it happening. UN Ambassador Haley recently threatened a strike on the nuclear-armed dictatorship, while Secretary of State Tillerson contradicted Vice President Pence by saying that the US might sit down for multiparty negotiations.

The policy and rhetorical incoherence from the White House is sadly typical for a group of amateur leaders that can't seem to do something as simple as call a meeting and agree on a set of talking points. Far from projecting strength or throwing adversaries off

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balance with some kind of Nixonian "madman theory" of foreign policy, the failure to get America's key decision-makers on the same page only makes the administration look feckless and adrift — and makes it more likely that a misunderstanding could lead to an even more

serious crisis. But the more important questions are whether the president and his advisers have an end game, and how they view nuclear weapons in general. From the moment he took office, President Trump has seemed weirdly determined to get the 24 million people of metropolitan Seoul incinerated in a pointless war, and his team is reacting to every provocation from Pyongyang as if this is the first time North Korea has ever tested a missile or released an unhinged statement.

It is not clear what the Trump administration hopes to achieve with its recent escalation of tensions. There are only two things that would represent an improvement over the status quo on the Korean Peninsula (assuming that reunification is a nonstarter). One is a negotiated agreement that leads North Korea to surrender the nuclear weapons it has already built and rejoin the NPT from which it withdrew in 2003, or to at least freeze its missile and weapons programs. However, the US is governed by people who don't believe other countries can be trusted to adhere to international agreements and who keep threatening obliquely or overtly to blow apart the Iran deal. If Trump and his advisers are trying to get North Korea back to the table, they are also pursuing a gravely mistaken path by threatening the agreement with Iran. Not only would undermining the Iran deal convince the North Koreans that we can't be trusted, it will also make North Korea's neighbors less likely to cooperate in any sanctions effort that could squeeze Pyongyang hard enough to get them to change their behavior.

The second potential improvement on the Korean Peninsula would be if the odious regime of Jong Un were replaced. Yet self-preservation is what drove

Pyongyang to acquire nuclear weapons in the first place. The regime views its small nuclear deterrent as the only thing preventing the US from leading an Iraq-style adventure straight to Pyongyang, and the aggressive and inconsistent messaging from Washington will do nothing to ease those concerns. So what is the administration up to, exactly? One possibility might be that it doesn't fear a nuclear exchange in the same way that most other US presidents have since the dawn of the nuclear age.

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The Cold War with the Soviet Union was governed by a nuclear strategy called MAD — Mutual Assured Destruction. Recognizing the awful nature of atomic bombs, MAD was designed to convince nuclear powers that any use of nuclear weapons would invite massive retaliation catastrophic enough to obliterate both societies. Many scholars argue credibly that the resulting “balance of terror” helped decrease the risk of warfare between the superpowers and prevented the outbreak of World War III. But even committed proponents of MAD were troubled by the prospect of killing hundreds of millions of Soviet civilians

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in an act of naked revenge. As Freedman wrote in *The Evolution of Nuclear Strategy*, the problem was that it “put the threat of unprecedented genocide at the center of American strategy.” In fact, it was deep moral discomfort with a blasé posture of mutual annihilation that led some thinkers to wonder whether a nuclear war could be fought without escalating to Armageddon.

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developed variations on doctrines known loosely as “flexible response,” believing that policymakers should have more options in a nuclear conflict than simply murdering all of the hostages at once. To this day, the US maintains in its nuclear posture the right to be the first to introduce nuclear weapons in a conflict, and you can assume that the idea is not to start a large-scale nuclear war that would kill everyone on Earth.

Margolis and Ruina coined the term Nuclear Utilization Theory in an influential 1979 article to describe these ideas, but during the heyday of the Cold War it was also called NUTS — Nuclear Utilization and Target Selection. Proponents believed that a nuclear war could be fought and won without escalating to a full-scale, civilization-obliterating thermonuclear exchange. In particular, they believed in the tactical utility of using small numbers of nuclear weapons in the event of a conventional war to gain and press advantages on the battlefield. NUTS proponents never had much luck convincing planners or the general public that nuclear weapons are just another gizmo in the great power toolbox.

How does this all fit into the North Korea crisis? During the campaign, Trump was credibly rumored to have asked a foreign policy adviser, during a conversation about nuclear weapons, “If we have them, why can’t we use them?” In January, he told *Morning Joe* co-host Brzezinski, “Let it be an arms race.” His December tweet that “the US must greatly strengthen and expand its nuclear capability until such time as the world comes to its senses regarding nukes” is precisely the opposite of the process called for by the NPT, which requires states that possess nukes to work toward their elimination. And he recently approved the use of America’s most destructive non-nuclear bomb, the Massive Ordnance Air Blast, in Afghanistan.

...North Korea has a very small number of nuclear weapons — probably about 10 — and Trump may believe either that North Korea won’t use them, or that South Korean and American forces could survive an exchange and then either retaliate or launch a conventional invasion of the North. This is, of course, completely bananas and could easily lead to a wider nuclear exchange that will prevent all of us from seeing the second season of *Stranger Things*. NUTS was always a fringe

movement because no one could really envision a plausible scenario where policymakers calmly de-escalate a situation after a nuke has gone off. Can Defense Secretary Mattis — who was firm during his confirmation hearings that nuclear weapons must never be used — convince his boss that NUTS is, well, nuts?

The question is far from academic. The threat of planetary obliteration that hung over all citizens during the Cold War has largely receded from memory. ...The Russians allegedly maintain a mysterious system called Perimeter, which many analysts believe is a “dead hand” set to launch nuclear missiles in the event of any nuclear detonation in the country. With several more powers joining the nuclear club since the end of the Cold War, including North Korea, India, and Pakistan, the aggregate risk of nuclear war — even if still quite small — is probably higher than it has been since the Cuban Missile Crisis.

The fact that the US is now led by an erratic, ill-tempered novice makes the situation even more unstable. One of the genuinely terrifying things about Trump is how little he appears to know about anything, and how he frequently discovers new facts about the world that would strike most people as self-evident. ...Mattis, National Security Adviser H.R. McMaster, and Vice President Pence are basically operating a regency for a president who is incapacitated by his own ignorance and stupidity.

This may all be bluster, and at the end of the day, war with North Korea remains unlikely. But one of these regents (and God bless them) needs to get our dude caught up on nuclear strategy, unless the few survivors of a nuclear exchange would like to hear him musing, post-apocalypse, about how nuclear weapons are so much deadlier than he thought before he accidentally became leader of the most powerful country in the world.

Source: <http://theweek.com/>, 03 May 2017.

**OPINION – General Dave Goldfein and General Robin Rand**

### **Why the US Is Right to Invest in Nuclear Weapons**

Americans don’t often hear much about US nuclear weapons. Despite their historical and continued importance to the strategic defense of our country,

the most powerful weapons in the US military arsenal are largely outside of the public view.

As the Department of Defense embarks this year on a Nuclear Posture Review, we must not lose sight of what has changed since the last review in 2010. Potential adversaries are aggressively modernizing and expanding their nuclear forces and capabilities. Some are publicly reminding those watching that their policies and doctrines support their use. So while much has changed since 2010, what has not changed is the need for a strong U.S. nuclear deterrent. We must modernize our aging delivery platforms, nuclear weapons and supporting infrastructure so that America's deterrent remains credible and effective in the future.

Though it may seem counterintuitive, nuclear weapons are a critical tool of world peace. Since the advent of the nuclear age, the great wars that so ravaged the globe during the first half of the 20th century are no more. Consider that between 65 and 85 million people died in the two world wars of the last century. It is against this backdrop that the United States must ensure that we continue to field effective nuclear deterrent forces.

As the service responsible for two of the three legs of the "nuclear triad," and approximately 75 percent of the nation's nuclear command-and-control, the Air Force has a keen interest in assuring that our nuclear-capable bombers, ground-based missiles, command-and-control systems and supporting infrastructure are capable, reliable and secure. These systems have served as a bedrock deterrent of US national security for more than seven decades precisely because prospective enemies know they work and that our nation's leadership will always make the tough decisions needed to protect and ensure the survival of the American people and our allies. Although the two Air Force legs of the triad have proven remarkably resilient, they are growing old.

Our Minuteman III Intercontinental Ballistic Missiles, or ICBMs, have been around since the 1970s. The infrastructure and support platforms that underpin our ICBMs, such as launch facilities, weapons storage facilities and security helicopters have been in service even longer. Our bomber and air-launched cruise missile forces are decades past their expected lifespans. While we will continue to rely on a portion of our legacy bomber force for decades to come, we must press forward with upgrades to ensure their reliability and effectiveness.

