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A. India

DRDO organises workshop to increase synergy with Academia in Defence R&D

PIB, November 13, 2019

Defence Research and Development Organisation (DRDO) organised a workshop titled 'DRDO-Academia Interaction for Achieving Leadership in Future Technologies' here today. The workshop was aimed to leverage the academic expertise available in the country and increase the synergy with Academia. Various ideas were discussed to explore new horizons of collaboration so that research directly contributes towards defence products and applications. The avenues where the researchers and technology experts available in the country can be engaged strategically for contribution to the design and development of advanced defence products were also discussed.

<https://pib.gov.in/PressReleseDetail.aspx?PRID=1591435>

Kudankulam Nuclear Power Plant in Tamil Nadu Safe, Says NPCIL After Malware Attack

News 18, November 1, 2019

The NPCIL on Friday said its reactors at the Kudankulam Nuclear Power Plant in Tamil Nadu are "safe". The Nuclear Power Corporation of India (NPCIL), a public sector undertaking on Wednesday admitted to a malware attack on one of the computers in Kudankulam plant, a day after the plant authorities had asserted that cyber-attacks on its systems are not possible.

"Security, be it physical or cyber, is one area which we should not discuss the details. But be rest assured the reactors are safe and are being monitored by the experts," NPCIL Chairman and Managing Director SK Sharma told PTI on the sidelines of an event here when asked about the safety of the reactors.

<https://www.news18.com/news/india/kudankulam-nuclear-power-plant-in-tamil-nadu-safe-says-npcil-after-malware-attack-2370549.html>

Four nuclear capable missiles lined up for test this month

Hemant Kumar Rout, The New Indian Express, November 4, 2019

India has lined up four indigenously developed nuclear-capable missiles for tests this month. The missions assume significance as the missiles to be flight tested from different platforms are capable of reaching all major cities of Pakistan.

The weapon systems slated for tests are submarine-launched long-range ballistic missile K-4, supersonic cruise missile BrahMos, intermediate-range ballistic missile Agni-II and short range ballistic missile Prithvi. BrahMos Aerospace will test fire two rounds of the cruise system to further demonstrate the weapon's ability for precision hit. With the two tests - one from land-based platform and another from fighter aircraft Sukhoi-30 MKI - BrahMos will be put on trial for the seventh time this year.

<https://www.newindianexpress.com/states/odisha/2019/nov/04/four-nuclear-capable-missiles-lined-up-for-test-this-month-2056717.html>

India to test-fire 3,500 km range K-4 nuclear missile from underwater platform Friday

The New Indian Express, November 6, 2019

The missile system is being developed by the DRDO for the Arihant class nuclear submarines which are being built by India. These submarines would be the mainstay of India's nuclear triad. To further strengthen its capabilities of hitting enemy targets from submarines, India is planning to test-fire the 3,500-kilometre strike-range K-4 nuclear missile from an underwater platform off the coast of Andhra Pradesh on Friday.

The missile system is being developed by the DRDO for the Arihant class nuclear submarines which are being built by India. These submarines would be the mainstay of India's nuclear triad.

<https://www.newindianexpress.com/nation/2019/nov/06/india-to-test-fire-3500-km-range-k-4-nuclear-missile-from-underwater-platform-friday-2057895.html>

Not only Kudankulam, ISRO, too, was alerted of cyber security breach

Jay Mazoomdaar, *Indian Express*, November 6, 2019

Not just the Kudankulam plant of the Nuclear Power Corporation of India Limited (NPCIL), the Indian Space Research Organisation (ISRO), too, was alerted of a possible breach by suspected malware. On September 3, the National Cyber Coordination Centre, set up under a classified project “to generate necessary situational awareness of existing and potential cyber security threats and enable timely information sharing,” received intelligence from a US-based cybersecurity company that a “threat actor” had breached master “domain controllers” at the Kudankulam plant and at ISRO with a malware, later identified as a “Dtrack.” Sources said both NPCIL and ISRO were alerted on September 4.

<https://indianexpress.com/article/india/not-only-kudankulam-isro-too-was-alerted-of-cyber-security-breach-6105184/>

North Korean Hackers May have Targeted ISRO During Moon Mission: Report

NDTV, November 8, 2019

At the time the Indian Space Research Organisation (ISRO) was trying to land Chandrayaan 2 spacecraft’s Vikram lander on the Moon, suspected North Korean hackers might have attacked the space agency, the Daily Mail reported on Friday. The ISRO was one of five government agencies to come under their attack, said the report, adding that officials denied that the attack impacted the Moon mission. Employees are feared to have accidentally installed malware on to their systems after opening phishing emails from North Korean spammers.

