



Nuclear, Missile & Space Digest

A Fortnightly Newsletter from the Indian Pugwash Society

Volume 12, Number 9

May 15, 2020



Convenor

Amb. Sujan R. Chinoy

Executive Council

Cdr. (Dr.) Probal K. Ghosh

Air Marshal S. G. Inamdar (Retd.)

Dr. Roshan Khanijo

Amb. R. Rajagopalan

Dr. Rajesh Rajagopalan

Shri Dinesh Kumar Yadvendra

Prepared by

Ms. Diya Deep Singh

Ms. Rajrajeshwari Singh



Contents

India

- **India's lockdown sees clean energy sources gain at the expense of coal**

China

- **China's nuclear, radiation safety remains stable: official**
- **'China conducted nuclear tests' a US trick to push West-led treaty: Chinese expert**
- **China's Chang'e-4 probe resumes work for 17th lunar day**
- **China's latest, most advanced howitzer enters Eastern Theater Command service**

Pakistan

- **Karachi 2 containment building completed**
- **Pakistan Criticizes Proposed Sale of US Missile Systems to India**
- **'Kashmir A Nuclear Flashpoint': Pakistan Army Chief Says India Has Endangered Immediate Neighbourhood**

USA

- **U.S. says China may have conducted low-level nuclear test blasts**
- **Indian Point faces no risk from gas pipeline, says NRC**
- **US economists study COVID-19 impact on energy**
- **Indian Point closure during pandemic is wrong, says climate group**
- **Kernel formation marks progress towards TRISO restart**
- **Trump officials eye blocking uranium from Russia, China to help U.S. nuclear industry**
- **NRC grants work hour exemptions to nuclear plants**
- **Long-Lost U.S. Military Satellite Found By Amateur Radio Operator**
- **Working group presents strategy for US uranium revival**
- **Next-generation technologies boosted by US NFWG**
- **U.S. faces tough U.N. battle if it pushes plan to extend Iran arms embargo**
- **US recommends bold steps to assert global nuclear fuel market domination**
- **Accelerating reactor decommissioning**
- **Entergy closes Indian Point unit 2**

Europe

- **EDF extends nuclear reactor outages as virus outbreak hit maintenance plans**
- **Nuclear decommission industry donates gowns to help health workers**
- **UK says Iran's ballistic missile launch is of significant concern**
- **France will maintain Fessenheim nuclear reactor closure schedule - Borne**
- **Czech government takes step towards building new nuclear plant**

Russia

- **Putin orders cabinet to approve nuclear energy technologies program**
- **US may be prepping site in Nevada to test nukes, Russian diplomat warns**
- **Russian diplomat rejects US accusations of Moscow's violation of nuclear test ban**
- **Russian regulator approves infrastructure work for floating NPP**
- **Dialogue with parties to nuclear deal continues, says senior Russian diplomat**
- **US envoy hopes arms control contacts with Russia will resume soon**
- **Nuclear deal does not limit Iran's right to explore space, says Russian diplomat**
- **Russia to hold about 10 more test launches of Tsirkon hypersonic missile — source**
- **Russia prepares for next icebreaker series**
- **Radiation levels in Russia normal after Chernobyl wildfire**
- **About 1.7 million people affected by Chernobyl nuclear disaster in Russia — ministry**
- **Fires in Chernobyl exclusion zone engulf around 20,000 hectares**
- **Russia's Vepr nuclear sub to return to service in June — source**
- **Russia flies nuclear-capable bombers over Baltic Sea in training exercise**
- **Rosatom in talks on mobile datacenters supplies to India**
- **Russian icebreaker completes unique tasks during MOSAiC expedition to Arctic**
- **Russian envoy blasts US for claiming to be part of Iran nuclear deal**
- **Batch of nuclear fuel delivered to Iran's Bushehr nuclear power plant — Russian embassy**

West Asia

Iran

- **U.S. pressure on Iran during coronavirus outbreak is 'inhumane': Rouhani**
- **Iran says it puts first military satellite into orbit, triggers U.S. condemnation**
- **Iran says it will fare better than others after oil crash amid battered economy**

East Asia

Japan

- **Japan's Tepco weighs options over projected tsunami threat to Fukushima plant**
- **Fukushima disaster victims cannot sue GE in U.S. - 1st Circuit**

North Korea

- **North Korea's foreign ministry denies letter sent to Trump: KCNA**

South Korea

- **Korea to spend \$264 million on nuclear decommissioning research lab**
- **Top nuclear envoys of S. Korea, US assess peninsula situation amid rumors about NK leader's health**

Misc

- **Medical isotope supply chain faces challenges from COVID-19**
- **Fires near Chernobyl pose 'no risk to human health', IAEA says**
- **Trump and Putin issue rare joint statement promoting cooperation**
- **The Biggest Military Budgets As A Share Of GDP In 2019 [Infographic]**
- **Exclusive: India, Pakistan nuclear procurement networks larger than thought, study shows**

Op-ed

India

- **It's Only A Matter Of Time Before The Next India-Pakistan Nuclear Crisis**
- **Imran Khan's Nuclear Rhetoric**
- **At the edge of a new nuclear arms race**

China

- **Xi: Build 'great space power'**

Pakistan

- **Indian BMD Program: Strategic Response of Pakistan** Published 3 weeks ago on April

USA

- **Tearing up the Open Skies Treaty Would Be a Mistake for Trump**
- **How America should give the boot to the cult of Kim Jong Un**
- **Will the Trump Administration Try To Kill the Iran Nuclear Deal Once and For All**
- **America's New Sniffer-Plane Would Track Rogue Nuclear Weapons**

Russia

- **Meet Russia's Underwater Hypersonic Cruise Missiles**
- **Russia-U.S.: No Reset, Just Guardrails**

East Asia

North Korea

- **North Korea Continues to Flout Trump, Advance Nuclear Ambitions**
- **COVID-19 and N. Korea's nuclear weapons: averting catastrophe**
- **Satellite images of luxury boats further suggest North Korea's Kim at favoured villa: experts**

South Korea

- **Hollow NK projects**

Think Tanks

- **Nuclear safety: Why India relies on Cesium-137**
- **Nuclear games at Lop Nur**
- **Why are US-Russia relations so challenging?**
- **How many intensive care beds will a nuclear weapon explosion require?**

Reports and interviews

- **By any calculus, India qualifies for UNSC permanent seat: Syed Akbaruddin**

India

India's lockdown sees clean energy sources gain at the expense of coal

Rajesh Kumar Singh

The Print, April 22, 2020

Clean energy is gaining a greater share of India's energy mix, a silver lining amid the country's prolonged virus lockdown that has cut power demand by about a quarter. Electricity generated from renewable sources, nuclear and hydropower made up 27% of India's total generation as of April 15, data from grid operator National Load Despatch Centre show. That's up five percentage points from March 18, a week before Prime Minister Narendra Modi ordered the world's largest lockdown to contain the coronavirus outbreak.

The gain came at the expense of coal, which saw its share shrink to 65% from 71% over the period. The figures are another sign that the dominant fossil fuel is facing increased competition in India from cleaner sources of energy. India has embraced renewables to tackle its notorious air pollution and to reduce carbon emissions. Projects enjoy a "must-run" status, meaning power distribution companies are compelled to use solar or wind energy whenever generated. The result: they turn down coal power when demand slips.

<https://theprint.in/environment/indias-lockdown-sees-clean-energy-sources-gain-at-the-expense-of-coal/406373/>

China

China's nuclear, radiation safety remains stable: official

China Daily, April 15, 2020

China has maintained an overall stable situation in nuclear and radiation safety with the world's second largest number of nuclear power generating units in operation, an official with the Ministry of Ecology and Environment (MEE) said Wednesday. The country's nuclear power development has remained safe in terms of technology use and environmental protection, said Guo Chengzhan, director of the MEE's department of nuclear facilities safety supervision. The country's 47 nuclear power units in operation meet all safety standards, while the quality of the 15 sites under construction is also ensured, said Guo. A total of 18 nuclear fuel cycle facilities are in safe operation, with about 150,000 radioactive sources and nearly 200,000 radiation devices reporting normal safety conditions, he said. Guo said China will further strengthen its supervision of nuclear facilities and management of radioactive sources, amid efforts to ensure its nuclear and radiation safety.

<https://global.chinadaily.com.cn/a/202004/15/WS5e971473a3105d50a3d167e7.html>

'China conducted nuclear tests' a US trick to push West-led treaty: Chinese expert

Fan Lingzhi and Liu Xuanzun

Global Times, April 16, 2020

The Chinese Foreign Ministry on Thursday rubbished the US' accusation that China may have secretly conducted nuclear tests, and a Chinese nuclear disarmament expert said the groundless accusation is a US attempt to push China into a Western countries-led nuclear treaty while also diverting domestic pressures caused by the novel coronavirus. The Chinese statements came after the US State Department on Wednesday released the Executive Summary of 2020 Adherence to and Compliance with Arms Control, Nonproliferation, and Disarmament Agreements and Commitments, which claimed that China may have secretly conducted low-level nuclear test blasts at the Lop Nur nuclear weapons test site throughout 2019. The report did not provide evidence for what it claimed to be "zero yield" nuclear test blasts, Reuters reported on Thursday.

The US' accusation is completely groundless, fictitious and not even worth refuting, Foreign Ministry spokesperson Zhao Lijian said at a regular press conference held on Thursday. Zhao said that China had been among the first countries to sign the Comprehensive Nuclear Test Ban Treaty, and China always supported the aim and purpose of the treaty, kept its promise of suspending nuclear tests, and made important contributions to the work of the treaty's Preparatory Commission. Zhao noted that the technical secretariat of the Preparatory Commission had given full affirmation to the data transmission work of observation stations in China. The US side ignored facts and made groundless speculation, and its accusation against China is irresponsible and reflects ulterior motives, Zhao said.

<http://www.globaltimes.cn/content/1185857.shtml>

China's Chang'e-4 probe resumes work for 17th lunar day

China Military online, April 17, 2020

The lander and rover of the Chang'e-4 probe have resumed work for the 17th lunar day on the far side of the moon after "sleeping" during the extremely cold night. The lander woke up at 1:24 p.m. Friday (Beijing time), and the rover awoke at 8:57 p.m. Thursday. Both are in normal working order, according to the Lunar Exploration and Space Program Center of the China National Space Administration. The Chang'e-4 probe, launched on Dec. 8, 2018, made the first-ever soft landing on the Von Karman Crater in the South Pole-Aitken Basin on the far side of the moon on Jan. 3, 2019.

A lunar day equals 14 days on Earth, and a lunar night is the same length. The Chang'e-4 probe, switching to dormant mode during the lunar night due to the lack of solar power, has survived about 470 Earth days on the moon. The rover Yutu-2, or Jade Rabbit-2, has worked much longer than its three-month design life, becoming the longest-working lunar rover on the moon. Carrying scientific instruments such as panoramic camera, lunar penetrating radar, infrared imaging spectrometer and neutral atom detector, the rover will continue to move northwest to conduct scientific detection.

http://eng.chinamil.com.cn/view/2020-04/17/content_9794696.htm

China's latest, most advanced howitzer enters Eastern Theater Command service

Liu Xuanzun

Global Times, April 30, 2020

China's most advanced vehicle-mounted howitzer, the PCL-181, recently entered service with the People's Liberation Army (PLA) Eastern Theater Command, the theater command confirmed on Thursday. With technical details revealed for the first time, experts say the weapon is one of the best in the world. In the past few days, troops of a brigade under the Eastern Theater Command received the 155mm vehicle-mounted howitzer, which made its public debut as a newly developed weapon at the National Day military parade on October 1, 2019 in Beijing, the Eastern Theater Command confirmed on its Sina Weibo account on Thursday.

A single Y-20 can likely carry two PCL-181s, or a combination of one PCL-181 and one 30 ton-class Type 15 lightweight main battle tank, both of which are choices that offer frontline troops immense firepower, the expert said, noting that this will give the Chinese military more tactical flexibility in strategic transport and quick reaction operations. The vehicle the howitzer is mounted on has a large driver's cab that can accommodate all six artillery squad members, protecting them with bulletproof glass that enhances the unit's survivability. Digitalized control panels can be found in the cab, and this highly digitalized system allows artillery gun deployment with the press of a button, automatic gun calibration and half-automatic ammo reload.