In the face of the aggressive and well-documented modernization efforts of potential adversaries and their increasingly assertive posturing, including overt

threats from North Korea, the United States must maintain its commitment to recapitalizing our nuclear forces. History supports the view that our nuclear forces deter large-scale conventional and nuclear attacks from well-armed adversaries and undergird our stability.

Finally, modernization must include investment into technologies that assure the viability of American space

assets critical to early warning around the world. Gen. John Hyten, who commands American nuclear forces at U.S. Strategic Command, recently emphasized to Congress that space capabilities are increasingly important to detecting missile launches such as those we've recently seen by North Korea.

Investments in our nuclear deterrent represent approximately 5 percent of the overall military budget over the next decade. While not an insignificant bill, history has shown the nation's outlays supporting our strategic deterrent are well worth the investment, especially when compared to the costs—financial and in lives lost—of world wars that we have not experienced since 1945.

For the better part of 70 years, American airmen have been quietly standing watch alongside our shipmates in the Navy to protect the nation and underwrite strategic stability, under the often harsh

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conditions and high-stress that come with serving as part of the nuclear forces in our northern tier and under the high seas. Now more than ever, they need our support. By investing in the recapitalization of our nuclear forces, we can provide them with the tools necessary to keep us safe and our allies secure in the decades to come.

Source: <http://www.politico.com>, 12 May 2017.

## NUCLEAR STRATEGY

### UK

#### Corbyn Pressed over Willingness to Use Nuclear Weapons

Jeremy Corbyn has effectively ruled out using nuclear weapons if he is elected prime minister. In a speech at London's Chatham House, the Labour leader said he was "often asked if as prime minister I would order the use of nuclear weapons."

It's an extraordinary question when you think about it – would you order the indiscriminate killing of millions of people? Would you risk such extensive contamination of the planet that no life could exist across large parts of the world?

If circumstances arose where that was a real option, it would represent complete and cataclysmic failure. It would mean world leaders had already triggered a spiral of catastrophe for humankind.

Asked if he would categorically rule out the use of nuclear weapons, even in retaliation, Mr Corbyn did not engage with the question. He did say that he was in favour of using military force in some circumstances, suggesting that Britain was right to enter the Second World War but not the First World War.

Source: <https://www.ft.com/content/977fc2a6-548b-3d68-aad5-95d0aeb714a9>, 12 May 2017.

## BALLISTIC MISSILE DEFENCE

### NORTH KOREA

#### North Korea BMD Test Fails, NBC News Confirms

North Korean BMD tests are banned by the UN because they're seen as part of the North's push for a nuclear-tipped missile that can hit the USA mainland. General McMaster said North Korea poses "a grave threat", not just to the US and its Asian allies, but also to China. The US president said he would not be happy if North Korea conducts a nuclear test. The Thaad system set up at a converted golf course in Seongju, in the country's south-east, has "early capability" to respond to North Korea's nuclear and missile threat, Defence Ministry spokesman Gyun said.

"Reasonable arguments that both we and China have repeatedly given do not work now but this does not mean that we should not continue persuading others", he said.

He reiterated that the US must be supported by its global allies if it is going to make any meaningful strides, adding: "It's important for all of us to

confront this regime.... "The president is someone who's made it very clear that he's not going to telegraph his next moves". "Currently, we are closely monitoring North Korea's further military provocation and are totally ready to meet any and all kinds of provocation", the official told NBC. Japan's Chief Cabinet Secretary Suga, speaking after a meeting of Japan's National Security Council, said the missile is believed to have traveled about 50 kms (30 miles) and fallen on an inland part of North Korea.

North Korea has been estimated to possess about 1,000 BMDs and between 10 and 20 nuclear weapons. Instead we have sabre-rattling Trump, along with Vice President Pence and others on the national-security squad. He has used his negotiating skills very wisely, befriending and

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becoming very close to President Xi in China, working with China to put pressure on North Korea, working with our allies. "Today, he'll talk to Singapore and Thailand", he said. Front-runner Jae-in, a liberal who calls for engagement with North Korea, has said he would reconsider THAAD if he becomes president. Priebus defended the decision to putting some issues like human rights on backburner with China in order to deal the North Korean behaviour.

"We need cooperation at some level with as many partners in the area as we can get to make sure that we have our ducks in a row", Mr Priebus told ABC's *This Week*, ahead of the Sunday calls. "And if that happens, we can't allow it to happen". They said the US ship is expected to refuel other American warships, including the *USS Carl Vinson* carrier strike group. "But when it comes to human rights, look what president Trump and his team did in Syria. I don't think humanity today could bear it", he told reporters. Asked about the contradiction between the statements from Trump and McMaster, McCain said, "Sometimes, it's important to watch what president does rather than what he says".

Source: <http://normangeestar.net>, 08 May 2017.

## USA

### Northrop Grumman Wins \$332 Million for Missile Defense Systems Integration

The US Missile Defense Agency has awarded Northrop Grumman Space & Mission Systems an almost one third of a billion dollar contract to integrate the National BMD, the Department of Defense said in a press release. "Northrop Grumman Space & Mission Systems Corporation [of] Colorado Springs, Colorado is being awarded \$332 million for a modification to the Joint National Integration Center Research and Development contract," the release stated on 08 May. The new order brings the total value of the

integration contract from \$3.1850 billion to \$4.182 billion, the Defense Department acknowledged. Work on the new extension contract will be carried out over a nine month period ending on May 4, 2018, the release added.

"Under the modification, the contractor will continue to provide Missile Defense Agency and Department of Defense with enterprise-level technical integration and BMD (BMDS)-level operational integration products and services," the Defense Department noted. The work will

**The work will include the development, test and evaluation of integrated missile defense capabilities; support for missile defense readiness, wargame command and control procedures, operational concepts and doctrinal requirements and operational support.**

include the development, test and evaluation of integrated missile defense capabilities; support for missile defense readiness, wargame command and control procedures, operational concepts and doctrinal requirements and operational support, the

announcement said.

Source: [sputniknews.com/](http://sputniknews.com/), 09 May 2017.

### US THAAD Missile Defence Equipment Enter South Korea

A US guided-missile submarine arrived in South Korea 08 May as North Korea prepared to mark the anniversary of the founding of its military amid fears of a new nuclear test. A South Korean military official said: "The nuclear-powered submarine USS Michigan will enter the waters off the peninsula soon or later to jointly conduct drills with the USS Carl Vinson". Japan's envoy on North Korea, Kanasugi, said he and his US and South Korean counterparts agreed in talks in Tokyo on 02 May that China should take a concrete role to resolve the crisis and could use an oil embargo as a tool. Adding to the atmosphere of animosity, officials said North Korea has detained a third US citizen.

Meanwhile, US President Trump has heaped pressure on the UNSC to do more to punish North Korea for its nuclear and ballistic weapons programmes. Only senators will be allowed to attend, where they will be briefed by Secretary of

State Tillerson, Defense Secretary Mattis and Joint Chiefs Chairman Gen. Dunford. Recent US commercial satellite images indicate increased activity around North Korea's nuclear test site, and third-generation dictator Jong Un has said the country's preparation for an ICBM launch is in its "final stage". "North Korea is a big world problem and it's a problem that we have to finally solve", he added.

**North Korea poses one the sternest national security challenges facing the 3-month-old Trump administration. Fresh off an enormous North Korean parade that revealed an arsenal of intercontinental BMDs, rival South Korea and its allies are bracing for the possibility that Pyongyang's follow-up act will be even bigger.**

The guided-missile submarine USS Michigan made a port call in the southeastern port city of Busan on 02 May, a show of force as North Korea celebrated the 85th anniversary of the founding of its army. While US Naval Forces Korea called the visit "routine", a US defence official told CNN it was a show of force to North Korea. The aircraft carrier strike group began joint drills with Japanese destroyers in the western Pacific Ocean and was expected to head north after that. He said any North Korean missile fired at US forces would be destroyed. ...North Korea, on the other hand, hopes China will pile more pressure on the US and South Korea to stop their threats of war.

Pentagon spokesman Ross condemned Pyongyang for "provocative, destabilizing actions and rhetoric, saying: "North Korea's unlawful weapons programs represent a clear, grave threat to US national security". North Korea poses one the sternest national security challenges facing the 3-month-old Trump administration. Fresh off an enormous North Korean parade that revealed an arsenal of intercontinental BMDs, rival South Korea and its allies are bracing for the possibility that Pyongyang's follow-up act will be even bigger. The report, citing an unidentified government source, said the live-fire exercise was possibly supervised by North Korean leader Jong Un.