According to a report in the Financial Times, ISRO was warned of the cyber attack during the Chandrayaan-2 moon mission in September. Experts believe the attack was conducted using DTrack, a type of malware linked to the Lazarus group which is

believed by the US authorities to be controlled by the North Korean government.

<https://www.ndtv.com/india-news/north-korean-hackers-may-have-targeted-isro-during-moon-mission-report-2129587>

In Tamil Nadu, Rooftop Solar Has the Potential to Outdo Nuclear Power

Poonkuzhali, *The Wire*, November 8, 2019

In September, India and Russia announced joint plans to set up 20 nuclear power units in the former over the next two decades. India’s nuclear establishment believes that the use of nuclear energy can only be good for the country’s industrial development and prosperity. However, nuclear isn’t the only mode of power generation that can make such a claim. The Kalpakkam complex, commissioned by 1986, has four operating units. Two of them are of 235 MW capacity and two of 600 MW capacity. The complex’s gross generation in 2017-2018 was 1,194 MU (at 64% availability; in 2015-2016, with an availability of 97%, it generated 1,861 MU).

The Kudankulam power plant is the single largest nuclear power station in India. It has two operational units of 932 MW (net) each. In 2018-2019, with an availability of 33%, it generated 2,797 MU.

<https://thewire.in/energy/tamil-nadu-rooftop-solar-nuclear-power>

Rosatom plans India’s nuclear expansion

Energy Reporters, November 9, 2019

Russia’s state-run nuclear agency, Rosatom, is working in India to develop medium-sized nuclear reactors producing 50 to 100 megawatts, according to Nikita Mazein, the Russian corporation’s overseas chief.

Rosatom’s representative in India said that besides coal, only nuclear power could provide the base-load energy required to curb carbon-dioxide emissions. It did not

explain how using coal, the most polluting fossil fuel, could reduce pollution.

At the Nuclear Energy Conclave, organised by the Indian Energy Forum, Mazein said: "Rosatom is developing small- and medium-sized solutions based on a light-water reactor of Russian design. In Russia, we have commissioned and will be operating the first floating nuclear power plant this year.

<https://www.energy-reporters.com/transmission/rosatom-plans-indias-nuclear-expansion/>

No need to fear nuclear energy: Atomic Energy Commission Chairman

The Hindu, November 10, 2019

There is no need to fear nuclear science or nuclear energy as in medicine it is already being used, said K.N. Vyas, chairman of Atomic Energy Commission, in Chennai on Sunday.

"Bhaba Atomic Research Centre develops a large number of radiopharmaceuticals which are injected into the body to diagnose ailments. If a person can take radiopharmaceuticals as an injection then there is no reason why one should be afraid of a nuclear reactor which is 50 to 100 km away," he contended.

Mr. Vyas, who was conferred the honorary Doctor of Science degree at the 15th Convocation of SRM Institute of Science and Technology, in his acceptance speech, suggested that students gain expertise in at least two fields as it would help them to move from one field to an unrelated field in an era when work had become multidisciplinary. "It will give you better satisfaction of doing work," he said.

<https://www.thehindu.com/news/cities/chennai/no-need-to-fear-nuclear-energy-atomic-energy-commission-chairman/article29937043.ece>

ISRO Venus Mission: Indian Space Agency Sets Eyes On Planet Closest To Earth

Athena Chan, International Business Times, November 11, 2019

Following the Chandrayaan-2 moon mission that launched just last summer, the

Indian Space Research Organisation (ISRO) is already setting its eyes on a 2023 mission to Venus. With Venus being considered as the Earth's "twin sister" because of its many similarities, the mission aims to fill the gaps in the basic understanding of the planet.

Scientists and engineers at ISRO have already submitted plans for a 2023 Venus mission to the Indian national government. Evidently, the mission is set to focus on studying and mapping Venus's surface and subsurface. For this, the Venus orbiter is expected to carry 16 instruments for the mission, including ones that would map the planet's surface, monitor clouds, identify lightning strikes, and study the planet's ionosphere and stratosphere.

Apart from the planned Venus mission, ISRO is, so far, working on several other interplanetary missions for the coming decade. As soon as April 2020, ISRO's Aditya-L1 mission is set to study the sun's corona and atmosphere in hopes of answering some significant solar physics questions. Later in the year, ISRO is also scheduled to launch Chandrayaan-3 bound for the moon.

<https://www.ibtimes.com/isro-venus-mission-indian-space-agency-sets-eyes-planet-closest-earth-2863586>

India Tells Russia That Kudankulam Nuclear Power Plant is Safe: Diplomat

News 18, November 12, 2019

In the wake of reports of a cyber-attack on the Kudankulam nuclear power plant, Indian authorities have apprised Russia that necessary steps have been taken to prevent similar incidents in future, a senior Russian diplomat said on Tuesday.