<https://www.globaltimes.cn/content/1187199.shtml>

Pakistan

Karachi 2 containment building completed

World Nuclear News, April 16, 2020

The concreting of the outer dome of the double-layer containment building at unit 2 of the Karachi nuclear power plant in Pakistan was completed on 10 April, China National Nuclear Corporation (CNNC) has announced. The two Chinese-designed Hualong One reactors being built at the site are scheduled for commercial operation in 2021 and 2022, respectively. The pouring of the last layer of concrete for the unit's outer containment dome marks the successful capping of the structure, "laying a solid foundation for subsequent installation and final adjustments, and the reactor's operation", CNNC said. It noted the height of the completed containment building has now reached almost 74 metres.

Karachi 2 and 3 are the first export of China's Hualong One design, with construction of unit 2 beginning in 2015 and unit 3 in 2016. The outer steel dome - measuring about 53m in diameter and over 23m in height, and weighing about 366 tonnes - was placed upon the top of the containment building walls of unit 2 in June 2019. Installation of the reactor internals of Karachi 2 was completed in January 2019, while installation of unit 3's was completed earlier this month.

<https://www.world-nuclear-news.org/Articles/Karachi-2-containment-building-completed>

Pakistan Criticizes Proposed Sale of US Missile Systems to India

Ayaz Gul

Voice of America, April 17, 2020

Pakistan said Friday that a proposed new multimillion-dollar sale of American missile systems to Islamabad's archrival, India, would destabilize an already "volatile" situation in South Asia. The U.S. Department of State on Tuesday cleared the delivery of 10 AGM-84L Harpoon Block II air-launched missiles, 16 MK 54 lightweight torpedoes and related equipment to India.

New Delhi has not commented on the \$155 million deal, which is still subject to congressional approval. "Pakistan has articulated its concerns regarding the sale of sophisticated weapons to India, which would further destabilize the region," Foreign Ministry spokesperson Aisha Farooqui told her weekly news conference. The deal is "particularly disturbing" at the time when global efforts are focused on fighting the COVID-19 pandemic, Farooqui said, while responding to a question from VOA. "There is a high possibility of India conducting a false flag operation while global efforts are directed towards combating the pandemic."

<https://www.voanews.com/south-central-asia/pakistan-criticizes-proposed-sale-us-missile-systems-india>

'Kashmir A Nuclear Flashpoint': Pakistan Army Chief Says India Has Endangered Immediate Neighbourhood

Outlook, April 27, 2020

The Balakot airstrike and the abrogation of Article 370 of the Indian Constitution to bifurcate Jammu and Kashmir are the two significant events that will have a "lasting imprint" on the geopolitical situation of South Asia, according to Pakistan Army chief General Qamar Javed Bajwa. In an article in the 'Green Book 2020', a research journal of the Pakistan Army which is recognised by the Higher Education Commission of Pakistan and published biennially, General Bajwa also describes Kashmir as a "nuclear flashpoint".

General Bajwa being the Patron-in-Chief of the journal expressed his view in a "Note" at the first page of the publication. "Year 2019 witnessed two significant events which will have lasting imprint on the geopolitics of this region; first, the unwarranted Balakot Strike by Indian Air Force on 26th February and second, the unilateral annexation of Jammu and Kashmir on August 5, through abrogation of Article 370 and 35A, "the Pakistan Army chief said.

<https://www.outlookindia.com/website/story/world-news-kashmir-a-nuclear-flashpoint-pakistan-army-chief-says-india-has-endangered-immediate-neighbourhood/351599>

USA

U.S. says China may have conducted low-level nuclear test blasts

Jonathan Landay

Reuters, April 16, 2020

China may have secretly set off low-level underground nuclear test explosions despite claiming to observe an international pact banning such blasts, the U.S. State Department said in a report on

Wednesday that could fuel U.S.-Chinese tensions. The finding, first reported by the Wall Street Journal, may worsen ties already strained by U.S. charges that the global COVID-19 pandemic resulted from Beijing's mishandling of a 2019 outbreak of the coronavirus in the city of Wuhan.

U.S. concerns about Beijing's possible breaches of a "zero yield" standard for test blasts have been prompted by activities at China's Lop Nur nuclear test site throughout 2019, the State Department report said. Zero yield refers to a nuclear test in which there is no explosive chain reaction of the type ignited by the detonation of a nuclear warhead.

<https://www.reuters.com/article/us-usa-china-nuclear/china-may-have-conducted-low-level-nuclear-test-blasts-u-s-says-idUSKCN21X386>

Indian Point faces no risk from gas pipeline, says NRC

World Nuclear News, April 16, 2020

Entergy's Indian Point nuclear power plant in New York State would remain protected in the unlikely event that a newly-installed 42-inch natural gas transmission pipeline that runs near it ruptures, the US Nuclear Regulatory Commission (NRC) has concluded. However, it said Entergy should revisit the assumptions it made in its analysis. Enbridge Inc's Algonquin Gas Transmission pipeline transports 3.08 billion cubic feet per day of natural gas through 1131 miles (1820 km) of pipeline through New Jersey, New York, Connecticut, Rhode Island and Massachusetts, connecting to the Texas Eastern Transmission and the Maritimes & Northeast pipelines. The 37.6 mile-long Algonquin Incremental Market (AIM) pipeline crosses the Indian Point plant site and entered service in January 2017. The plant, located on the Hudson River, lies about 24 miles from New York City.

A 26 February directive from NRC's Executive Director for Operations, Margaret Doane, called for a review by a team of NRC and external experts to review issues raised in an earlier NRC Inspector General's Event Inquiry into the NRC's 2014 safety analysis of the AIM pipeline. The team members were chosen to be independent from the previous work described in the Event Inquiry and included both NRC staff and external members with expertise regarding the concerns that were raised. The team's 8 April report concludes that, "even though Entergy and the NRC made some optimistic assumptions" in analysing potential rupture of the pipeline, the Indian Point reactors remain safe. The report says the pipeline was installed "using modern techniques, stringent quality standards, and construction precautions that limit the likelihood of later pipeline damage". The team notes that, as Indian Point unit 2 is scheduled to shut down by the end of this month and unit 3 by 30 April 2021, "the risk of a pipeline rupture affecting the reactor units is very small".

<https://www.world-nuclear-news.org/Articles/Gas-pipeline-poses-no-risk-to-nearby-Indian-Point>,

US economists study COVID-19 impact on energy

World Nuclear News, April 17, 2020

COVID-19-induced reductions in electricity pricing and energy demand from the shuttered US economy could be especially problematic for merchant baseload generators including nuclear, according to an assessment by the Brattle Group. Electricity loads across most of the USA fell during

February and March, but less than half of this decline is likely attributable to COVID-19, the report finds. Some significant utility impacts from the pandemic's effects can already be anticipated, said Frank Graves, a Brattle principal and a co-author of Impact of COVID-19 on the US Energy Industry.

"The utilities' cost of capital likely has increased due to increased volatility and cost-recovery risks. Further, some merchant generators, which are directly exposed to market prices and lower demand, are likely to face financial challenges. We expect the impact of COVID-19 to become more discernible in the coming weeks as information emerges about how long the business closures are likely to last," he said. Up to the end of March, the visible effect of the pandemic on US utility industry market conditions has lagged relative to the depth of impact on other sectors, such as healthcare and employment, the report's authors note. This is partly due to the essential nature of the utility industry, they said.

<https://www.world-nuclear-news.org/Articles/US-economists-study-COVID-19-energy-industry-impac>

Indian Point closure during pandemic is wrong, says climate group

World Nuclear News, April 20, 2020

US-based Climate Coalition is urging New York Governor Andrew Cuomo to suspend the closure of the Indian Point nuclear power plant, due to take place later this month. Closing the plant now will add unnecessarily to New York City's vulnerability as state resources are stretched dealing with the COVID-19 pandemic, the group says. The coalition - a confederation of individuals, environmental groups, climate and clean energy advocates - is inviting supporters to sign an open letter to Cuomo, as well as a petition against the closure of the plant.

In the letter, the group thanks Cuomo for his leadership at "this very difficult time", describing the ongoing pandemic as the worst disaster in New York's recent history. "Your battle to procure ventilators and PPEs for hospitals will help save lives but there is something else important you can do to not worsen the impact of this already disastrous pandemic," it says. "You can exercise your executive power to suspend the closure of Indian Point." Postponing the shutdown of Indian Point "and preventing a surge of new, toxic fossil fuel pollutants from spewing into the air while people are perishing from respiratory failure, is probably the most critical, preventative thing you can do to ease suffering and additional deaths," the letter says, citing studies finding air pollution to be linked to higher coronavirus death rates.

<https://www.world-nuclear-news.org/Articles/Pandemic-wrong-time-to-close-Indian-Point,-climate>

Kernel formation marks progress towards TRISO restart

World Nuclear News, April 22, 2020

Restart activities at BWX Technologies Inc's (BWXT) TRISO fuel manufacturing facility in Lynchburg, Virginia are progressing ahead of schedule, the company said yesterday. It has completed the demonstration of the fuel kernel sintering process and plans to bring two additional furnaces

online to meet projected production demand before restart activities are complete. BWXT says it is the only US manufacturer of irradiation-tested uranium oxycarbide tristructural isotropic (TRISO) fuel using production-scale equipment. The company in October 2019 announced plans to restart and expand its existing TRISO production line to meet emergent client interests in Department of Defense microreactors, space reactors and civil advanced reactors.

TRISO particles contain a spherical kernel of enriched uranium oxycarbide surrounded by layers of carbon and silicon carbide, which contains fission products. Such fuel can withstand extreme heat and has very low proliferation concerns and environmental risks. BWXT has cooperated with the US Department of Energy on the development and qualification of TRISO-based fuel for over 15 years, the company said. Late last year, BWXT announced it had started the production of the uranium solutions which are a starting material for kernel formation. It has now also demonstrated the capability to form and sinter the uranium oxycarbide fuel kernels that serve as a precursor to the TRISO coating process, the company said. Sintering is the process of applying heat and pressure to form the solid kernel.

<https://www.world-nuclear-news.org/Articles/Kernel-formation-marks-progress-towards-TRISO-rest>

Trump officials eye blocking uranium from Russia, China to help U.S. nuclear industry

Timothy Gardner

Reuters, April 23, 2020

Trump administration officials on Thursday recommended granting U.S. energy regulators the ability to block imports of nuclear fuel from Russia and China and detailed plans for setting up a government stockpile of uranium sourced from domestic miners. The recommendations are meant to address growing concern in Washington that the United States has ceded its global leadership in nuclear technology in recent decades, and to boost domestic nuclear power producers and uranium miners suffering from a lack of investment.

Energy Secretary Dan Brouillette told reporters on a call that the report from the Nuclear Fuel Working Group was a “road map for what we think needs to be done to not only revitalize but re-establish American leadership in this entire industry.”

<https://www.reuters.com/article/us-usa-uranium/trump-officials-eye-blocking-uranium-from-russia-china-to-help-u-s-nuclear-industry-idUSKCN2252TM>

NRC grants work hour exemptions to nuclear plants

World Nuclear News, April 23, 2020

The US Nuclear Regulatory Commission (NRC) has to date granted work hour exemptions to seven nuclear power plants giving licensees flexibility to manage personnel resources to maintain plant operational safety and security during a period when facility staffing may be reduced due to the COVID-19 pandemic. The NRC, under Title 10 of the Code of Federal Regulations (CFR) Part 26, regulates work hours to ensure that nuclear plant workers do not exceed a given number of work

hours within a specified period and also sets requirements for minimum rest breaks between shifts and days off during shift cycles. The regulator may, in response to applications from licensees, grant exemptions if it decides it is safe and legal to do so.