There have been fears that North Korea will use the anniversary as an excuse to carry out another

missile test at a time of heightened tensions between the US and the secretive Communist state, which launched a failed test in April. While pressuring China, the Trump administration has also repeatedly declared that it is prepared to "solve" North Korea by itself. The 560-foot-long, 18,000-ton MI can carry up to 154 Tomahawk cruise missiles and 60 special operations troops and a mini-submarine....

There is no evidence yet it has done so or that it has missiles with the range to reach long-distance targets like the USA mainland, but experts believe it will achieve these goals in the future. Instead, he hopes that sanctions from the UNSC will deter the nuclear tests.

Source: <http://clicklancashire.com>, 08 May 2017.

### **Pentagon Kicks Off Crucial Missile Defence Review**

US Secretary of Defense Mattis directed the department to begin its BMDR as a variety of missile defence questions may soon be answered by the new administration. Pentagon spokesperson White announced the review began on 5 May and is to identify ways to strengthen missile defence capabilities, rebalance homeland and theatre defence priorities, and assess policy and strategy. The US has tended to vacillate between prioritising theatre defence (as Democrats Obama and Clinton did) and homeland defence (as Republicans W Bush, HW Bush, and Reagan did). The US

**While pressuring China, the Trump administration has also repeatedly declared that it is prepared to "solve" North Korea by itself. The 560-foot-long, 18,000-ton MI can carry up to 154 Tomahawk cruise missiles and 60 special operations troops and a mini-submarine.**

military has a variety of theatre defence capabilities such as Patriot- or Aegis-based systems, and the homeland Ground-based Midcourse Defense (GMD) system with sensors across the globe and interceptors in Alaska and California.

Source: <http://www.janes.com>, 08 May 2017.

NUCLEAR ENERGY

FRANCE

**French Energy Group Engie Profit Slips as Hydro Output Down, Nuclear Reactor Shutdown**

French energy group Engie said its operating profit slid in the first three months of 2017, in part due to a drop in hydroelectric output in France and a nuclear reactor shutdown in Belgium. The company, which began a major transformation effort 2016, said operating profit dropped 5.9 percent to 3.3 billion euros (\$3.6 billion), considerably below analysts' expectations. Engie cited lower hydro output in France and the shutdown of the Tihange 1 nuclear power plant in Belgium as two significant drags on operating profit. However, the firm said sales increased by 3.2 percent to 19.5 billion euros. The sales figure, which beat analyst expectations, was driven by an increase in gas sales, production sites coming on line, and a colder-than-usual winter in Europe.

Engie, the world's leading independent electricity producer and major natural gas supplier and distributor in Europe, decided last year to focus more on renewables and segments of the energy sector not exposed to volatile commodity prices. It is in the process of selling its oil and gas exploration and production activities and in April sold its stake in a project to build three nuclear reactors in Britain. Engie confirmed its 2017 target of a net profit not including exceptional items between 2.4 and 2.6 billion euros, with operating profit at 10.7 to 11.3 billion euros.

Source: <http://energy.economictimes.indiatimes.com>, 06 May 2017.

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IRAN

**Amano: Iran Deal "a Significant Gain" for Nuclear Verification**

The secretary general of international atomic watchdog says Iran's nuclear deal represents "a significant gain" for nuclear verification. "In 2015, the IAEA helped to bring about an important agreement between Iran and the group of countries known as the P5+1 – and the EU – known as the JCPOA," the DG of the IAEA Amano said in a statement to Preparatory Committee for the 2020 Review Conference of the Parties to the Treaty on the NPT. According to a report, released on IAEA's website on May 2, he added that "since implementation of the JCPOA began in January 2016, we have been verifying and monitoring Iran's implementation of its nuclear-related commitments under the agreement. The JCPOA represents a significant gain for nuclear verification". Amano said that Iran is now subject to the world's most robust nuclear verification regime.

"Our inspectors have expanded access to sites, and have more information about Iran's nuclear programme. That programme is smaller than it was before the JCPOA came into effect. Iran is provisionally implementing the additional protocol to its safeguards agreement with the Agency". He said the IAEA will continue to implement safeguards in Iran with a view to being able to draw, in due course, the "broader conclusion" that all nuclear material remains in peaceful activities. "This is likely to take many years," added Amano.

Source: <http://en.trend.az>, 02 May 2017.

UAE

**Construction of UAE's First Nuclear Reactor Complete but Operation Delayed to 2018**

Construction of the first nuclear reactor of the UAE's atomic plant has been completed, although its operation will begin next year, said the Emirates Nuclear Energy Corporation (Enec). Enec and the Korea Electric Power Corporation (Kepco) have completed the initial construction activities for Unit 1 of the Barakah plant. The operating systems have been handed to Korea Hydro and Nuclear Power, a subsidiary of Kepco, for testing and commissioning to assure safety. When the tests are completed, Nawah Energy Company (Nawah), a joint venture of Enec and Kepco, will be responsible for operating Unit 1.

Nawah is working with the IAEA and the World Association of Nuclear Operators on the approach and timetable for the assessment of Unit 1's operational readiness this year, said Suwaidi, Nawah's acting chief executive. Enec said in a statement the delay of Unit 1's operation to 2018 was to ensure "sufficient time for international assessments and adherence to nuclear industry safety standards, as well as a reinforcement of operational proficiency for plant personnel". Nuclear experts said preparing the operation of a new nuclear plant with regard to safety and security was of crucial importance. "Much time, expertise and experience are needed, including advice from the IAEA and control from the suppliers of the technology used in the plant," said John Bernhard, Denmark's former envoy to the IAEA. "It will generally also be necessary to apply many tests and exercises. It is equally important to make sure that you have highly qualified personnel at all levels to operate the plant, and that they are also trained to work with the plant.

"The so-called safety and security culture is important, that the personnel is trained to have a high degree of responsibility and awareness of

risks, including the ability to act correctly under pressure. They have to handle emergency situations in a professional and calm way." Mr Bernhard said this was a significant and time-consuming challenge, especially for countries that are new to using nuclear power. "It is always wise not to put a power plant into operation until you are 100 per cent certain that all the elements necessary for the safe and secure operation of the plant are in place," he said.

"Therefore, my impression is also that delays both with regard to nuclear plants and other large energy infrastructure works are rather common." Construction of Unit 1 started in 2012. At its full operational capacity, the Barakah power plant's four reactor units will deliver up to a quarter of the UAE's electricity needs from carbon-free energy.

**The long-running race to limitless clean power is heating up. As an international team slowly pieces together ITER, a multibillion-dollar fusion project in southern France, a start-up company in the U.K. has switched on a considerably smaller device designed to accomplish the same thing—fuse particles together at millions of degrees Celsius.**

Source: <http://www.thenational.ae>, 05 May 2017.

UK

**UK Nuclear Fusion Start-Up Switches on New Compact Tokamak Reactor**

The long-running race to limitless clean power is heating up. As an international team slowly pieces together ITER, a multibillion-dollar fusion project in southern France, a start-up company in the U.K. has switched on a considerably smaller device designed to accomplish the same thing—fuse particles together at millions of degrees Celsius. Tokamak Energy Ltd. activated its ST40 fusion reactor and achieved first plasma, an early milestone on the path to higher energy tests, and eventually, electricity production. "The ST40 is a machine that will show fusion temperatures—100 million degrees—are possible in compact, cost-effective reactors," David Kingham, the company's CEO, said in a statement.

"This will allow fusion power to be achieved in years, not decades," he added. Using a compact design, Tokamak's new reactor fits in a typical room and stands in stark contrast to larger-scale

projects such as ITER, which is being built on a 42-hectare site and will have a reactor the size of an aircraft hangar. Despite the considerable differences between the two reactors, both ITER and ST40 are tokamak-type fusion devices. But the UK start-up is betting its reactor's significantly smaller footprint will allow for quicker development and a more cost-effective device. Tokamak has not released the cost of ST40, but it's safe to assume the reactor cost a small fraction of the estimated 16 billion euro bill ITER is expected to run up.

The name tokamak derives from a Russian acronym for toroidal chamber with magnetic coils—and the machine itself uses a doughnut-shaped vacuum chamber to create enough heat and pressure to generate plasma—an ionized state of matter. To begin fusing particles together, a reactor needs to heat plasma to more than 100 million C. And it's here, by pursuing a compact reactor, the U.K. start-up company is taking a somewhat contrarian view. Tokamak admits most researchers say fusion reactors need to be significantly larger—built on a scale similar to ITER—to produce energy. Still, armed with experimental data to support its work and private funding, the company is pushing forward; ST-40 is its third new reactor in the past five years.