Deputy Chief of the Russian Embassy Roman Babushkin said Nuclear Power Corporation of India Limited has informed Russian authorities that the plant is safe and additional steps have been taken to enhance its security further. "The Russian authorities are working with Indian

agencies to stop any further attacks," he said.

<https://www.news18.com/news/india/india-tells-russia-that-kudankulam-nuclear-power-plant-is-safe-diplomat-2384343.html>

Centre may create single agency for cyber defence

Sudhi Ranjan Sen, Hindustan Times, November 12, 2019

India may soon have a single authority or agency responsible for the entire spectrum of defensive cyber operations in the country, a senior official in a security agency said on condition of anonymity. The move comes even as India faces renewed threat of cyber-attacks and cyber terrorism. For instance, the breach in a part of a network of India's largest civil nuclear facility, the Kudankulam Nuclear Power Plant (KNPP) in Tamil Nadu, in September. The attack did not compromise critical systems, but gained access to the plant's administrative network.

The Ministry of Electronics and Information Technology, the Ministry of Home Affairs, the Ministry of Defence, the National Security Council Secretariat (NSC), and the National Technical Research Organization (NTRO), and several other departments and agencies have their own cyber units that look at various aspect of cybersecurity.

<https://www.hindustantimes.com/india-news/centre-may-create-single-agency-for-cyber-defence/story-pD3QUcNvU2a9THFCF01SMO.html>

ISRO Will Embark on Chandrayaan 3 by November 2020 for Another Landing Attempt

The Wire, November 14, 2019

The Indian Space Research Organisation has resolved to attempt another autonomous soft-landing on the Moon by November 2020, Times of India reported today. Its previous attempt of this feat, as part of the Chandrayaan 2 mission, went awry on September 7 after the lander (carrying the rover inside) crashed on the Moon's surface instead of descending slowly, and the surface mission was declared a failure.

For Chandrayaan 3, as the second attempt will be called, ISRO scientists will design and build a new lander and rover. Chandrayaan 2 also included an orbiter that underwent a successful orbital injection manoeuvre and is in orbit around the Moon now, so Chandrayaan 3 will not have an orbiter of its own. However, since the orbiter carried the engine and the fuel that carried the instruments from orbit around Earth to closer to the Moon in the previous mission, the new one will include an additional "detachable module", to use Times of India's words, with the propulsion systems.

<https://thewire.in/space/isro-chandrayaan-3-lunar-lander-rover-gaganyaan>

India all set to put a human in space in its 75th year of Independence, former ISRO Chairman

Srishti Choudhary, Livemint, November 14, 2019

With two years left for India to embark on its historic human spaceflight mission, Gaganyaan, former Indian Space Research Organization (ISRO) Chairman, Dr K Kasturirangan said the agency is making progress and is all set to put a human into space in country's 75th year of independence.

"The scientists are working day-and night, setting up facilities, creating the manpower and tying up with agencies abroad. The 'Life support system' is extremely new for ISRO and the scale and complexity of the mission is huge. It is not a small challenge thrown by the present government to space scientists, but they have the will to succeed," said the noted astrophysicist on the sidelines of annual convocation of TERI School of Advanced Sciences, here in New Delhi.

<https://www.livemint.com/news/india/india-all-set-to-put-a-human-in-space-in-its-75th-year-of-independence-former-isro-chairman-11573739026110.html>

Pakistan is 'DNA of terrorism', preaches nuclear war: India at UNESCO meet

Times Now, November 15, 2019

India on Thursday gave a befitting reply to Pakistan over its false claims and propaganda on Jammu and Kashmir, saying the cash-strapped nation itself is "a DNA of terrorism".

"Pakistan's neurotic behaviour has resulted in its decline to a nearly failed state with its weak economy, radicalised society and deep-rooted DNA of terrorism," Ananya Agarwal, who led the Indian delegation to the UNESCO General Conference being held in Paris. "We condemn Pakistan's disappointing misuse of UNESCO to spew venom against India and politicise it," she added.

<https://www.timesnownews.com/india/article/pakistan-is-dna-of-terrorism-preaches-nuclear-war-india-at-unesco-meet/515555>

Air Force chief wants to draw youth to aerospace medicine

The Hindu, November 15, 2019

The chief of the Indian Air Force has a new concern – lack of interest among doctors to pursue aviation medicine. At the 57th conference of the Indian Society of Aerospace Medicine (ISAM), IAF chief Air Chief Marshal R.K.S. Bhadauria asked: "How come youngsters are not taking this up as a preferred field?"