A "sudden and potentially long-term reduction in available facility staffing", such as that which may result due to the COVID-19 pandemic, was not considered during the rulemaking that established the 10 CFR 26.205(d) work hour controls, the NRC told plant operators in a letter dated 28 March. "Exemption from this requirement will provide licensees flexibility in management of personnel resources to maintain plant operational safety and security during a period when facility staffing may be reduced due to the COVID-19 PHE [public health emergency]", it said.

<https://www.world-nuclear-news.org/Articles/NRC-grants-work-hour-exemptions-to-nuclear-plants>

Long-Lost U.S. Military Satellite Found By Amateur Radio Operator

Joe Palca and Scott Neuman

NPR, April 24, 2020

There are more than 2,000 active satellites orbiting Earth. At the end of their useful lives, many will simply burn up as they reenter the atmosphere. But some will continue circling as "zombie" satellites — neither alive nor quite dead.

"Most zombie satellites are satellites that are no longer under human control, or have failed to some degree," says Scott Tilley. Tilley, an amateur radio operator living in Canada, has a passion for hunting them down. Amateur Astronomer Finds NASA Satellite Long Given Up For Dead

<https://www.npr.org/2020/04/24/843493304/long-lost-u-s-military-satellite-found-by-amateur-radio-operator>

Working group presents strategy for US uranium revival

World Nuclear News, April 24, 2020

Directly purchasing uranium by establishing a uranium reserve, ending the Department of Energy's bartering of uranium and re-evaluating DOE's excess uranium inventory management policy are among the US Nuclear Fuel Working Group's (NFWG) recommendations to the US Administration in a strategy it published yesterday on reviving the USA's nuclear fuel cycle.

President Donald Trump established the NFWG on 12 July last year to undertake a fuller analysis of national security considerations with respect to the entire nuclear fuel supply chain. This followed a presidential decision in response to a Section 232 Petition from two US uranium miners, Energy Fuels Inc and Ur-Energy, which called for a quota on uranium imports.

<https://www.world-nuclear-news.org/Articles/Working-group-lays-out-strategy-for-reviving-US-in>

Next-generation technologies boosted by US NFWG

World Nuclear News, April 27, 2020

Support for the development of next-generation technologies and advanced fuels outlined in the report of the US Nuclear Fuel Working Group (NFWG), published last week, will enable the country to remain competitive in this area, the Nuclear Energy Institute has said. Meanwhile, fuel cycle company Centrus said immediate action to restore the viability of the front-end of the US nuclear fuel cycle supports work to demonstrate the production of high-assay low-enriched uranium nuclear fuels and to establish an assured US supply base.

The USA has gone from being the world's largest exporter of nuclear fuel to the world's biggest importer, Centrus said. The collapse of US uranium mining, conversion and enrichment capabilities has greatly reduced the country's influence in the nuclear fuel market - and with it, US leverage to insist upon the highest standards of safety and non-proliferation in exchange for US exports of nuclear fuel, it added.

<https://www.world-nuclear-news.org/Articles/Next-generation-technologies-strengthened-by-US-NF>

U.S. faces tough U.N. battle if it pushes plan to extend Iran arms embargo

Humeyra Pamuk, Michelle Nichols and Arshad Mohammed

Reuters, April 28, 2020

Washington has shared its strategy, confirmed by a U.S. official speaking on condition of anonymity, with Britain, France and Germany, who are council members and parties to the 2015 deal between Iran and world powers that prevents Tehran from developing nuclear weapons in exchange for sanctions relief. Under that deal, a U.N. arms embargo on Iran is due to expire in October. A U.S.-drafted resolution to extend the embargo has been given to Britain, France and Germany, the U.S. official confirmed, but U.N. diplomats said it has not been shared with the remaining 11 council members, including Russia and China.

“It will be dead on arrival,” predicted a Security Council diplomat, speaking on condition of anonymity. A resolution needs nine votes in favor and no vetoes by Russia, China, the United States, Britain or France to be adopted. Diplomats said the United States would likely struggle to get Russia and China to allow an arms embargo extension.

<https://www.reuters.com/article/us-usa-iran-sanctions/u-s-faces-tough-u-n-battle-if-it-pushes-plan-to-extend-iran-arms-embargo-idUSKCN22930E>

US recommends bold steps to assert global nuclear fuel market domination

Nuclear Engineering, April 28, 2020

The US Nuclear Fuel Working Group's (NFWG) has published a report, Restoring America's Competitive Nuclear Energy Advantage: A strategy to assure US National Security, aimed at

reviving the USA's nuclear fuel cycle. President Donald Trump established the NFWG in July 2019 to undertake a fuller analysis of national security considerations for the entire nuclear fuel supply chain. This followed a presidential decision in response to a Section 232 Petition from two US uranium miners, Energy Fuels Inc and Ur-Energy, which called for a quota on uranium imports. However, the report's recommendations extend far beyond uranium processing.

"The clear outcome of the Working Group's efforts is confirmation that it is in the nation's national security interests to preserve the assets and investments of the entire US nuclear enterprise and to revitalise the sector to regain US global nuclear leadership," it says. "We can accomplish this by addressing domestic and international security interests, expanding nuclear generation, minimising commercial fleet fiscal vulnerabilities, assuring defence needs for uranium, and levelling the playing field against [foreign] state-owned enterprises."

<https://www.neimagazine.com/news/newsus-recommends-bold-steps-to-assert-global-market-dominance-7895000>

Accelerating reactor decommissioning

Nuclear Engineering, April 28, 2020

The USA has the largest operating nuclear fleet in the world today, with 97 commercial units. But the fleet is now ageing. The average operating lifetime is 39 years and only eight are under 30 years old. Although the US Nuclear Regulatory Commission (NRC) has granted licence extensions for a 60-year operating life at 89 of the 97 US units, some plant owners have recently opted for early retirements of their nuclear units at 45 to 50 years old. The oldest reactor in the US nuclear fleet, Exelon's 49-year old 636MWe Oyster Creek BWR in New Jersey, closed in September 2018.

Over the past decade severe competition from electricity generation using low-cost shale gas has hurt the competitiveness of US nuclear. Record low wholesale electricity prices (around \$20/MWh) plus the significant cost of life extension (PLEX) upgrades have together driven early nuclear plant retirements. Low carbon zero emission credit (ZEC) payments provided by President Trump's administration to energy utilities are helping to partially subsidise nuclear. But inevitably reactor closures are set to increase in the USA over the next 10 years, as 46 units (47% of the fleet) approach 50 years of operation.

<https://www.neimagazine.com/features/featureaccelerating-reactor-decommissioning-7895276/>

Entergy closes Indian Point unit 2

World Nuclear News, April 30, 2020

Unit 2 of Entergy's Indian Point nuclear power plant will be shut down for the final time today after more than 45 years of operation. Unit 3, the remaining operating unit at the site in the state of New York, is scheduled to be permanently shut down by this time next year. "Over the last 45 years, thousands of dedicated professionals have operated Unit 2 at Indian Point - safely, securely and reliably," Entergy Chief Nuclear Officer Chris Bakken said. "We owe each of them our thanks for a job well done and for their commitment to the highest standards of professionalism."

The two-unit plant is in the south-east of New York state, 24 miles (39 kilometres) from New York City. Unit 2 - a pressurised water reactor (PWR) which has a net generating capacity of 998 MWe - began commercial operation in August 1974 and unit 3 - a 1030 MWe (net) PWR - two years later. The plan to shut down the reactors was announced by Entergy in 2017 and is pursuant to settlement agreement with the State of New York. This was the result of a number of factors, including sustained low current and projected wholesale energy prices that reduced revenues, the company said yesterday. The agreement included a provision that in the event of an emergency situation affecting electricity generation, the state may agree to allow the plant to continue operating for up to five more years. Indian Point 2 is currently licensed to operate until 2024 and unit 3 until 2025.

<https://www.world-nuclear-news.org/Articles/Indian-Point-2-shuts-down>

Europe

EDF extends nuclear reactor outages as virus outbreak hit maintenance plans

Reuters, April 16, 2020

French utility EDF on Thursday extended outages at three nuclear reactors including the Flamanville 1 and 2 facilities by several months as it adjusts its maintenance schedule due to the coronavirus outbreak. The utility said earlier on Thursday that it expected a sharp drop in its domestic nuclear power output to a record low in 2020 as a result of the fall in business activity caused by the coronavirus. EDF extended the outages at the 1,300 megawatt each Flamanville 1 and 2 reactors in the north of France by five months until the end of October.

It had already reduced staffing at the nuclear power plant to around 100 from 800 because of a cluster of coronavirus outbreaks in the area. The reactors have been offline since September and January 2019 respectively for maintenance and had been scheduled to resume production at the end of May. The company said that the outages could be extended due to complex maintenance activities. It extended the production shutdown at its 1,300 MW Paluel 2 reactor by four months until Dec. 31, saying the “duration of the outage may be longer due to technical issues requiring the implementation of a new and complex process”. The Paluel 2 reactor was halted in October for refuelling and maintenance and had been expected to resume on at the end of August.

<https://www.reuters.com/article/us-france-nuclearpower/edf-extends-nuclear-reactor-outages-as-virus-outbreak-hit-maintenance-plans-idUSKCN21Y28P>

Nuclear decommission industry donates gowns to help health workers

Reuters, April 23, 2020

Britain's nuclear industry is giving specialised equipment for the country's health service to help fight the coronavirus outbreak, with Sellafield Limited, which reprocesses nuclear fuel, donating 20,000 gowns and other kit. Martin Chown, chief executive of Sellafield, said the nuclear industry had hoped to tackle a global shortage of safety kit for those working in hospitals and treating patients with COVID-19. Britain's government has been criticised by some health workers for failing to provide all doctors, nurses and care workers with the necessary personal protection equipment (PPE). The government says there have been challenges in supply and distribution but that it is working hard to deliver the kit.

“Gowns were identified as being in particular short supply. Our knowledge of the PPE supply chain meant we could quickly establish a reliable route for high quality items via a national manufacturer and a local distributor,” Chown said in a statement. Andrew van der Lem, the Nuclear Decommissioning Authority’s Head of Government Relations said it was part of wider effort by its group, which has also donated 32,000 pairs of gloves, more than 5,000 full protective suits and over 8,000 face masks.

<https://www.reuters.com/article/us-health-coronavirus-britain-nuclear/nuclear-decommission-industry-donates-gowns-to-help-health-workers-idUSKCN2252SJ>

UK says Iran’s ballistic missile launch is of significant concern

Reuters, April 24, 2020

Britain said on Friday that Iran’s launch of a military satellite using ballistic missile technology earlier this week was of significant concern and inconsistent with a United Nations Security Council resolution. U.S. Secretary of State Mike Pompeo called for Iran to be held accountable for the launch and said he believed it defied the U.N. Security Council resolution. A 2015 U.N. resolution “called upon” Iran to refrain for up to eight years from work on ballistic missiles designed to deliver nuclear weapons following an agreement with six world powers to limit its nuclear programme.

“Reports that Iran has carried out a satellite launch – using ballistic missile technology – are of significant concern and inconsistent with UN Security Council Resolution 2231,” a Foreign Office spokesman said. “The U.N. has called upon Iran not to undertake any activity related to ballistic missiles designed to be capable of delivering nuclear weapons. Iran must abide by this,” the spokesman said. Tehran denies U.S. assertions that such activity is a cover for ballistic missile development and says it has never pursued the development of nuclear weapons. In a tweet, Iranian Foreign Minister Mohammad Javad Zarif reiterated Iran’s position that its missiles are not “designed” to carry nuclear arms, as required by the U.N. resolution 2231.

<https://www.reuters.com/article/us-iran-satellite-britain/uk-says-irans-ballistic-missile-launch-is-of-significant-concern-idUSKCN2261JA>

France will maintain Fessenheim nuclear reactor closure schedule - Borne

Reuter, April 27, 2020

French Environment Minister Borne says on Radio Europe 1 that France will maintain Scheduled closure of Fessenheim Reactor.