It aims to achieve the 100 million C threshold in the new reactor next year and reach the energy break-even point in 2020. Ultimately, the company hopes to be able to use its compact tokamak to produce electricity by 2025 and have a market-ready product by 2030. "We are already half-way

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to the goal of fusion energy; with hard work we will deliver fusion power at commercial scale by 2030," Kingham said. Despite the optimism, the clean power project is far from a simple endeavour. Researchers have been working on fusion technology for decades and while the race does seem to be slowly gaining ground, the company still faces financial, engineering and perhaps even theoretical challenges.

Meanwhile, other nuclear researchers are working toward the next fusion breakthrough as well. Along with the tokamak research at ITER and several other locations around the world, physicists in Germany switched on another type of reactor known as a stellarator in 2016. In Canada, General Fusion is working to commercialize yet another type of device that uses a process known as magnetized target fusion.

Source: <http://www.canadianmanufacturing.com/>, 06 May 2017.

## USA

### Congress Gears Up for Showdown over Billions in Nuclear Tax Credits

**Congress did not include a provision extending tax credits for nuclear power in the \$1.1 trillion spending bill intended to keep the government funded through September. The lack of nuclear energy tax credits threaten the viability of two nuclear reactors being built in Georgia and South Carolina.**

Congress did not include a provision extending tax credits for nuclear power in the \$1.1 trillion spending bill intended to keep the government funded through September. The lack of nuclear energy tax credits threaten the viability of two nuclear reactors being built in Georgia and South Carolina. "The extension of

the tax credit for advanced nuclear energy production is absolutely imperative to nuclear new build at Vogtle and VC Summer – and next-up US

nuclear projects, including SMRs, currently in the queue," Blee, executive director of the US Nuclear Infrastructure Council (NIC), told The Daily Caller News Foundation. "Its urgency is even more so given challenges emanating from the Westinghouse Chapter 11 filing."

Georgia and South Carolina lawmakers strongly supported extending the tax credit. Supporters claim congressional leadership is delaying the issue until lawmakers take up tax reform later 2017. Westinghouse's March bankruptcy filing will likely delay the construction of the Vogtle and VC Summer reactors. South Carolina's two Republican senators, Scott and Graham, were shocked when the federal tax credit was left out and have already introduced legislation extending the tax credit to 2025. The Obama administration gave the developers of the Vogtle reactor in Georgia a \$8.3 billion loan guarantee. Nuclear power supporters say taxpayers may be at risk of losing money if the Vogtle project falters.

Industry representatives think Scott's legislation could save the Vogtle and VC Summer reactors. "Senator Scott's legislation achieves this in a simple, straightforward manner by removing the arbitrary requirement to be fully operational by 2020 while also providing flexibility for use of the tax credit," Blee said. "Given the increasing urgency, the return on investment and the high stakes including nearly 10,000 direct jobs and thousands more in-direct and potential jobs, it is our hope that the Congress will act swiftly on this measure." "I'm not going to sit on the sidelines and watch the nuclear industry be destroyed," Graham told *Politico*. "For three years, we've been trying to get these tax credits extended.... The reactors that are being built are very much at risk."

**Georgia and South Carolina lawmakers strongly supported extending the tax credit. Supporters claim congressional leadership is delaying the issue until lawmakers take up tax reform later 2017. Westinghouse's March bankruptcy filing will likely delay the construction of the Vogtle and VC Summer reactors.**

**Funding related to nuclear energy in general is spread across the bill (in both energy production and relative to nuclear weapons), namely \$905 million for the Energy Reorganization Act of 1974 and the Atomic Energy Act of 1954. There are various appropriations to efforts related to operations under the AEA, DOE legislation that oversees the management of nuclear material. Funding also includes infrastructure and advanced nuclear reactor technology and research and development.**

Scott told a local newspaper losing the tax credit would cost his state 5,000 jobs and noted that the tax credit wasn't expensive compared to the economic gain from the reactors. "This is not a cost or scoring issue," Blee said. "But even then, all in the aggregate cost of roughly \$6.5 billion is only a drop in the bucket compared to the \$100 billion in subsidization of renewables since 2005." Solar and wind power got 82 and 17 times more in subsidies than nuclear power per amount of energy generated according to 2013 Department of Energy data collected by Forbes.

Source: <http://dailycaller.com>, 05 May 2017.

### **Omnibus Appropriations Bill Contains Millions for West Kentucky Projects**

The \$1.1 trillion Consolidated Appropriations Act 2017, that funds the government through September, contains funding for several projects in far west Kentucky. The Senate passed the bipartisan spending bill on 04 May. President Trump signed the measure into law on 05 May. Senate Majority Leader McConnell's office outlined numerous provisions for projects across the commonwealth in a release. Some of the items are specifically mentioned in the bill, others are presumably covered under broader allocations.

#### ***In Far West Kentucky:***

According to McConnell, more than \$205 million supports cleanup and deactivation work at the Paducah Department of Energy site (PGDP) and an additional \$50 million for the DUF-6 conversion facility. Funding related to nuclear energy in general

is spread across the bill (in both energy production and relative to nuclear weapons), namely \$905 million for the Energy

Reorganization Act of 1974 and the Atomic Energy Act of 1954. There are various appropriations to efforts related to operations under the AEA, DOE legislation that oversees the management of nuclear material. Funding also includes infrastructure and advanced nuclear reactor technology and research and development. Funding of \$3.6 million also remains intact for expenses involving the Nuclear Waste Fund. There is also a section involving waivers for Congressional authorization of appropriations to mitigate a health risk or disaster.

McConnell's statement says \$225 million goes towards the US Army Corps of Engineers' (USACE) Olmsted Locks and Dam project for infrastructure development. The bill says a portion of more than \$1.8 billion in USACE construction funding goes towards the Inland Waterways Trust Fund, whose resources are used for Olmsted. Some strings attached to this funding includes new construction related to projects that generate savings from flood and storm damage reduction and at least one environmental restoration project.

Additionally, \$362 million goes to flood damage reduction projects on the Mississippi River south of Cape Girardeau (from the Harbor Maintenance Trust Fund). Funding also goes to research related to river and harbor flood and storm damage. McConnell's release states more than \$26 million goes towards the US District Court House in Paducah, though the bill doesn't specifically mention this allocation. A provision of more than \$500 million goes towards protective guard services for federal courthouses and related facilities including the procurement, installation and maintenance of security systems and equipment in a program administered by the US Marshals Service.

Approximately \$25 million goes to the Delta Regional Authority to support economic and infrastructure development in communities in the Mississippi Delta region, including a number of counties in Western Kentucky. The bill federally designates the Edward T. Breathitt Parkway

between I-24 and I-69 as part of I-69 (formerly part of I-24). Language involving industrial hemp is also in the bill. In it, funds may not be used to prohibit the transportation, processing, sale or use of industrial hemp grown in accordance with the Agricultural Act of 2014 in or outside of states where it is already grown and cultivated. Kentucky is part of the industrial hemp research pilot program and Congressman James Comer has said he intends to file legislation to remove hemp from a Schedule 1 controlled substance (is it paired with its cousin marijuana).

Source: <http://wkms.org>, 05 May 2017.

## **NUCLEAR COOPERATION**

### **ARGENTINA-CHINA**

#### **Argentina and China will Sign Contract to Construct Two Nuclear Powered Plants**

Argentina and China will sign next 17 May in Beijing a contract for the construction of two new nuclear powered plants, with an investment of US\$ 12.5 billion, according to Argentina's Nuclear energy deputy secretary, Julian Gadano. "We still have some details to iron out, but the frame contract will be signed when president Macri makes an official visit to China", said Gadano, adding details referred to the financing. In effect the long term loan for the construction of the two reactors is 20 years plus an additional eight, which will be repaid when the plant begins generating. The interest rate is estimated in the range of 4.5%.

According to the plan, Atucha III, Argentina's fourth nuclear plant will be constructed in the province of Buenos Aires, close to Atucha II and will produce 745 MW. Fuel will be natural uranium and heavy water, with works scheduled to begin in 2018. Gadano said the whole construction of the project is estimated in seven years costing US\$ 6bn. As to the fifth nuclear plant it will have a 1150 MW power and will be fueled with enriched uranium and light water.

Source: <http://en.mercopress.com>, 06 May 2017.

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RUSSIA–SOUTH AFRICA

**Rosatom not Dropping Nuclear Power Plant Construction Project in South Africa**

Rosatom does not waive participation in the NPP construction project in South Africa despite the local court decision postponing the project, the Russian state nuclear corporation said on Thursday. “Rosatom confirms its willingness to participate in any further procedures that may be brought forward by the relevant authorities of the Republic of South Africa and remains committed to participating in a transparent and competitive procurement

procedure should and when it arises,” the company said. “We are confident in our world class technology, unmatched safety standards and highly competitive solutions,” Rosatom says.

The High Court of South Africa’s province Western Cape recognized 2014 year agreements with Russia, the US and the Republic of Korea on nuclear energy cooperation as invalid and suspended preparation of the tender for construction of NPP with the total capacity of 9.6 GW. The Court ordered to cancel the request for information (RFI) procedure announced earlier by South Africa’s Eskom acting as the nuclear project operator.

Source: [tass.com/economy/](http://tass.com/economy/), 01 May 2017.

**URANIUM PRODUCTION**

CANADA

**Canadian Uranium Company: No Need for Fine for Sludge Spills**

Canadian mining company Cameco has taken steps to prevent a repeat of two radioactive sludge leaks from a truck along a route from Wyoming to

Utah and shouldn’t be fined for the spills, company officials told US regulators on 04 May. The measures will include putting the barium sulfate waste into bags inside a shipment container that has a wide lip at the top to prevent any loose material from sloshing over the edge. The leaks of low-level waste didn’t endanger anybody, an attorney for the company emphasized during a public conference with US Nuclear Regulatory Commission officials in Arlington, Texas.

“Our view is that we should be focusing on actual consequences here, which are low,” attorney Tyson Smith said. The NRC has identified nine possible rule violations by Saskatoon, Canada-based Cameco related to the spills in 2015 and 2016. Both spills occurred along the route between a processing plant for a Wyoming uranium mine and a disposal facility near Blanding, Utah. The truck also crossed part of Colorado. Follow-up tests along the roughly 600-mile route revealed no elevated radioactivity.

The company has halted shipments of barium sulfate waste since the more recent spill in March, 2016.

The possible violations considered by regulators include not shipping the material in appropriate containers. NRC officials plan to decide in the next six weeks what civil penalty,

if any, they plan to pursue against Cameco. The conference Thursday was a routine part of the NRC’s enforcement process, NRC spokeswoman Conley said. The white, paste-like sludge that spilled is a normal byproduct of in-situ uranium mining, a process that involves pumping water mixed with oxygen and baking soda into uranium-bearing sandstone deposits. A solution containing uranium is then pumped to the surface and processed into yellowcake, which can be processed further into nuclear fuel. Wyoming is

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the top uranium-mining state in the nation and Cameco Resources' Smith Ranch-Highland mine in eastern Wyoming is the biggest in-situ uranium mine by production volume in the US

The 2015 spill occurred when the truck driver braked hard to avoid hitting a deer and sludge sloshed over the back of the shipping container. The 2016 spill resulted from a faulty seal along the bottom of the container door, company officials told the NRC. In both cases, workers at White Mesa Mill identified the spills while the truck was still parked alongside US 191 and cleaned up the material, according to a report by mill owner Colorado-based Energy Fuels Resources.

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An NRC inspection identified a variety of possible problems besides the container design, including how Cameco tested and documented the radioactivity of the material. Still, the company urged the NRC to classify any violations on the lowest of the agency's four scales of severity — a classification that doesn't result in a fine. "Ultimately there was low actual safety significance. There were no exposures to members of the public," Smith said.

Source: <http://www.sacbee.com>, 04 May 2017.

## NUCLEAR PROLIFERATION

### NORTH KOREA

#### All Indications Suggest that the DPRK is Moving Ahead with its Nuclear Efforts: IAEA

The Director-General of IAEA, Amano, disclosed this while speaking at the Preparatory Committee for the 2020 Review Conference on the NPT on 02 May. The head of the UN atomic agency expressed serious concern about the nuclear

programme of North Korea. He also regretted that North Korea continued to launch missiles and threaten other countries.

"Without direct access to relevant sites and locations, the agency cannot confirm the operational status of North Korea's nuclear facilities. "But all the indications suggest that North Korea is making progress with its nuclear programme.

"This is extremely worrying," the DG told the participants at the session, where he also provided a broader overview of

important developments in key areas of the IAEA's work relevant to the implementation of the Treaty since 2015. Amano urged North Korea to cooperate with the IAEA in implementing NPT safeguards, to fully comply with its obligations under relevant UNSC resolutions, and resolve any outstanding issues.

**In 2009, North Korea asked IAEA inspectors to leave the country, however, the UN agency had continued to collect and evaluate information from satellite imagery, open-source and trade-related information. North Korea had also withdrawn from the NPT.**

He also noted that IAEA inspectors were ready to return to the country "at short notice" if political conditions allows it. In 2009, North Korea asked IAEA inspectors to leave the country, however, the UN

agency had continued to collect and evaluate information from satellite imagery, open-source and trade-related information. North Korea had also withdrawn from the NPT. A landmark international treaty that went into force in 1970, the NPT aimed to prevent the spread of nuclear weapons and weapons technology. It also aimed to promote cooperation in the peaceful uses of nuclear energy, and further the goal of achieving nuclear disarmament and general and complete disarmament. NPT represents the only binding commitment in a multilateral treaty to the goal of disarmament by the nuclear-weapon States....

Source: <http://pulse.ng/>, 03 May 2017.

### Moscow Doubts North Korea will Ditch Nuclear Weapons as Long as 'Threat Looms'

North Korea will never abandon the idea of having nuclear weapons as long as it feels threat to its security, a Russian foreign ministry official said on 02 May. "It is evident that Pyongyang will not abandon its nuclear weapons as long as it sees itself directly threatened," Ulyanov, director of the ministry's non-proliferation and weapons control department, said at the first session of the Preparatory Committee for the 2020 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons. "We are nonetheless convinced that existing tensions on the Korean Peninsula are caused not only by Pyongyang's nuclear and missile programmes, but also by an increased military activity in the North-East Asia of some regional and especially non-regional States," he said.

The Russian diplomat stressed the necessity of consolidated diplomatic efforts to settle the situation on the Korean Peninsula. "No minute should be lost. Otherwise the confrontation logic may become overwhelmingly dominant," he said. "Russia rejects the nuclear status of the DPRK. We do not accept nuclear tests conducted by Pyongyang and its defiance of the relevant UNSC resolutions."

Source: <http://tass.com/politics/>, 03 May 2017.

### China Gets Rare Rebuke from North Korea for 'Betrayal'

North Korea's official news agency leapt into overdrive 03 May, accusing Chinese politicians and journalists of fomenting trouble and outright "betrayal." "China should no longer recklessly try to test the limitations of our patience," said the

commentary released by the rogue state's Korean Central News Agency. KCNA added, "We have so devotedly helped the Chinese revolution and suffered enormous damage." It said China has regularly "infringed upon the strategic interests" in becoming closer to the US and thus committed a "betrayal" in the process.

The rare rebuke from Pyongyang's official mouthpiece follows President Trump's warming ties to Chinese President Jinping. The Trump administration is hoping the Chinese can convince the North Koreans to abandon a nuclear weapons program and cease development of intercontinental BMDs capable of reaching North America. Still, the North's official news agency reiterated on 03 May it has no plans to end its nuclear program. "For us, nuclear is an absolute symbol of dignity and power, and it is the highest interest," said KCNA. "If we give up nuclear weapons, we will not only intensify economic sanctions, but also military intervention." Beijing indicated 03 May that Pyongyang was taking a dangerous course and should reconsider.

"It is reasonable for the DPRK to pursue its own security, but its nuclear and missile ambitions have put itself and the whole region into dire peril," People's Daily, the official newspaper of China's Communist Party, said in a commentary. "The DPRK must not be obsessed in a wrong path of repeated nuclear tests and missile launches that resulted in rounds of sanctions." DPRK is a reference to North Korea's formal name, the Democratic People's Republic of Korea. Meantime, the US early 03 May announced it launched an unarmed ICBM missile from Vandenberg Air Force Base in California. It was the second such test in

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a week and comes as the Air Force works to improve the Minuteman III missile's reliability and demonstrate to North Korea the US nuclear deterrent capability. At the same time, the US is beefing up its military resources in the Asian region as a show of force with tensions still remaining high over the North Korean threat.

The US Pacific Command said 02 May it sent the Los Angeles-class attack submarine USS Cheyenne to the US Navy base at Sasebo, Japan. The US also activated its THAAD anti-missile defense system in South Korea at a former golf course. A carrier strike group led by the USS Carl Vinson held drills off the Korean Peninsula and there's also been recent training in the Asia-Pacific region involving F-35 stealth fighters and bomber aircraft. The US military confirmed 03 May two B-1B bombers left Guam's Andersen Air Force Base on May 1 to hold training missions with forces from Japan and South Korea.

Source: <http://www.cnc.com>, 03 May 2017.