<https://www.reuters.com/article/idUSL5N2CF1K9>

Czech government takes step towards building new nuclear plant

Reuters, April 27, 2020

The Czech government on Monday approved agreements with majority state-owned electricity producer CEZ setting out the framework for building a new nuclear power block to come online in 2036, state and company officials said. The Czech state has long been in talks with CEZ, in which it owns a 70% stake, about expanding its nuclear power fleet to replace blocks that will expire in the coming decades as well as lignite power plants to be retired in the 2030s as Europe weans itself off coal. Costs and financing have been major sticking points in light of delays and cost overruns at other

projects, Germany's decision to abandon nuclear energy and CEZ's unwillingness to take on risks of a project favoured by politicians that may never pay for itself.

The government has estimated a new 1,200 megawatt (MW) block, set to be built at CEZ's Dukovany nuclear power plant and enough to cover a tenth of annual consumption, would cost 140-160 billion Czech crowns (\$5.6-\$6.4 billion). Critics, including some CEZ minority shareholders, argue it will run much higher. Financing involving the state would be cheaper than commercial credit and thus also lower the eventual final power price, Havlicek said. A CEZ spokesman said the financing model would be key as CEZ, central Europe's biggest listed utility, looks to avoid burdening financing other activities. He said the price would come below that for Hinkley Point in Britain, which was set at 92.5 pounds (per megawatt-hour in 2012 prices in a contract for difference. Russia's Rosatom has been favoured as a supplier by some, including Czech President Milos Zeman, although the country's security establishment has been against suppliers from Russia and China. Other potential builders are South Korea's KHNP, France's EDF and U.S. group Westinghouse.

<https://www.reuters.com/article/czech-nuclear/update-2-czech-government-takes-step-towards-building-new-nuclear-plant-idUSL5N2CF66H>

Russia

Putin orders cabinet to approve nuclear energy technologies program

TASS News Agency, April 16, 2020

Russian President Vladimir Putin asked the national government to ensure development and approval of the comprehensive program on development of technique, technologies and research in the sphere of nuclear power use in Russia by 2024. The decree of the head of state to that effect was posted on the official web portal of legal information on Thursday. "Russian regulatory legal act governing the procedure for implementation of national (federal) projects (programs), including in terms of financial support" should apply to this program, the decree says.

The government is instructed to ensure identification of tasks during development of this program, whose solution by 2024 is required to form elements of a safe and efficient energy system based on advanced nuclear, thermonuclear, plasma and other technologies, and to roll out advanced technologies in high-tech economic sectors and develop products competitive on domestic and international markets.

<https://tass.com/economy/1145721>

US may be prepping site in Nevada to test nukes, Russian diplomat warns

TASS News Agency, April 16, 2020

The United States may be on the way to bringing its nuclear test site in Nevada on high alert, as many signs attest, Russian Deputy Foreign Minister Sergei Ryabkov told TASS on Thursday. "The United States, as many signs attest, including publications citing organizations engaged in the United States in maintaining their nuclear arsenal in combat readiness, may well be bringing their test site in Nevada on high alert," he said.

<https://tass.com/politics/1145621>

Russian diplomat rejects US accusations of Moscow's violation of nuclear test ban

TASS News Agency, April 16, 2020

Russia did not take any actions violating its obligations on banning nuclear tests, Russian Deputy Foreign Minister Sergei Ryabkov told TASS on Thursday. "As for the reproaches coming from Washington for more than half a year now that we allegedly do not fully comply with our moratorium on nuclear tests, we say once again that we did not take any steps that would include elements of deviation from our obligations stemming from our unilateral moratorium on nuclear testing and from our ratification of the Comprehensive Nuclear-Test-Ban Treaty (CTBT)," he said commenting on a report by the US Department of State on countries' compliance with the agreements in the field of arms control, non-proliferation and disarmament issued on Wednesday.

Moscow urges Washington to stop spreading disinformation about nuclear tests. "We urge the United States to abandon the increasing practice of providing the international community with disinformation about the current developments," he pointed out.

<https://tass.com/politics/1145519>

Russian regulator approves infrastructure work for floating NPP

World Nuclear News, April 17, 2020

Glavgosexpertiza announced on 15 April that it had reviewed the design documentation and the results of engineering surveys for construction of coastal and hydraulic engineering buildings, as well as facilities and equipment needed for the plant's physical protection. Based on the results of this research, the regulator said it had reached a "positive conclusion". "Construction of the FNPP is of particular importance both for the entire Chukotka Autonomous District and directly for Pevek," the regulator said. "It will replace the retiring generating capacities of the Chaun thermal power plant and the Bilibino nuclear power plant, and provide energy for consumers. In addition, the FNPP will become the basis of the energy infrastructure of the Chaun-Bilibino industrial hub, which has the richest reserves of gold, silver, copper and other non-ferrous metals, and will also help the district in reducing its dependence on imported fossil fuels, in curbing the growth of tariffs for electric and thermal energy, and in improving social conditions of the population and the environmental situation in the region," it added.

Glavgosexpertiza's approval means that facilities can now be built on the banks of the Pevek Strait for the "placement, storage and use" of the equipment and property required for the physical protection of the FNPP. These facilities include a stationary dock. The project developer is JSC Russian Concern for the Production of Electric and Thermal Energy at Nuclear Stations, which is part of Rosenergoatom. The general designer is Atomenergo.

<https://www.world-nuclear-news.org/Articles/Russian-regulator-approves-infrastructure-work-for>

Dialogue with parties to nuclear deal continues, says senior Russian diplomat

TASS News Agency, April 22, 2020

The dialogue between Russia and the parties to the Joint Comprehensive Plan of Action (JCPOA) continues, there are no face-to-face contacts, Russian Deputy Foreign Minister Sergei Ryabkov told TASS on Wednesday. "As for face-to-face contacts, there are no [such contacts] now. We continue the working dialogue with all the parties," he said when asked whether there were dates for contacts on Iran's nuclear program.

The future of the Iranian nuclear deal was called into question after the United States' unilateral pullout on May 8, 2018, and Washington's unilateral oil export sanctions imposed on Tehran. Iran argues that all other participants, Europeans in the first place, ignore some of their own obligations in the economic sphere, thus making the deal in its current shape senseless. Due to this, Iran began the process of stage-by-stage suspension of its commitments under the deal regarding uranium enrichment and research activities.

<https://tass.com/politics/1148261>

US envoy hopes arms control contacts with Russia will resume soon

TASS News Agency, April 22, 2020

Contacts between Russia and the United States on issues of arms control will resume soon, US Ambassador to Russia John Sullivan said in a joint interview for TASS a certain other Russian media outlets and agencies. "My expectation is in light of [US] Secretary [of State Mike] Pompeo and [Russian] Foreign Minister [Sergey] Lavrov's conversations on this topic and Marshall Billingslea's appointment [as US special presidential envoy for arms control] that there will be movement and discussions soon," he said answering the question about potential prospects to achieve a prolongation of the New START nuclear arms reduction treaty.

"We also acknowledge Russia's statement that there is no preconditions to the extension," he stressed. "We have no meetings to announce at this time in part due to the COVID-19 situation but the secretary and the foreign minister are discussing these issues and we will continue to engage Russia in the New Start treaty's bilateral consultative commission and other diplomatic channels to work cooperatively to address technical questions and issues related to the ongoing implementation of New START."

<https://tass.com/defense/1148401>

Nuclear deal does not limit Iran's right to explore space, says Russian diplomat

TASS News Agency, April 23, 2020

The nuclear deal does not limit Iran's right to explore space, Russian Foreign Ministry Spokeswoman Maria Zakharova said at a briefing on Thursday, commenting on the launch of Iran's Noor military

satellite. According to her, the United States' call on the UN Security Council to assess if Tehran's move was in line with Resolution 2231 was "a dirty trick." "Neither the Resolution nor the Joint Comprehensive Plan of Action limit Tehran's right and ability to peacefully explore space and develop national space programs," Zakharova pointed out.

"Futile attempts by some Washington analysts to make it seem as if Iran's space rockets are capable of carrying nuclear warheads are a manipulation that will be broken by reality," the Russian diplomat went on to say. "Iran does not have and we hope will never have nuclear weapons. Iran complies with the resolution and refrains from developing and testing ballistic missiles capable of carrying nuclear weapons," she noted.

<https://tass.com/politics/1148921>

Russia to hold about 10 more test launches of Tsirkon hypersonic missile — source

TASS News Agency, April 23, 2020

Russia will carry out about 10 more launches of its newest hypersonic missile, Tsirkon, as part of state trials, a source in Russia's defense industry told TASS. "Prior to the completion of the Tsirkon system's state trials, about ten more launches of the hypersonic missile from two carriers are planned to be carried out," he said. According to the source, the trials will be held in 2020-2021. "Approximately seven or eight launches at ground and naval target are scheduled from the Admiral Gorshkov frigate, while two or three launches will be performed from the Severodvinsk submarine, at least one of them while submerged," the source said.

<https://tass.com/defense/1148571>

Russia prepares for next icebreaker series

World Nuclear News, April 24, 2020

Zvezda Shipbuilding Complex is the sole contractor for this Rosatom-commissioned project. As per the terms of the contract, the vessel is expected to be commissioned in 2027. The contract document was signed remotely yesterday by Mustafa Kashka, general director of Atomflot, which is based in Murmansk, and Sergey Tseluyko, general director of Zvezda, which is in Vladivostok. Kashka said that Leader will be equipped with two state-of-the-art RITM-400 nuclear reactors developed by Rosatom specialists, giving the vessel a total capacity of 120 MW, which will allow it to overcome ice more than 4m thick.

"The commissioning of this nuclear icebreaker will allow us to guarantee safe and regular operations in the eastern region of the Arctic Ocean, year-round navigation in the waters of the Northern Sea Route, and new possibilities for carving out high-latitude commercial routes," he said. Leader, will be built in accordance with technical specifications delineated by the central design bureau Iceberg and will be equipped with RITM-400 nuclear reactors developed by Rosatom subsidiary, JSC Afrikantov OKBM.

<https://www.world-nuclear-news.org/Articles/Russia-prepares-for-next-icebreaker-series>

Radiation levels in Russia normal after Chernobyl wildfire

TASS News Agency, April 24, 2020

The levels of radiation in Russia remain normal in the wake of the wildfire near the Chernobyl nuclear power plant in Ukraine, the Russian Federal Service for Hydrometeorology and Environmental Monitoring informed on Friday.

"Radiation monitoring sites active within the monitoring system of the Russian Federal Service for Hydrometeorology and Environmental Monitoring have not detected any changes in the radiation levels in Russia," the message informs.

<https://tass.com/emergencies/1149395>

About 1.7 million people affected by Chernobyl nuclear disaster in Russia — ministry

TASS News Agency, April 26, 2020

More than 1.7 million people, living in Russia, have been exposed to radiation as a result of the 1986 Chernobyl nuclear disaster, the Russian emergencies ministry's press service told TASS. "Out of the 1.7 million residents of Russia, exposed to radiation as a result of the disaster at the Chernobyl Nuclear Power Plant, 1.5 million are residents of radiation-polluted territories in 14 regions of the country or those who resettled from those areas to other zones. Other 125,000 people took part in the post-disaster relief effort," the ministry said.

Social support to those affected by the Chernobyl disaster is provided on the basis of documents, issued by the Russian Emergencies Ministry. Last year, the ministry issued over 10,000 such documents, including to 9,000 who reside in polluted areas or have left them in the wake of the disaster.

<https://tass.com/russia/1149777>

Fires in Chernobyl exclusion zone engulf around 20,000 hectares

TASS News Agency, April 27, 2020

Fires in the exclusion zone around the Chernobyl nuclear power plant engulfed an area of around 20,000 hectares, Sergei Kalashnik, chief of Ukraine's state agency for the management of the exclusion zone, said on Monday. "The overall area of forests hit by the fire is around 20,000 hectares. We have not yet taken inventory of losses," he said, adding that according to preliminary estimates, about 10,000 hectares of forests were destroyed by fire.

He said that efforts are continued to extinguish two beds of smoldering wood in the exclusion zone, one of them being of about 20 hectares and the other one much smaller. The fire inside the exclusion zone around the Chernobyl nuclear power plant occurred on April 4. It destroyed 12 villages, whose residents had been evacuated after the 1986 disaster and a large forest area. The emergencies service said that by April 15 open fire had been eliminated, but strong wind caused several problem spots the next day. Thus, beds of fire were registered 17 kilometers off the border with Belarus.