## **NUCLEAR NON-PROLIFERATION**

### **GENERAL**

#### **Vatican: Nuclear Weapons Give "False Sense of Security"**

The Vatican representative to the world's nuclear body said nuclear weapons "provide a false sense of security" and added he is "concerned" about the situation on the Korean peninsula. S. Urbańczyk, the Vatican representative to the IAEA, was speaking at the first meeting preparing for the 2020 Review Conference of the NPT taking place in Vienna. ...

Urbańczyk said the Vatican, which signed the NPT in 1971, was taking part in the preparatory meeting "to lend its moral authority" to the process. "The Holy See cannot but lament the fact that the potential devastation caused by the use of nuclear weapons so clearly identified over 40 years ago has not been relegated to history," the diplomat said. "In other words, the efforts of the international community to utilize the NPT to make the world safer have not been sufficient." He said the preparatory meetings and the 2020 review

conference itself should "make concrete and consensus-based progress" to stop the spread of nuclear weapons, and work towards "the ultimate goal of abolishing all nuclear weapons."

"Pope Francis, following in the footsteps of his venerable predecessors, has repeatedly called on the international community, not only to seek the end of war, conflict and strife, but to embrace forcefully and advance peace," Urbańczyk said, "the value of peace must be recognized as an 'active virtue,' calling for the engagement and cooperation of each individual and society as a whole." In March, the UN General Assembly hosted a conference in New York to work towards a treaty banning nuclear weapons, which was boycotted by all the nuclear powers.

Francis wrote a personal letter to that conference, offering his support, and calling for a "collective and

concerted multilateral effort to eliminate nuclear weapons," adding that international peace and stability "cannot be based on a false sense of security, on the threat of mutual destruction or total annihilation, or on simply maintaining a balance of power." Urbańczyk on 02 May acknowledged nations have "a right and an obligation" to protect their own security, but said this is "strongly linked" to the promotion of collective security, the common good, and peace.

"In this perspective, a positive conception of peace is required," he said, adding that peace must be built on justice, on integral human development, on respect for fundamental human rights, on the protection of creation, and on dialogue and solidarity. Urbańczyk urged certain concrete steps be taken to work towards nuclear disarmament: Having those countries with nuclear weapons renew arms control and disarmament processes, as called for in the NPT; bringing the CTBT into force, which would end all tests of atomic weapons; and doing more to stop nuclear proliferation, which Urbańczyk said was "a key to progress on nuclear disarmament."

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**The situation surrounding North Korea was a hot topic during the preparatory meeting, and the Director General of the IAEA, Amano, said on 02 May the continuing development of the country's nuclear weapons capability was "extremely worrying."**

May the continuing development of the country's nuclear weapons capability was "extremely worrying." North Korea left the NPT in 2003, and since then has conducted five nuclear tests, two of those in 2016. Amano said "all the indications suggest that North Korea is making progress with its nuclear program." Urbańczyk said the Vatican is "concerned" about the situation on the Korean peninsula, and "supports the continued efforts by the international community to revive negotiations over denuclearization and peace."

Pope Francis spoke about the nuclear crisis in Korea on 30 April.... "I've called on [world leaders], and I will call on them, to work towards resolving the problems through the path of diplomacy," Francis said. Francis put his response in the context of his repeated references over the past two years to a "third world war" being fought in piecemeal fashion, in various global conflict zones, saying those pieces "have arrived and they're concentrated" on North Korea. Referring to the possibility of a nuclear war, the pontiff said, "It would be terrible, and I don't believe humanity right now could take it."

Source: *cruxnow.com* /, 03 May 2017.

## **NUCLEAR TERRORISM**

### **SINGAPORE**

#### **Singapore to Enforce Death Penalty for Nuclear Terrorism Acts**

A person who commits a fatal act of terrorism using radioactive material or nuclear explosive devices will face the mandatory death penalty under new laws passed in Parliament on May 8. The legislation paves the way for Singapore's ratification of the ICSANT. Second Minister for Home Affairs Lee said that while the likelihood of a nuclear terrorist attack in Southeast Asia was remote, the rise of terror group Islamic State means Singapore cannot discount such a scenario and must treat the threat seriously.

"Especially when many countries, including those in our region, use nuclear energy, or are actively exploring the use of nuclear energy," he added. "In February this 2017, Malaysian authorities arrested eight people connected to the theft of Iridium-192, a radioactive material which can be used to make dirty bombs." It will now be a criminal offence to intentionally and unlawfully use any radioactive material or nuclear explosive device, or use or damage a nuclear facility leading to the release of radioactive material, to achieve the effects of terrorism. The penalties will be

pegged at the same level as a murder offence in the Penal Code and therefore, in the event of death caused, lead to the gallows, said Mr Lee, adding that in any other case, life imprisonment will be the punishment.

The new laws also provide for extra-territorial jurisdiction – meaning any

person outside Singapore who commits an act which constitutes a nuclear terrorism offence if carried out in Singapore, is deemed to have committed the act here, said Mr Lee. "If taken into custody, the person would be charged, tried and punished accordingly in Singapore. This provision allows us to prosecute the offender in Singapore, if it is not possible or desirable to extradite him," he explained. "It ensures that perpetrators do not escape punishment, regardless of which country they are from, and where they committed the offences." But Singapore must also facilitate extradition requests by the 109 other countries who are parties to the Convention, and provide mutual legal assistance with its domestic framework.

**"We Take the Possibility Seriously"**: Mr Lee later told the House that Singapore has, over the years, been preparing and developing to deal with the risks of nuclear terrorism. "Agencies such as NEA (National Environment Agency) and SCDF (Singapore Civil Defence Force) have developed the necessary operational capabilities to deal with

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illicit use of nuclear and radioactive material in Singapore," he said. "MHA (Ministry of Home Affairs) and NEA have also been working together to tighten security measures at premises storing high-risk radioactive material." To begin with, Singapore has a strict regulatory regime put in place by NEA to make it hard for radioactive material to end up in the wrong hands, said Mr Lee.

"On import, valid permits are required for all cargo entering our port checkpoints - if necessary they will be subject to X-ray screening and radioactivity checks," he added. "Thus far, we've not detected any breaches involving radioactive material in Singapore." An inter-agency committee continually assesses the threat of nuclear terrorism in Singapore, and in the event of an attack, there will be processes to deal with possible scenarios. "Should such an incident occur, MHA will coordinate a whole-of-Government response," Mr Lee outlined. "SCDF will render assistance to casualties and contain the radioactive material, assisted by our armed forces where necessary. NEA will provide technical advice to help mitigate harm. The police will investigate the act, find the perpetrators and take them to task."

He added: "Beyond efforts from agencies, Singaporeans will need to be prepared for an attack." Authorities may have to evacuate people from affected areas, and members of public may also need to be trained on how to reduce inhalation of harmful substances. "There are no immediate threats, but we take the possibility seriously," said Mr Lee. "It is timely we put in place the necessary legal framework now and join the international community to combat terrorism in all its forms - including nuclear terrorism."

Source: [www.channelnewsasia.com/](http://www.channelnewsasia.com/), 08 May 2017.

## NUCLEAR SAFETY

### GENERAL

#### New Tool for Countries to Assess Their Safety Infrastructure Launched

Developing and maintaining an effective regulatory framework for nuclear and radiation safety is an important challenge all countries face. A new and improved version of a self-assessment tool developed by the IAEA and launched recently helps regulatory bodies meet this challenge. The new version of the IAEA's Self-Assessment of Regulatory Infrastructure for Safety

(SARIS) tool makes it easier for countries to check whether their regulatory infrastructure is in line with IAEA safety standards, a set of more than 100 documents that reflect a consensus on what is considered a high level of nuclear and radiation safety. The safety standards outline the basics of how to establish, maintain and continuously improve governmental, legal and regulatory frameworks for nuclear and radiation safety.

**The SARIS tool enables regulatory bodies to conduct a comprehensive self-assessment review of their national infrastructure, or zoom in on a particular area for a targeted review. SARIS can be particularly useful for countries preparing to host IAEA review services such as the Integrated Regulatory Review Service (IRRS) – a mission designed to help countries strengthen the effectiveness of their national regulatory infrastructure for nuclear and radiation safety. The initial version of SARIS was launched in 2013, and has been updated from time to time.**

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question sets, making it easier to use while also adapting it to the latest changes in the IAEA's safety standards.

The new version has reduced the number of questions by 75 per cent. Combined with other improvements, this means that countries need less resources to carry out self-assessments, be it to address existing gaps in the national framework for safety, or to get ready to host an IRRS mission.