<https://tass.com/emergencies/1150173>

Russia's Vepr nuclear sub to return to service in June — source

TASS News Agency, April 28, 2020

Russia Vepr (K-157), a Project 971 Schuka-B class nuclear-powered attack submarine, has completed trials after overhaul and modernization, and will return to service with the Russian Navy in June, a defense industry source told TASS on Tuesday. "The Vepr nuclear sub has fully completed the program of trials. The submarine returned to the Nerpa ship-repair plant for minor fixes. This work will continue for about a month," the source said. "After a short period in the dry dock, it will be handed over to the fleet in early July."

The Zvezdochka shipyard, which incorporates the Nerpa facility, did not comment on the information. Most Project 971 submarines went on combat duty in late 1980s - early 1990s. The Vepr entered service with the Navy in 1995. It is the first upgraded SSN with new weapons. Navy Commander-in-Chief Nikolai Yevmenov earlier said it was likely to become operational in April 2020 after a long break. During the overhaul, the submarine was refitted to carry Kalibr-PL missiles.

<https://tass.com/defense/1150461>

Russia flies nuclear-capable bombers over Baltic Sea in training exercise

Reuters, April 29, 2020

Russia has flown two nuclear-capable Tu-160 strategic bombers over the neutral waters of the Baltic Sea, the Russian Ministry of Defence said on Wednesday, a move that prompted Finland, Denmark, Poland and Sweden to scramble jets to escort them. The ministry said the flight was routine in nature and strictly adhered to international airspace regulations.

Russia carries out similar training flights over the Arctic, Atlantic and Pacific oceans, as well as over the Black and Baltic Seas on a regular basis, a policy some NATO members regard as unhelpful sabre-rattling. The two Tupolev T-160 aircraft, which can carry up to 12 short-range nuclear missiles, were in the air for eight hours, the Russian Defence Ministry said.

<https://www.reuters.com/article/us-russia-defence-bombers/russia-flies-nuclear-capable-bombers-over-baltic-sea-in-training-exercise-idUSKBN22B26U>

Rosatom in talks on mobile datacenters supplies to India

TASS News Agency, April 30, 2020

The Rosatom Group of companies is negotiating deliveries of mobile datacenters to India, Digitalization Director of the group Ekaterina Solntseva said on Wednesday. "We are holding negotiations with India on this topic [supplies of mobile datacenters - TASS] now," Solntseva said. The Group will not curtail the project of constructing backbone datacenters at nuclear power plants and "is now dealing with containerized and mobile datacenters," she added.

<https://tass.com/science/1151589>

Russian icebreaker completes unique tasks during MOSAiC expedition to Arctic

TASS News Agency, April 30, 2020

The Kapitan Dranitsyn icebreaker, which resupplied the MOSAiC international polar expedition, set two records in northern latitudes as a diesel-electric vessel, press service of the Russian marine ports authority, Rosmorport, said.

"The Kapitan Dranitsyn is the first ever diesel-electric icebreaker to get to the Arctic's highest point - 88 degrees and 36 minutes northern latitude - in winter. <...> Another record is the unique refueling at the latitude of 84 degrees and 46 minutes from another icebreaker - the Admiral Makarov," the press service said. The previous record was set in 1934 when the Yermak soviet icebreaker delivered coal for three vessels to a point at 83 degrees 04 minutes northern latitude, the press service said.

<https://tass.com/science/1152101>

Russian envoy blasts US for claiming to be part of Iran nuclear deal

TASS News Agency, April 30, 2020

The United States' attempts to present itself as part of the Iran nuclear deal have no future, Russian Permanent Representative to International Organizations in Vienna Mikhail Ulyanov wrote on Twitter. "The US attempts to present itself as 'JCPOA participant' have no future. It is like common sense mockery. Those who invented this idea gave bad advice to US authorities. Cynical approaches must have their own limits in order not to compromise the national policy to the worst extent," the tweet reads.

US Secretary of State Michael Pompeo said earlier that the United States was determined to prevent Iran from purchasing weapons after an arms embargo expired, insisting that Washington was technically still a member of the Iran nuclear deal despite US President Donald Trump's decision to withdraw from it in 2018.

<https://tass.com/politics/1151789>

Batch of nuclear fuel delivered to Iran's Bushehr nuclear power plant — Russian embassy

TASS News Agency, April 30, 2020

A new batch of nuclear fuel has been delivered to the Bushehr nuclear power plant (NPP) in Iran, the Russian embassy to the Islamic republic said in a Twitter post on Wednesday. "Thanks to efforts of the Atomic Energy Organization of Iran, [Russian nuclear corporation] Rosatom and the Russian Foreign Ministry, a new batch of nuclear fuel was delivered to the Bushehr NPP. It was necessary for further functioning of the reactor," the embassy said.

On April 12, a deputy head of Iran's atomic agency, Mahmoud Jafari, announced that Bushehr's Unit 1 will be temporarily shut down for refueling and technical maintenance in the run-up to the peak season in summer. The Bushehr nuclear power plant was built by Russia in Iran. Rosatom implements the construction project for the second stage of the NPP (the second and third power units) with a total capacity of 2,100 MW.

<https://tass.com/world/1151679>

West Asia

Iran

U.S. pressure on Iran during coronavirus outbreak is 'inhumane': Rouhani

Reuters, April 20, 2020

Iranian President Hassan Rouhani said on Monday that American pressure on Iran in the middle of the coronavirus pandemic was "inhumane", according to a statement on the official presidency website. U.S. President Donald Trump reimposed economic sanctions on Iran in 2018 after withdrawing from a multilateral nuclear deal struck three years earlier. "In these difficult conditions, American pressure on the people of Iran is more inhumane than at any other time and the continuation of it is a barbaric crime against a great people and against all human principles and international regulations," Rouhani said during a phone call with Italian Prime Minister Giuseppe Conte. Rouhani expressed sympathy for the people of Italy, who have also been hit hard by the coronavirus outbreak. Trump says the multilateral deal was not strong enough to ensure that Iran would not be able to develop and build nuclear weapons.

He wants to apply "maximum pressure" on Iran to accept tougher curbs to its nuclear programme, halt its ballistic missile work and end its support for proxy forces in the Middle East. Iran says it will not negotiate unless Washington lifts sanctions. France, Germany and Britain have exported medical goods to Iran in the first transaction conducted under Instex, a trade mechanism set up to barter humanitarian goods and food with Iran in the hope of encouraging it to remain committed to the nuclear deal. But Rouhani said Instex had not been sufficient so far. "The financial mechanism designed by Europe unfortunately has not been able to take a noticeable and effective step and play a role," he said, according to the presidency website. Separately, in a phone call with Kuwaiti Emir Sheikh Sabah al-Ahmad al-Sabah, one of several Sunni-ruled Arab Gulf states that are at odds with Iran, he said that, to achieve security in the region, "there is no other way other than cooperation and friendship between the countries of the region itself".

<https://www.reuters.com/article/us-iran-usa-rouhani/u-s-pressure-on-iran-during-coronavirus-outbreak-is-inhumane-rouhani-idUSKBN2222KL>

Iran says it puts first military satellite into orbit, triggers U.S. condemnation

Parisa Hafezi, Phil Stewart

Reuters, April 22, 2020

Iran said on Wednesday it successfully launched the country's first military satellite into orbit, triggering protests from the United States and stoking already high tensions over Tehran's nuclear and missile programs. Iran's Revolutionary Guards Corps said the satellite "Noor", or "Light", was orbiting 425 km (264 miles) above the earth's surface. The Pentagon declined to confirm whether Noor was in orbit and operational, saying it would take time to make such an assessment. U.S. Secretary of State Mike Pompeo condemned the launch, however. Putting a satellite in space would be a major advance for Iran's military following repeated failed launch attempts in recent months.

<https://www.reuters.com/article/us-iran-satellite/iran-says-it-puts-first-military-satellite-into-orbit-triggers-u-s-condemnation-idUSKCN2240LO>

Iran says it will fare better than others after oil crash amid battered economy

Parisa Hafezi, Davide Barbuscia

Reuters, April 22, 2020

Iran will not suffer as much as other countries from the oil price plunge as it is less reliant on crude exports, its president said on Wednesday, with the state budget depending far less than before on oil revenue due to U.S. sanctions. But as a major crude producer, Iran's economy has been hit hard since 2018 when the United States exited Tehran's nuclear deal with six world powers and reimposed sanctions that have strangled Iran's oil trade and banking sector.

The sanctions have limited Iran's financial options to keep its economy running and most of Iranian revenues from oil sales are locked up in foreign bank accounts. President Hassan Rouhani spoke after oil prices touched historic lows in global markets this week amid a huge supply glut due to the new coronavirus outbreak. "The more countries rely on oil, the greater they suffer. But as our reliance on oil income has decreased, willingly or unwillingly, either by our own will or by the imposition of the enemy, our losses will certainly be less," Rouhani said during a televised meeting.

<https://www.reuters.com/article/us-iran-oil-rouhani/iran-says-it-will-fare-better-than-others-after-oil-crash-amid-battered-economy-idUSKCN2240S1>

East Asia

Japan

Japan's Tepco weighs options over projected tsunami threat to Fukushima plant

Reuters, April 22, 2020

Tokyo Electric Power Co (Tepco) is assessing a government report that highlights the threat of another tsunami overwhelming its wrecked Fukushima nuclear station, the company said. Tepco is

trying to clean up the site of its Fukushima Daiichi plant, hit by a massive earthquake and tsunami in 2011, an effort expected to last decades as it looks to build defences against another disaster. The latest government projection suggests an 11-metre (36-ft) seawall planned by Tepco engineers could be overwhelmed if tsunami waves taller than 20 metres (66 ft) are unleashed by a quake of magnitude 9 or more, broadcaster NHK has said.

“Tepco will examine the latest projections and analyse the impact on the ongoing preventive measures against tsunamis that the company has been taking,” a spokesman told Reuters by telephone. The earthquake that struck off Japan’s east coast in March 2011 had a magnitude of nine, spawning a tsunami that led to the meltdown of three reactors at Fukushima, where Tepco continues to struggle to curb release of radioactive material.

<https://www.reuters.com/article/us-japan-tsunami-projection/japans-tepco-weighs-options-over-projected-tsunami-threat-to-fukushima-plant-idUSKCN2240DG>

Fukushima disaster victims cannot sue GE in U.S. - 1st Circuit

Sebastien Malo

Reuters, April 25, 2020

A federal appeals court on Friday affirmed a lower court ruling that had dismissed a proposed class action against General Electric Co by Japanese homeowners and businesses affected by the 2011 Fukushima nuclear disaster, ruling that Japan is a better forum for the lawsuit. A panel of the 1st U.S. Circuit Court of Appeals said that the plaintiffs, who had sued GE in Boston federal court for negligently designing reactors whose meltdown led to the disaster, could adequately seek remedies in Japan.

<https://www.reuters.com/article/usa-environment-lawsuit/in-brief-fukushima-disaster-victims-cannot-sue-ge-in-u-s-1st-circuit-idUSL2N2CC2JY>

North Korea

North Korea's foreign ministry denies letter sent to Trump: KCNA

Reuters, April 19, 2020

North Korea on Sunday denied a letter was sent to U.S. President Donald Trump, North Korean state news agency KCNA said, citing a Foreign Ministry press chief. The denial comes after Trump told reporters that he recently received a “nice note” from North Korean leader Kim Jong Un. Trump had said on Saturday in Washington: “we’re doing just fine with North Korea.” Speaking of a U.S. media report, KCNA said in the statement, “he could have referred to the personal letters that had been exchanged in the past, we are not sure.” “But there was no letter addressed recently to the U.S. president by the supreme leadership of the DPRK.” Democratic People’s Republic of Korea (DPRK) is North Korea’s official name.

<https://www.reuters.com/article/us-northkorea-usa/north-koreas-foreign-ministry-denies-letter-sent-to-trump-kcna-idUSKBN2210KW>

South Korea

Korea to spend \$264 million on nuclear decommissioning research lab

Korea Times, April 21, 2020

South Korea said Tuesday it will spend 322.3 billion won (US\$264 million) to establish nuclear decommissioning research centers in sync with the country's new energy policy that centers on using more sustainable resources and less nuclear power. Under the plan, South Korea will start the construction of the centers in the second half of 2021 on the border between the southern port cities of Busan and Ulsan, along with a branch in Gyeongju, some 370 kilometers south of Seoul, according to the Ministry of Trade, Industry and Energy. State-run energy firms, including Korea Hydro & Nuclear Power Co., will chip in 193.4 billion won, with the central and regional government spending 128.9 billion won.

Through the research labs, the country plans to redouble efforts to foster the competitiveness of its decommissioning industry and pave the way for local firms to tap overseas markets as well. South Korea earlier announced a new energy blueprint focusing on significantly reducing the country's dependence on nuclear and fossil fuel-based energy and instead utilizing more sustainable resources. In line with the move, South Korea is set to retire 11 out of 24 reactors on its soil by the end of 2030. Under the plan, the proportion of renewable sources in the country's power generation portfolio will jump to 20 percent by 2030, reaching around 30-35 percent in 2040. The vision marks a big change from 2017, when renewable sources were responsible for roughly 7.6 percent of the country's energy use. Coal-fired thermal power accounted for 43 percent of South Korea's power generation in that year, followed by nuclear power with around 27 percent, according to data from the energy ministry.

http://www.koreatimes.co.kr/www/nation/2020/04/113_288219.html

Top nuclear envoys of S. Korea, US assess peninsula situation amid rumors about NK leader's health

Yonhap

Korea Herald, April 28, 2020

The top nuclear envoys of South Korea and the United States exchanged their assessments of the situation on the Korean Peninsula in a phone call, the foreign ministry said, amid speculation about North Korean leader Kim Jong-un's health. The phone talks between Lee Do-hoon and his US counterpart, Stephen Biegun, came as media reports about Kim's weeks-long absence from the public eye spawned rumors about his health conditions despite Seoul's assessment that there was "nothing unusual" in the communist state. "The two sides have shared assessments of the recent developments on the Korean Peninsula and exchanged their opinions on ways to cooperate between the two countries in making substantive progress in the efforts for the complete denuclearization and establishment of lasting peace on the peninsula," the ministry said in a press release. "The South and the US evaluated bilateral communication and consultations on the North Korean nuclear and other issues that have continued at each level, and agreed to continue close cooperation down the road," it added.

A diplomatic source said that both Seoul and Washington shared the assessment that there are no unusual signs regarding Kim's status. The phone call came a day after President Moon Jae-in expressed his desire to chart a path for "realistic and practical" inter-Korean cooperation -- a goal hamstrung by global sanctions on the North. Moon listed a series of areas for cooperation, including coping with the new coronavirus, possible disasters in border regions and climate change, and relinking inter-Korean railways. The South Korean nuclear envoy was believed to have explained to Biegun Moon's vision for cross-border cooperation. Lee and Biegun last held phone talks on April 2

amid worries that the global focus on tackling the COVID-19 pandemic could slow the endeavors to bring Pyongyang back to the negotiation table.

http://www.koreaherald.com/view.php?ud=20200428000615&ACE_SEARCH=1

Misc

Medical isotope supply chain faces challenges from COVID-19

World Nuclear News, April 21, 2020

The production of medical radioisotopes has continued during the COVID-19 pandemic but bottlenecks in transport and distribution could lead to shortages at hospitals, according to an International Atomic Energy Agency (IAEA) survey of the research reactors where the isotopes are produced.

The IAEA survey has shown that most "major actors" continue to produce radioisotopes during the lockdown triggered by the pandemic, as production facilities have been defined as "essential" by governments, the acting head of the IAEA's Research Reactor Operation and Maintenance Section, Ram Sharma, said. Most radioisotope-producing research reactors continue to operate, in line with the relevant IAEA safety standards, after having introduced measures to prevent the effects and spread of coronavirus, including the number of staff on site and social distancing measures, said Amgad Shokr, head of the agency's Research Reactor Safety Section.

<https://www.world-nuclear-news.org/Articles/Medical-isotope-supply-chain-faces-challenges-from>

Fires near Chernobyl pose 'no risk to human health', IAEA says

Reuters, April 24, 2020

Radiation from fires that have torn through forests around Ukraine's defunct Chernobyl nuclear power plant poses "no risk to human health", the U.N. atomic agency said on Friday, based on data provided by Ukraine. The main fire among several blazes was extinguished last week but advanced far into the 30 km exclusion zone around the plant, the site of the world's worst nuclear accident in 1986. Smaller fires are still burning in the exclusion zone, its administration said on Friday evening.

"The recent fires in the Exclusion Zone near the Chernobyl Nuclear Power Plant in Ukraine have not led to any hazardous increase of radioactive particles in the air," the Vienna-based International Atomic Energy Agency (IAEA) said in a statement. The Vienna-based IAEA, which acts as the U.N. nuclear watchdog but also aims to encourage the peaceful use of nuclear energy, said it was basing its assessment on data provided by Ukraine. The IAEA said it found "the increase in levels of radiation measured in the country was very small and posed no risk to human health". There had been "some minor increases in radiation", the IAEA said, adding the State Nuclear Regulatory Inspectorate of Ukraine had found "the concentration of radioactive materials in the air remained below Ukraine's radiation safety norms".

<https://www.reuters.com/article/us-ukraine-chernobyl-fire-iaea/fires-near-chernobyl-pose-no-risk-to-human-health-iaea-says-idUSKCN2262YU>

Trump and Putin issue rare joint statement promoting cooperation

Jonathan Landay

Reuters, April 25, 2020

U.S. President Donald Trump and his Russian counterpart Vladimir Putin issued a rare joint statement on Saturday commemorating a 1945 World War Two link-up of U.S. and Soviet troops on their way to defeat Nazi Germany as an example of how their countries can cooperate. The statement by Trump and Putin comes amid deep strains in U.S.-Russian ties over a raft of issues, from arms control and Russia's intervention in Ukraine and Syria to U.S. charges that Russia has spread disinformation about the novel coronavirus pandemic and interfered in U.S. election campaigns.

The Wall Street Journal reported that the decision to issue the statement sparked debate within the Trump administration, with some officials worried it could undercut stern U.S. messages to Moscow. The joint statement marked the anniversary of the April 25, 1945 meeting on a bridge over the Elbe River in Germany of Soviet soldiers advancing from the east and American troops moving from the West.

<https://www.reuters.com/article/us-usa-russia-jointstatement/trump-and-putin-issue-rare-joint-statement-promoting-cooperation-idUSKCN2270SK>

The Biggest Military Budgets As A Share Of GDP In 2019 [Infographic]

Naill McCarthy

Forbes, April 27, 2020

SIPRI has released new data showing that global military expenditure reached \$1.9 trillion in 2019, the highest (inflation-adjusted) level recorded since 1988. Last year's total was 3.6% higher in real terms than 2018 and 7.2% higher than 2010. The United States remained by far the world's largest spender in 2019 with \$732 billion, nearly as much as the next 10 spenders combined. U.S. military spending grew over the past two years following seven consecutive years of decline, primarily due to increased personnel costs amid higher recruiting along with the modernization of conventional and nuclear weapon inventories. In 2019, military spending accounted for 3.4% of U.S. GDP. China was the world's second-largest military spender in 2019, accounting for 14% of total global expenditure. Beijing spent an estimated \$261 billion on its armed forces last year, a 5.1% increase on 2018 and 85% higher than 2010. According to SIPRI, Chinese military expenditure has grown each year since 1994 and it has closely matched the country's economic growth. Spending as a share of GDP has remained largely unchanged over the past decade at an estimated 1.9%. Saudi Arabia was in third position last year but it has now slipped to fifth, with India and Russia occupying third and fourth place in the spending table respectively.

In 2019, India spent just over \$71 billion on its military, or 2.4% of GDP, while Moscow's expenditure grew 4.5% to \$65 billion or 3.9% of GDP. Even though Saudi Arabia's spending levels fell by 16% between 2018 and 2019, it still pumped close to \$62 billion into its armed forces. That figure is equivalent to 8% of the country's GDP. As interesting as the latest figures are, it will be fascinating to see how they develop in 2020 and whether governments attempt to make cuts to arms spending in order to redirect more funding towards their beleaguered health systems that are struggling to contain the coronavirus pandemic.

<https://www.forbes.com/sites/naillmccarthy/2020/04/27/the-biggest-military-budgets-as-a-share-of-gdp-in-2019-infographic/#638fc4bb37f1>

Exclusive: India, Pakistan nuclear procurement networks larger than thought, study shows

Alasdair Pal

Reuters, April 30, 2020

Hundreds of foreign companies are actively procuring components for India and Pakistan's nuclear programmes, taking advantage of gaps in the global regulation of the industry, according to a report by a U.S.-based research group. Using open-source data, the nonprofit Centre For Advance Defense Studies (C4ADS) report provides one of the most comprehensive overviews of networks supplying the rivals, in a region regarded as one of the world's most dangerous nuclear flashpoints.

"India and Pakistan are taking advantage of gaps in global non-proliferation regimes and export controls to get what they need," said Jack Margolin, a C4ADS analyst and co-author of the report. It is seldom possible to determine whether individual transactions are illegal by using publicly available data, Margolin said, and the report does not suggest that companies mentioned broke national or international laws or regulations.

<https://www.reuters.com/article/us-india-pakistan-nuclear-exclusive/exclusive-india-pakistan-nuclear-procurement-networks-larger-than-thought-study-shows-idUSKBN22C2JW>

Op-ed

India

It's Only A Matter Of Time Before The Next India-Pakistan Nuclear Crisis

Sebastien Roblin

National Interest Blog, April 16, 2020

To avoid further nuclear showdowns, Pakistan must cease sponsoring and hosting terrorist groups in stark violation of international norms. And India must create conditions for governance in Kashmir that enjoys genuine local legitimacy for both Kashmiri Muslims and Hindus. "Tit-for-tat." The expression evokes the petty aggressions of a long-running feud.

It also describes how two states home to one-fifth of the planet's population edged closer to nuclear war in the space of a few days. Two air strikes and a downed jet fighter or two later, India and Pakistan have stepped back from the brink—for now. The fuse of this sequence of events was lit two weeks earlier on February 14, 2019, when Kashmiri local Adil Ahmad Dar rammed his car full explosives into an Indian military bus, killing forty members of India's Central Reserve Police Force.

<https://nationalinterest.org/blog/buzz/its-only-matter-time-next-india-pakistan-nuclear-crisis-144697>

Imran Khan's Nuclear Rhetoric

Malladi Rama Rao

Asian Tribune, April 25, 2020

India and Pakistan are nuclear rivals. Yet both countries have been exchanging a list of their nuclear installations on the first day of every New Year for the past 29 years. This they are doing under a

bilateral arrangement that prohibits them from attacking each other's atomic facilities. Put simply, nuclear war in the sub-continent is not a danger lurking even in the shadows. But Imran Khan has been harping on N-danger for the past seven months, denouncing India's ruling party as a supremacist and its leader Narendra Modi as Hitler reborn. Pakistan's military and civilian leaders have picked up the same refrain and have gone ballistic in their attacks on India as though they have become cockier.

Well there is no denying that India has provoked Pakistani leadership by rolling back the special status of its Kashmir (the decision has no bearing on Pakistan held Kashmir or China held Kashmir), and by offering citizenship to Pakistan's religious minorities turned refugees knocking at its door. The twin acts have provided good fodder to the Pakistani motor mouths. Beyond twitter feed and byte thunder, they find themselves powerless to make India bleed. The time-tested old instrument – terrorism through proxies - has proved ineffective in Modi's Kashmir, going by reports from Ground Zero.