*Source: www.iaea.org, 04 May 2017.*

## **SWEDEN**

### **IAEA Notes Improved Swedish Nuclear Security**

The Swedish framework for physical protection and computer security at nuclear power plants, other nuclear facilities and for nuclear material in transport continues to show good progress, an IAEA report concludes following a mission there last year. An IAEA International Physical Protection Advisory Service (IPPAS) team completed a two-week follow-up mission in October 2016 to review the legislative and regulatory framework for nuclear security in Sweden. The previous IPPAS mission to the country was conducted in May 2011.

IPPAS missions are intended to help IAEA member states strengthen their national nuclear security regime through peer review advice and IAEA guidance. A team of international experts assesses a nation's physical protection systems, compares it with international best practices and recommends improvements. IPPAS missions are conducted both on a nationwide and facility-specific basis. The purpose of the latest IPPAS mission, as agreed with the Swedish government, was to: assess progress in addressing the recommendations and suggestions identified in the 2011 mission; assess the current state of Sweden's nuclear security regime at a national level; and, assess the implementation of physical

protection measures at the Ringhals nuclear power plant.

On completing the mission, the IAEA subsequently submitted its latest mission report to the Swedish government. The country's Radiation Safety Authority (SSM) has now made the report publicly available on its website. According to the IAEA's report, Sweden has made good progress in implementing the recommendations of the previous IPPAS mission. It said it had identified several good practices, but made a number of new recommendations and suggestions for continuous improvement.

The mission found that many of the previous recommendations have led to tangible improvements to the Swedish system of physical protection. Examples include better collaboration between public authorities, development of more clearly defined requirements, and security measures taken at nuclear power plants. The new recommendations relate to issues such as society's capability for sufficiently rapid and robust response to combat malicious acts, assigning priority to safety culture and conducting efficient and effective inspection work.

"The open, transparent and honest engagement with the State, [the] competent

authority and the team at the Ringhals plant are indicative of a culture working to continuously improve," the IAEA report says. "Physical protection at the facility level is broadly in line with international consensus recommendations. At the national level, nuclear security culture could be strengthened within the overall organisational culture by strong leadership over the next several years to give an appropriate focus to nuclear security, especially as operators move to decommission some of the older nuclear power plants, to address the long standing issues." SSM director Anderberg said, "The results from the IPPAS mission are an important element of our

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work to continuously improve Sweden's nuclear security regime. We are currently working on an action plan for dealing with the new suggested improvements."

Source: <http://www.world-nuclear-news.org/>, 04 May 2017.

## **SWEDEN–FRANCE**

### **Nuclear: ENEA-IRSN Agreement on Safety and Radiation Protection**

ENEA and the Institut de Radioprotection et de Sûreté Nucléaire (IRSN) have signed in Paris a Framework Cooperation Agreement on nuclear safety and radiological protection. The agreement, signed by Testa, President of the National Agency for New Technologies, Energy and a Sustainable Economic Development and Niel, Director General of the IRSN, aims at sharing the know-how and advanced studies in the fields of active and passive nuclear safety, modelling, computational codes and radiation protection for a safe and responsible use of civil nuclear technology.

The agreement, lasting seven years, follows the one signed in Paris in 2010, which brought about an intense bilateral activity in the field of nuclear safety, particularly in the prevention, management and assessment of the effects of critical events, as well as the protection of the population and the defence against potential environmental damage. The ENEA-IRSN agreement falls under the more extensive government protocol for the development of the relationship between Italy and France in the field of nuclear safety.

In the countries neighbouring Italy, a dozen facilities are currently in operation, while the rest of Europe counts 15 active reactors and 5 reactors under construction. The objective of nuclear safety is to apply the best internationally recognized procedures regarding the functioning of the

facility, the protection of the population and the external environment in case of adverse events both inside and outside the facility. In this context, ENEA has a long-standing expertise and skills – acquired by participating in the main international research programs- on the safety of the facility, the operating procedures, the protection of people and the external environment, as well as training and information activities aimed at increasing its competencies in the sector.

ENEA also deals with the development of counter-terrorism technologies, with the objective of remotely detecting dirty bombs and explosive, radiological and radioactive materials or materials inaccessible to man. It also deals with research and development activities for testing and qualification of materials, components and systems and research nuclear reactors for testing in physical protection of nuclear materials, as well as nuclear medicine applications with laboratories and experimental infrastructures where it's possible to carry out the entire qualification process of components, devices and systems regarding nuclear safety.

In the radiation protection sector ENEA can provide unique expertise and technical services for health protection in the medical, industrial and research areas, deriving from the use of ionizing radiations of Public Administrations, companies and private users, with the employment in healthcare of the most advanced techniques and methodologies for ionizing radiation measurement with radioprotection purposes. In addition, it conducts activities of ionizing radiation measurement in all the areas of concern: radiotherapy, medical radiodiagnostic, radioprotection in the environmental and hospital sector and in scientific research, carrying out tests and procedures for the standardization and calibration of measuring tools.

Source: <http://www.enea.it/>, 04 May 2017.

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**NUCLEAR WASTE MANAGEMENT**

**USA**

**Consultant Finds TVA Altered Safety Inspections at Nuclear Plant**

A new report has raised concerns that TVA officials changed inspection reports on the work environment at the Watts Bar Nuclear Plant. *The Tennessean* reports that an independent consulting group has found that TVA managers left findings out of inspection reports to avoid any concerns that might impact a new license for a second reactor at the East Tennessee nuclear plant. TVA's Office of the Inspector General hired the consultant following concerns raised in March 2016 that employees were afraid to bring up concerns about plant safety. The consultant's April report points to a lack of clear criteria for evaluating how nuclear standards are met.

It found that previous safety reviews included TVA employees, lacking an independent eye for assessing the plant's work environment.

Source: <http://www.bizjournals.com>, 01 May 2017.

**Marysville, St. Clair Restate Opposition to Lake Huron Nuclear Waste Dump**

At the urging of Michigan state Sen. Pavlov, the cities of Marysville and St. Clair have passed updated resolutions opposing the efforts of Ontario Power Generation to build a Deep Geological Repository for low- and medium-level nuclear waste on the shore of Lake Huron in Kincardine, Ontario, Canada. The Marysville City Council unanimously approved a new resolution of opposition to the dump at its regular meeting on April 24. St. Clair followed suit on May 1.

"In 2015, you took the bold action of passing a resolution opposing the proposed nuclear waste

dump less than one mile from the shorelines of Lake Huron in Canada," Pavlov wrote to each city council. "Unfortunately, our fight is not over." Pavlov noted that townships, cities and counties representing 23 million citizens in Michigan, Illinois, Indiana, Minnesota, Wisconsin, Pennsylvania, New York, Ohio and Ontario have passed 187 resolutions opposing the nuclear waste dump.

"In spite of our majority opposition, Ontario Power Generation is continuing to pursue their dangerous plan to bury over seven million cubic feet of nuclear waste directly across the lake from the residents of St. Clair, Sanilac and Huron counties," Pavlov said. "To even consider constructing a permanent nuclear waste disposal site near our valuable Great Lakes is dumbfounding." City Manager Fernandez and Mayor Damman spoke against the waste

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repository, proposed to be excavated about six-tenths of a mile from the lake at a depth of 2,200 feet. "It's mind-boggling that this is still a topic of concern," said Damman. "I'm a full proponent of this resolution."

The measure passed in Marysville 7-0. The resolution noted that some of the waste "will remain toxic for over 100,000 years." The Great Lakes contain 20 percent of the world's surface fresh water and 95 percent of the fresh water in the US "vital to human and environmental health." "Under the 2012 Protocol Amending the Agreement between Canada and the US of American on Great Lakes Water Quality, the governments of the US and Canada acknowledge the importance of anticipating, preventing and responding to threats to the waters of the Great Lakes," the resolution reads. The two governments "share a responsibility to protect the Great Lakes from contamination from various sources of pollution, including the potential

leakage of radioactivity from an underground nuclear waste repository.”

The resolution noted OPG’s insufficient response to the Canadian government’s request to consider alternative sites for the dump beyond the Great Lakes Basin. It reiterated both cities opposition to any nuclear waste dump on Canadian, US or First Nation property with the basin. It urged President Trump to have the International Joint Commission weigh in on the matter. The IJC, set up by the Boundary Waters Act of 1909, is designed to resolve bi-national issues concerning the lakes.” In OPG’s Dec. 28, 2016, response to the government, the company did not point to specific alternative sites. Instead, OPG outlined two enormous geological formations comprising about 75 percent of the entire province.