<http://www.asiantribune.com/node/93877>

At the edge of a new nuclear arms race

Rakesh Sood

The Hindu, April 27, 2020

In mid-April, a report issued by the United States State Department on “Adherence to and Compliance with Arms Control, Nonproliferation, and Disarmament Agreements and Commitments (Compliance Report)” raised concerns that China might be conducting nuclear tests with low yields at its Lop Nur test site, in violation of its Comprehensive Nuclear-Test-Ban Treaty (CTBT) undertakings. The U.S. report also claims that Russia has conducted nuclear weapons experiments that produced a nuclear yield and were inconsistent with ‘zero yield’ understanding underlying the CTBT, though it was uncertain about how many such experiments had been conducted.

Russia and China have rejected the U.S.’s claims, but with growing rivalry among major powers the report is a likely harbinger of a new nuclear arms race which would also mark the demise of the CTBT that came into being in 1996 but has failed to enter into force even after a quarter century.

<https://www.thehindu.com/opinion/lead/at-the-edge-of-a-new-nuclear-arms-race/article31439692.ece>

China

Xi: Build 'great space power'

Zhao Lei

China Daily, April 25, 2020

President Xi Jinping extended greetings to elder scientists who participated in the country's first satellite program 50 years ago and said he expected space industry workers to learn from their predecessors' spirit and strive to build the nation into a stronger space power. Xi, also general secretary of the Communist Party of China Central Committee and chairman of the Central Military

Commission, wrote a letter in reply to some distinguished Chinese space scientists who participated in the Dongfanghong 1 mission half a century ago. He said new generations of space industry workers should learn and uphold the spirit of those who took part in the making of the nation's first nuclear weapon, ballistic missile and satellite. A number of decorated space scientists, including Sun Jiadong and Wang Xiji, recently wrote the letter to Xi to express their expectations for China's space sector.

In his reply, Xi encouraged space industry professionals to overcome difficulties and hardships to achieve new heights in space science and technology. "(You should) strive to strengthen and expand our space exploration and make our country a great space power as soon as possible," the president wrote. Xi also wrote that he was in the village of Liangjiahe in Shaanxi province 50 years ago when he heard about the launch of China's first satellite. He told them he was very excited about the great news. He recalled that the scientists' enterprise, diligence and perseverance inspired the whole nation at that time and exemplified the Chinese people's spirit of striving.

<https://www.chinadaily.com.cn/a/202004/25/WS5ea23e86a3105d50a3d1884e.html>

Pakistan

Indian BMD Program: Strategic Response of Pakistan Published 3 weeks ago on April

Saba Hanif

Modern Diplomacy, April 19, 2020

The South Asian region has remained fragile due to the hostile relations of India and Pakistan. The history of conflicts and wars generated a mistrust between the two countries. Owing to their strategic needs, India and Pakistan tested their nuclear devices in May 1998. Soon after the induction of nuclear weapons, India initiated the ballistic missile defence program in 1999. India's indigenous program was divided into two phases; the first phase included Prithvi Air Defense (PAD) exo-atmospheric interceptor missile to cater the aerial threats outside the atmosphere between the altitudes of 50 to 80 km with the speed of Mach 5. Moreover, Advanced Air Defense (AAD) is to counter threats between the altitudes of 15 to 30 km along 'Swordfish' Long Range Tracking Radar (LRTR) developed jointly by India and Israel based on the Israeli Green Pine early warning and fire control radar, this radar was imported by India from Israel in 2001-2002. This two-tiered air defense system is aimed at neutralizing aerial threats at two stages; exo-atmospheric interception or mid-course and endo-atmospheric interception.

The Phase 2 missile defense system will be based on the AD-1 and AD-2 interceptor missile that are currently under development. These interceptor missiles will be hypersonic-having the speed of ballistic missiles with the maneuvering capability of cruise missiles- with the speed of Mach 6-7. Phases 2 missile systems are claimed to match the capability of "Terminal High Altitude Area Defense" commonly known as THAAD, developed by United States. In parallel, the radar to support Phase 2 interception will have 80% indigenous component, DRDO chief VK Saraswat told the press on May 15, 2011. "Only some of the equipment's and consultancy would be provided by Israel".

<https://moderndiplomacy.eu/2020/04/19/indian-bmd-program-strategic-response-of-pakistan/>

USA

Tearing up the Open Skies Treaty Would Be a Mistake for Trump

Daniel R. DePetris

National Interest Blog, April 20, 2020

In approximately ten months, there is a strong possibility that the U.S.-Russia New Strategic Arms Reduction Treaty (New START)—the last bilateral nuclear weapons agreement between the world's two largest nuclear powers—could expire without a replacement or extension. Unfortunately, New START is not the only U.S.-Russia military accord at serious risk.

According to an April 5 report in *The Guardian*, the Trump administration is in the process of withdrawing the United States from the Open Skies Treaty, an arrangement constructed in 1992 that allows all thirty-four of its participants to engage in unarmed surveillance flights over one another's territory in order to increase military-to-military transparency. The news comes more than five months after President Donald Trump reportedly signed a memorandum expressing his intent to withdraw from the twenty-eight-year-old agreement.

<https://nationalinterest.org/blog/skeptics/tearing-open-skies-treaty-would-be-mistake-trump-145952>

How America should give the boot to the cult of Kim Jong Un

Kevin Williamson

New York Post, April 25, 2020

Kim Jong Un's dynasty should die with him. The United States should help see to it that it does. As of this writing, the North Korean despot is rumored to be dead after heart surgery. Other reports claim he has been evacuated to the coast away from Pyongyang. There is scuttlebutt that the North Korean state is making succession plans, with the current ruler's younger sister, Kim Yo Jong, thought to be the closest thing to an heir apparent.

Unless she is a very different kind of Kim, the United States should do what it can to push her aside, including nudging the gentlemen in Beijing to intervene. Kim Jong Un, the so-called supreme leader of North Korea, is a hereditary monarch, the son of dictator Kim Jong Il and the grandson of Kim Il Sung, the founder of the North Korean gulag state. North Korea would be better off without another generation of Kims in charge. So would the United States. North Korea's nuclear-armed government-by-cult is a unique danger in the world, the elimination of which would be a blessing.

<https://nypost.com/2020/04/25/how-america-should-give-the-boot-to-the-cult-of-kim-jong-un/>

Will the Trump Administration Try To Kill the Iran Nuclear Deal Once and For All?

Matthew Petti

National Interest Blog, April 27, 2020

The Trump administration believes that “nations should support extending the UN conventional arms embargo on Iran,” Secretary of State Mike Pompeo announced on Saturday, setting the United States up for a fight with Russia in the United Nations Security Council. The five permanent members of the Security Council agreed in 2015 to lift economic sanctions on Iran as part of a deal to limit the Iranian nuclear program. President Donald Trump denounced the agreement and imposed what his State Department calls “super maximum economic pressure” on Iran in 2018.

The Security Council is supposed to lift its ban on Iran buying or selling conventional weapons in October 2020 as part of the 2015 agreement. Iran's surprise launch of a military satellite last week could be an opportunity for the Trump administration to destroy the last vestiges of the deal.

<https://nationalinterest.org/blog/middle-east-watch/will-trump-administration-try-kill-iran-nuclear-deal-once-and-all-148611>

America's New Sniffer-Plane Would Track Rogue Nuclear Weapons

David Axe

National Interest Blog, April 29, 2020

The U.S. Air Force is getting new reconnaissance planes equipped to detect atomic explosions. Well, the planes themselves aren't exactly new. In fact, they're 1960s-vintage aerial refuelers. But they're more modern than are the Air Force's existing nuke-sniffing recce aircraft. And they could revitalize an important mission as the world races to rearm with new atomic weapons.

The three WC-135Rs, based on the airframes of three former U.S. Air National Guard KC-135R tankers, are slated to replace two WC-135C/Ws that fly from Offutt Air Force Base in Nebraska.

<https://nationalinterest.org/blog/buzz/america%E2%80%99s-new-sniffer-plane-would-track-rogue-nuclear-weapons-149196>

Russia

Meet Russia's Underwater Hypersonic Cruise Missiles

Caleb Larson

National Interest Blog, April 17, 2020

Russia is testing hypersonic cruise missiles—and launching them underwater from submarines. Russia is planning to launch its hypersonic Zircon anti-ship missile from underwater at some point this year, though the launch date seems to have been pushed back at least once.

The Russian state-owned Tass news agency quoted a Russian defense industry source as saying that “As part of the continued state trials of the Tsirkon [or Zircon] shipborne missile system, the hypersonic missile's firings are planned from the submerged position from the submarine Severodvinsk.”

<https://nationalinterest.org/blog/buzz/meet-russia%E2%80%99s-underwater-hypersonic-cruise-missiles-145322>

Russia–U.S.: No Reset, Just Guardrails

Dmitry Trenin

The Moscow Times, April 29, 2020

The longer-term consequences of the coronavirus will include the further intensification of U.S.-Chinese rivalry, and the emerging Sino-American bipolarity. Russia's top priority should be to carefully maintain equilibrium—though not equidistance—between the United States and China. For Moscow, the global crisis provoked by the new coronavirus pandemic has provided a rare opportunity to try to reengage Washington. This is consistent with a historical pattern in which Russia tries to use a common threat to reset its relationship with the United States and look for areas of cooperation based on mutual interests. Traditionally, the U.S.-Russian relationship has always been top-heavy, with the personal connection between the two countries' leaders playing a crucial role. This time is no different.

Hardly anyone in the Russian leadership expects a fundamental turnaround in Russian-American relations in the foreseeable future. The outlook is bleak: the current confrontation between the two countries is labeled systemic, and U.S. sanctions on Russia are deemed to be eternal. The Moscow-Washington rivalry, as asymmetric as it is, is seen as linked to the power redistribution processes changing the world order, and each country's position and role within that order. However, tactical opportunities for even very limited engagement are not to be missed.

<https://www.themoscowtimes.com/2020/04/29/russiaus-no-reset-just-guardrails-a70143>

East Asia

North Korea

North Korea Continues to Flout Trump, Advance Nuclear Ambitions

Colum Lynch

Foreign Policy, April 20, 2020

North Korea continues to advance its nuclear weapons and ballistic missile programs, illicitly import fuel and other prohibited items, and stock up on luxury goods in defiance of United Nations sanctions, underscoring the limits of U.S. President Donald Trump's high-profile diplomatic campaign, according to a report by a U.N. panel of experts on sanctions against North Korea. North Korea "did not halt its illicit nuclear and ballistic missile programmes, which it continued to enhance, in violation of Security Council resolutions," according to the U.N. report, which tracks developments in 2019 and is expected to be made public in the coming days. "It continued maintenance and construction of nuclear facilities, though it declared no nuclear tests and carried out no intercontinental ballistic missile launches."

<https://foreignpolicy.com/2020/04/20/north-korea-trump-advance-nuclear-ambitions/>

COVID-19 and N. Korea's nuclear weapons: averting catastrophe

Mely Caballero-Anthony

Korea Times, April 22, 2020

Four months after its outbreak, the COVID-19 pandemic has infected more than 2.5 million people and already killed over 177,000 globally. The new coronavirus has been described as an "once in a lifetime" health threat of global proportions. Against apocalyptic scenarios of millions more deaths to come and grim socioeconomic consequences, scientists from many parts of the world have been in a feverish race to find a vaccine to stop the virus and win the battle against this extraordinary threat to humanity. Paradoxically, there is another race that has been going on for the last eight decades — the

nuclear arms race. But unlike the race for a vaccine whose success is extremely consequential to the security and well-being of the 7.8 billion people on this planet, the nuclear arms race is exclusive to competing great and major powers.