The Canadian government again asked OPG for more information about siting and two related issues. The company said it would respond to the Canadian government’s request by May 26. Ed Smith, a legislative aide of US Congressman Mitchell, attended the St. Clair City Council meeting on May 1. Smith noted that Mitchell, who filled the seat long held by Candice Miller, was among the US Congressional delegation from Michigan that sent a letter to President Trump on Feb. 1, urging him to press Ottawa to scrap the project.

*Source: <http://www.voicenews.com>, 07 May 2017.*

### **San Clemente Seeks Stronger Safeguards for Burial of Nuclear Waste**

San Clemente’s City Council will ask the California Coastal Commission to reconsider a permit it issued in 2015 to let Southern California Edison bury 3.6 million pounds of radioactive waste beside the beach at San Onofre. Council members, on a 5-0 vote on May 2, want the commission to impose stronger stipulations on Edison, and if not,

the council wants the permit revoked.

By January, Edison could begin transferring spent fuel from wet storage at the retired San Onofre Nuclear Generating Station into canisters encased underground. A crowd that attended the council’s May 2 meeting at City Hall wanted the council to demand revocation of Edison’s coastal permit outright. Councilman Tim Brown said all that would do is keep the radioactive waste in wet storage at San Onofre, which is not as safe as in dry casks.

The federal government has not made good on decades of promises to relocate San Onofre’s waste into storage in remote areas such as those in Nevada, New Mexico and Texas, the City Council said. But if a solution becomes available, the council said it wants to have an approved dry-cask system in place at San Onofre so San Onofre can go to the top of the federal priority list for hauling away the waste. Headrick, founder of

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San Clemente Green, suggested that once the casks are buried, Edison will be off the hook and will “leave them for us to deal with when they start cracking.”

Lutz, a leader with the advocacy group Citizens Oversight that is suing the Coastal Commission over the permit, criticized the city for not objecting to the coastal permit or even attending the 2015 Coastal Commission meeting where the permit was approved. “This is insane to put this nuclear waste only 100 feet from the ocean,” he said. “The Coastal Commission doesn’t even allow roses to be planted in the coastal zone. And yet they allow a nuclear waste dump ....”

The City Council’s letter to the Coastal Commission, which city staff will draft based on City Council comments at the meeting, will state that: It is unacceptable for San Clemente to be forced to be an involuntary host community for

decades of nuclear waste.

- The city does not agree to be an involuntary host for decades, or possibly forever.
- Edison must be required to complete an “aging management plan” for the dry casks, together with a comprehensive monitoring program, prior to demolition of the power plant’s spent fuel pool.
- Monitoring of the air and ocean must be comprehensive and accessible to the public.
- The burial site close to the ocean is the worst possible scenario, next to key transportation corridors and dense populations.
- While the move from wet to dry storage improves the status quo, the city is passionate in demanding removal of the spent fuel from San Onofre and the Coastal Commission needs to press Edison and the federal government to get it done.
- The city supports federal efforts to open remote storage sites in other states. The Coastal Commission must make that a priority and use its influence to help.
- The commission must require Edison to fund all necessary emergency services through decommissioning of the plant and the storage process.
- If these conditions cannot be met, the city demands that the commission revoke Edison’s burial permit.

Eighteen speakers addressed the City Council, most of them asking the council to call for revocation of the permit.

...Councilwoman Donchak said it is important to call for tougher conditions now. “In January that stuff is going underground,” she said. “We lose a lot of leverage in the conversation, once the installation is complete, and we’re seven months away from that.” Councilman Chris Hamm said all of Southern California needs to raise a voice

to get the spent fuel removed from San Onofre. Brown said that since the federal government has no place to put it, it is vital to get a dry storage system in place, casks ready to be moved if and when an alternative site becomes available. That is the fastest way to get rid of it, Brown said....

*Source: <http://www.ocregister.com/>, 03 May 2017.*

### **NEI Urges Energy Department, Office of Management and Budget to Address Nuclear Waste Funding Concerns**

The Nuclear Energy Institute (NEI) recently sent a letter to Trump Administration officials asking them to address funding issues related to nuclear waste management and support policies to restart used fuel management programs. In her letter to Secretary of Energy Perry and Mulvaney, director of the Office of Management and Budget (OMB), NEI President and CEO Korsnick noted that although the previous administration had ended the Yucca Mountain repository program, the US DOE continued to collect fees from electricity ratepayers into the Nuclear Waste Fund until a November 2013 court order that stopped payments in

May 2014.

“The industry believes this inequity must be addressed and corrected,” Korsnick wrote. “A clear reading of the court decision indicates that there is no basis to budget for collection of the annual fees if there are no funds currently appropriated to implement any program.” Korsnick also said that the fee should not be restored until program expenses exceed annual investment income and DOE conducts a new fee adequacy study that establishes a need for reinstatement of the fees.

The letter also proposed that the US NRC should receive funding to complete the Yucca Mountain license application and for the private interim storage facilities that have submitted license applications. “Interim storage is necessary given the length of time a final repository will take to

**The US NRC should receive funding to complete the Yucca Mountain license application and for the private interim storage facilities that have submitted license applications. “Interim storage is necessary given the length of time a final repository will take to construct and it will allow decommissioned sites and states to re-purpose the land currently being used for on-site fuel storage.**

construct and it will allow decommissioned sites and states to re-purpose the land currently being used for on-site fuel storage," Korsnick wrote. Korsnick urged Perry and Mulvaney to reform the process for funding a revived waste management program in order to provide greater certainty about the implementation of the program. Korsnick will testify at a May 3 hearing of the House Energy and Water Development Appropriations Subcommittee.

*Source: dailyenergyinsider.com, 03 May 2017.*

**Collapsed Tunnel Sealed at US Nuclear Site after Accident**

Workers at a Washington state nuclear site where a tunnel filled with nuclear waste in railroad cars partially collapsed have safely sealed off a large sinkhole that emerged as a result of the collapse, US Energy Secretary Rick Perry said.

Authorities also revealed that the 400-square foot (37-square meter) sinkhole they filled with soil could have been there before it was discovered. That's because the area around the Hanford Nuclear Reservation's waste-filled tunnels is not observed every day by workers who patrol the site's sprawling grounds. Authorities have detected no signs that radiation emanated from the collapsed tunnel, and the hole was filled with 53 truckloads of dirt delivered by workers wearing protective gear, Perry said.

The discovery of the sinkhole prompted the evacuation of some nearby Hanford workers and an order for thousands more to stay inside buildings for several hours at the 500-square-

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mile (1,300-square-kilometer) expanse in Washington state's remote interior. No one was injured.

The plugging of the sinkhole "was accomplished swiftly and safely to help prevent any further complications," Perry said in a statement. "Our next step is to identify and implement longer-term measures to further reduce risks."

Hanford, created during the Manhattan Project to build an atomic bomb during World War II, for decades made plutonium for nuclear weapons. Now it is engaged in cleaning up the radioactive waste. The cause of the partial roof cave-in of the tunnel is under investigation, said Mark Heeter, a spokesman for the Energy Department at the site in southcentral Washington state. ...

Also under investigation is when the cave-in happened. There is a massive volume of nuclear waste stored at the Hanford site, about the size

of the US state of Rhode Island, and not all of the storage sites are inspected daily, Heeter said. Authorities believe the cave-in could have happened as many as four days before the hole was found, and Heeter said they "don't know exactly when it occurred." But the agency said there was no sign that

**The tunnel collapse reinforced longstanding criticism that toxic remnants at Hanford are being stored in haphazard and unsafe conditions, and time is running out to deal with the problem. Washington state officials demanded that the federal Energy Department immediately assess the integrity of all the Hanford tunnels.**

radiation escaped from the hole. The state of emergency declared at Hanford ended and most of the site's 9,000 workers were told to report back to work Thursday.

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federal Energy Department immediately assess the integrity of all the Hanford tunnels.

The 360-foot long (110-meter) rail tunnel that collapsed was built in 1956 from timber, concrete and steel and covered with 8 feet (2.4 meters) of dirt. Eight flatbed railroad cars loaded with radioactive material were parked there in 1965. A much larger nearby tunnel built in 1964 has 28 railroad cars with radioactive waste.

The Energy Department was warned in a 2015 report it commissioned that both tunnels were vulnerable to a collapse from an earthquake or deterioration of tunnel building materials caused

by intense radiation, the report said. The nearby Yakama Nation said it has warned about the safety of the tunnels for several years.

... The tribe also said the tunnels should be cleaned of radioactive waste and radiation long before a deadline of 2042 set by a cleanup agreement between the federal and state governments. The cleanup of Hanford's waste is expected to last until 2060 and cost an additional \$100 billion over the \$19 billion already spent.

*Source: Nicholas K. Geranios, <http://www.chicagotribune.com>, 11 May 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).

Centre for Air Power Studies

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