If there is anything that the COVID crisis is teaching us about security is that health security is critical to national security. It would indeed do well for the North Korean regime to heed the call of U.N. Secretary-General Antonio Guterres who made the urgent appeal to the international community to "end the sickness of war and [instead] fight the disease that is ravaging our world ... [the] time to put armed conflict on lockdown and focus together on the true fight of our lives." To this end, the state of the global health crisis facing world today presents a unique opportunity to put forth a persuasive argument to Kim Jong-un to rethink its priorities, and to more effort in testing for COVID-19 instead of testing nuclear missiles. This unprecedented health crisis should remind Kim that the rhetoric of "people's struggle" should in fact be the struggle to combat deadly pandemics from viruses that respects no borders.

http://www.koreatimes.co.kr/www/opinion/2020/04/137_288289.html

Satellite images of luxury boats further suggest North Korea's Kim at favoured villa: experts

Josh Smith

Reuters, April 29, 2020

Satellite imagery showing recent movements of luxury boats often used by North Korean leader Kim Jong Un and his entourage near Wonsan provide further indications he has been at the coastal resort, according to experts who monitor the reclusive regime. Speculation about Kim's health and location erupted after his unprecedented absence from April 15 celebrations to mark the birthday of his late grandfather and North Korea's founder, Kim Il Sung. North Korea-monitoring website NK PRO reported commercial satellite imagery showed boats often used by Kim had made movements in patterns that suggested he or his entourage may be in the Wonsan area. That followed a report last week by a U.S.-based North Korea monitoring project, 38 North, which reported satellite images showed what was believed to be Kim's personal train was parked at a station reserved for his use at the villa in Wonsan.

Officials in South Korea and the United States say it is plausible Kim may be staying there, possibly to avoid exposure to the new coronavirus, and have expressed scepticism of media reports he had some kind of serious illness. They caution, however, that Kim's health and location are closely guarded secrets and reliable information is difficult to obtain in North Korea. The last time official media in North Korea reported on Kim's whereabouts was when he presided over a meeting on April 11, but there have been near-daily reports of him sending letters and diplomatic messages.

<https://www.reuters.com/article/us-northkorea-kim-wonsan/satellite-images-of-luxury-boats-further-suggest-north-koreas-kim-at-favoured-villa-experts-idUSKCN22B0W7>

South Korea

Hollow NK projects

Korea Herald, April 30, 2020

When South Korean President Moon Jae-in met with North Korean leader Kim Jong-un and held hands with him in Panmunjom two years ago, peace appeared to be drawing closer to the Korean Peninsula. They vowed to make the peninsula nuclear-free, declare the end of the Korean War before the end of the year, stop hostile activities against each other, establish a joint liaison office, hold family reunions and reconnect railways and roads. But the declaration faded in meaning.

The North has since kept upgrading its nuclear weapon programs. Rather than stopping hostile activities, it has often tested missiles. The liaison office has been effectively closed. Family reunion events and railway and road reconnection projects have been suspended. Pyongyang avoided recognizing Seoul as its dialogue and cooperation partner. Rather, it has often ridiculed the South and Moon. Little progress has been made in denuclearizing the North, which is the key goal of the declaration. The South Korean government, on the other hand, suspended military drills and set a no-fly zone for military surveillance near the border to abide by the Sept. 19 military agreement that bans hostile activities to each other. “The COVID-19 crisis could be a new opportunity for inter-Korean cooperation,” Moon said Monday. “At present, it is the most urgent and necessary cooperation task.” He vowed to seek the most “realistic and realizable” way to further inter-Korean cooperation.

http://www.koreaherald.com/view.php?ud=20200429000603&ACE_SEARCH=1

Think Tanks

Nuclear safety: Why India relies on Cesium-137

Rajeswari Pillai Rajagopalan

ORF, April 20, 2020

Much of the international nuclear establishment has moved away from Cesium-137 because of the dangers associated with this radiological source, especially its potential theft and use by terrorists. But India’s nuclear establishment has bucked the trend and is instead deepening its dependence on Cesium-137. However, India’s choice is not as surprising as might seem at first glance: there are very good reasons for it.

First, some context. There has been a global effort to find an alternate technology to highly radiological sources in an effort to strengthen security of radiological materials. Nuclear and radiological materials falling into terrorist hands or those of criminal gangs has remained a serious concern especially since the 9/11 terrorist attacks on the United States. The US Energy Policy Act of 2005 created an Interagency Task Force on Radiation Source Protection and Security to undertake this task. The Task Force has produced four reports, containing its evaluation and recommendations to the President and Congress, on the level and type of threats that emanates from potential terrorists. The Task Force has looked at a range of threats including theft, sabotage, or use of a radioactive source in an RDD or RED. The last report of the Task Force came out in October 2018. The report of the Task Force in 2014 and 2018 has reported that though “the viability of alternative technologies for some applications has improved significantly, there are still limitations to the widespread implementation of most applications.” The US Department of Homeland Security in a September 2019 report stated that there are “significantly increased concerns related to the security of sealed sources and their potential use in a radiological dispersion device (RDD), which disperses radioactive material over a large area, or a radiation exposure device (RED), which could be hidden in a public area to expose people to radiation.” Since concerns meant that there have been consistent efforts within the US and around the world to find alternatives for some or all the functions in sectors that

are currently using radiation sources. This is a challenge faced by a number of countries including India. The limitations in the case of India include economic feasibility and availability of alternative technologies.

<https://www.orfonline.org/expert-speak/nuclear-safety-why-india-relies-cesium-137-64881/>

Nuclear games at Lop Nur

Harsh V and Pantkartik Bommakanti

ORF, April 20, 2020

Last week, reports emerged that China has been conducting sub-critical or zero-yield nuclear tests at its Lop Nur site in Xinjiang. A US State Department report made the claims, raising concerns that Beijing may not be adhering to its promise of complying with the ban on zero-yield nuclear-weapons testing. People's Republic of China (PRC) leaders have denied the reports, which should hardly come as a surprise. Beyond the distractions resulting from the COVID-19 pandemic that tend to conceal any incidence of testing, the reliability of a state's nuclear arsenal is the principal reason why a nuclear weapons state might conduct sub-critical testing. The volume of data derived from "hot" tests conducted in the range of 10-200 tonnes is crucial in this regard. In 1995, as the Comprehensive Test Ban Treaty (CTBT) negotiations were underway at the Conference on Disarmament (CD), there was resistance from France and the Russian Federation, along with the PRC who sought to have provisions introduced to pursue testing in the 10-200 tonne range. Preserving the opportunity for further testing within this range has been attractive to any existing or potential nuclear weapons state, and will continue to be so.

Such tests would generate more data, thereby enhancing the possibilities for computer simulation and sub-critical or zero-yield tests. To be sure, no such terms were retained when the CTBT was adopted. However, sub-critical testing is permitted under the provisions of the CTBT, as it is only a conventional explosion and does not require an atomic detonation or the release of fissionable energy. All the designated Nuclear Weapons States (NWS) under the Nuclear Non-Proliferation Treaty (NPT) are signatories to the CTBT, including the PRC. The latter, however, along with the US, have yet to ratify the CTBT; consequently, the CTBT has yet to come in force.

<https://www.orfonline.org/expert-speak/nuclear-games-lop-nur-64901/>

Why are US-Russia relations so challenging?

Angela Stent

Brookings, April 27, 2020

The United States' relationship with Russia is today the worst that it has been since 1985. Moscow's interference in the 2016 U.S. presidential election and what appears to be its continuing attempts to affect the 2020 election campaign have made Russia a toxic domestic issue in a way that it has not been since the 1950s. Its annexation of Crimea and launch of an ongoing war in southeastern Ukraine, plus its support for Syria's Bashar al-Assad in his brutal civil war, and for Venezuela's Nicolas Maduro have raised tensions with the United States. President Trump came into office

determined to improve ties with Russia. But the rest of the executive branch and the U.S. Congress have pursued tough policies toward Russia, imposing rafts of sanctions and expelling diplomats. The U.S. National Security Strategy declares Russia and China the two top threats to U.S. national security. At the best of times, U.S.-Russia ties are a mixture of cooperation and competition, but today they are largely adversarial.

Yet, as the world's two nuclear superpowers, Russia and the United States bear a unique responsibility to keep the peace and discourage the proliferation of nuclear, biological, and chemical weapons around the globe. Moreover, there are global challenges such as terrorism, climate change, governing the Arctic, and dealing with the COVID-19 pandemic that necessitate working together. The challenge is to find an acceptable balance between cooperation and competition and to compartmentalize the relationship in a more effective way than at present.

<https://www.brookings.edu/policy2020/votervital/why-are-us-russia-relations-so-challenging/>

How many intensive care beds will a nuclear weapon explosion require?

Tom Sauer and Ramesh Thakur

Bulletin of Atomic Scientists, April 28, 2020

A novel coronavirus emerged in Wuhan, China late last year, hopping in one way or another from other animals to humans. Initially the rest of the world thought this outbreak was a local problem and then was shocked at the brutality of the lockdown that the Chinese authorities clamped on Wuhan to quarantine the infection cluster. Despite China's efforts at containment, soon the virus rode the highways and byways of globalization to quickly circle the world. Other countries realized their hospital systems could be overwhelmed unless they drastically slowed the surge of new infections. No country had the number of beds in its intensive care units (ICUs) to manage patient loads under worst-case scenarios of letting this new coronavirus spread through the community to acquire herd immunity.

To those of us whose primary professional interest lies in nuclear weapons and the dangers they pose, the coronavirus pandemic is a striking validation of the Humanitarian Initiative, which took off 10 years ago with three core propositions: First, no country individually has the capacity to cope with the humanitarian consequences of a nuclear war, and the international system doesn't have it collectively, either. Second, it is therefore in the interests of all humanity that nuclear weapons never be used again, under any circumstances. And finally: The only guarantee of non-use is the complete elimination of nuclear weapons. These precepts were the powerful impetus behind the Nuclear Weapons Ban Treaty that 122 states at the United Nations adopted in July 2017.

<https://thebulletin.org/2020/04/how-many-intensive-care-beds-will-a-nuclear-weapon-explosion-require/>

Reports and interviews

By any calculus, India qualifies for UNSC permanent seat: Syed Akbaruddin

Sriram Lakshman

The Hindu, April 29, 2020

India's Permanent Representative at the United Nations Syed Akbaruddin retires on April 30. In an interview to The Hindu, he spoke on a range of topics related to India at the U.N., from the country's bid for permanent membership at the Security Council and Kashmir to the pandemic. Edited excerpts:

India is due for election to the temporary membership of the U.N. Security Council later this year, for the 2021-22 period. What do you think will be the priorities for India to work on?

India in many ways is a sui generis country. It's a country of a billion-plus, it's a country which is a democracy, perhaps the only example in history of a billion-plus people working together in a democratic framework. We will bring to it those values and strengths of being able to work cohesively among disparate entities. That's our USP, we try and work out solutions. One of the biggest issues that will confront all multilateral organisations and certainly the security council will be issues which are beyond borders. Issues of ... the global commons, whether it is in cases of public health as we are now seeing in the current pandemic, but other issues, for example, cyber [issues]. There are no regulatory mechanisms or no rules on that, and that's another.

<https://www.thehindu.com/opinion/interview/by-any-calculus-india-qualifies-for-unsc-permanent-seat-syed-akbaruddin/article31465932.ece>

Contribute Articles

Indian Pugwash Society welcomes research articles from students, researchers and faculties on Space, Missile, nuclear technology, WMD proliferation, arms control, disarmament, export controls and other related issues. Articles should be crisply written and should address contemporary debates in the policy arena. Manuscripts submitted for the consideration of the Indian Pugwash Society should be original contributions and should not have been submitted for consideration anywhere else. For further assistance, please contact us at: indianpugwashsociety@gmail.com

The Indian Pugwash Society aims to promote the study, discussion, and knowledge of and to stimulate general interest in, and to diffuse knowledge in regards to problems relating on WMD proliferation, arms control, disarmament, space security, export controls, nuclear technology and other related issues. This newsletter is part of the project "Emerging Nuclear Order in Asia: Implications for India" sanctioned to us by Department of Atomic Energy-Board of Research in Nuclear Sciences (DAE-BRNS).

Disclaimer:

Data included in this newsletter is only for educational purpose and wider dissemination. All liabilities and rights belong to respective writers & authors.

Indian Pugwash Society
No.1, Development Enclave,
Rao Tula Ram Marg, Near USI, Delhi-110010
Tel. No (91-11) 2671-7983
Fax No. (91-11)2615-4192
Email: indianpugwashsociety@gmail.com