Praising the aviation medicine fraternity as a principal contributor in keeping pilots fit and maintaining the combat capability of the Air Force, he said the area has not attracted young doctors because it does not offer good career growth or opportunities for super-specialisation.

<https://www.thehindu.com/news/cities/bangalore/air-force-chief-wants-to-draw-youth-to-aerospace-medicine/article29976104.ece>

Seven astronauts finish screening in Russia for India's first manned space mission

Jagruthi Maddela, The Hans India, November 15, 2019

A total of seven men have completed screening in Russia for India's first manned space mission - Gaganyaan. According to reports, the final batch of potential astronauts are scheduled to leave for Russia this week. India picked 12 test pilots who cleared level-1 screening for the Gaganyaan programme in September. The mission is scheduled for 2022. Out of the twelve, 2-3 astronauts will be shortlisted.

All the twelve have not been sent together, due to accommodation issues in Russia. They have been sent in batches of four and three. The Institute of Aerospace Medicine (IAM), selected the 12 astronauts out of 60 applicants. The IAM completed one round of screening. The Glavkosmos which is a subsidiary of Russian space agency Roscosmos State Corporation is in the process of screening the screened astronauts.

<https://www.thehansindia.com/news/national/seven-astronauts-finish-screening-in-russia-for-indias-first-manned-space-mission-581396>

B. China

China criticizes US decision to deploy missiles in Asia-Pacific

Zhang Zhihao, China Daily, November 1, 2019

Land-based medium range weapons threaten security of region, experts warn. The Chinese military will not sit idly and allow the United States to deploy land-based medium range missiles in Asia-Pacific countries, and the Ministry of National Defense urged relevant nations to act cautiously and responsively to avoid unwise actions, its spokesman said on Thursday.

In August, US Defense Secretary Mark Esper said the US plans to deploy land-based, medium-range weapons in the

Asia-Pacific region in the future. In the same month, the US officially pulled out of the Intermediate-range Nuclear Forces Treaty, a landmark arms control deal signed in 1987 between the US and the former Soviet Union to eliminate the two sides' land-based ballistic missiles with ranges between 500 kilometers and 5,500 km.

http://www.chinadaily.com.cn/cndy/2019-11/01/content_37519970.htm

China says U.S. should not 'gesticulate' about South China Sea issue

Reuters, November 4, 2019

China's foreign ministry said on Monday that the United States should not "gesticulate" about the South China Sea issue. Ministry spokesman Geng Shuang made the comments at a daily news briefing in Beijing. A U.S. envoy denounced Chinese "intimidation" in the South China Sea at a meeting of Southeast Asian leaders on Monday and invited them to a special summit in Washington on behalf of President Donald Trump.

<https://www.reuters.com/article/us-asean-summit-china/china-says-u-s-should-not-gesticulate-about-south-china-sea-issue-idUSKBN1XE0LW>

Chang'e-4 probe enters 11th 'sleeping' night

China Daily, November 4, 2019

The lander and the rover of the Chang'e-4 probe have entered the 11th dormancy period on the far side of the moon early Monday, according to the Lunar Exploration and Space Program Center of the China National Space Administration. The rover, Yutu-2 (Jade Rabbit-2), has traveled more than 318 meters on the moon to conduct scientific exploration. The lander woke up at 5:11 am Oct 23, and the rover, Yutu-2, awoke at 11:45 am Oct 22 to resume work for the 11th lunar day on the far side of the moon after "sleeping" during the extremely cold night. Both were working normally.

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 switched to a dormant mode during the lunar night due to the lack of solar power.

<https://www.chinadaily.com.cn/a/201911/04/WS5dbf9b2ba310cf3e35575428.html>

New rocket launcher shows versatility, superiority: report

Liu Xuanzun, Global Times, November 4, 2019

China's new multiple rocket launcher, which debuted at the National Day parade on October 1, not only fires rockets, but also tactical ballistic and anti-ship missiles, Chinese media reported, with experts saying on Monday the weapon could give the Chinese military an overwhelming advantage over enemies. The new multiple rocket launcher, still not known by its official designation, was developed based on the PHL-03 long-range multiple rocket launcher. It uses an 8x8 wheeled high mobility chassis, weighs 45 tons, and can adapt to temperatures ranging from -22 C to 55 C, Ordnance Industry Science Technology, a Xi'an-based periodical focused on the national defense industry, reported over the weekend.

Unlike the PHL-03, which is loaded with a fixed type of ammunition, the new rocket launcher has two modularized launch cells, and each can carry different types of ammunition, the periodical said, noting that this brings versatility and high efficiency to the weapon. While the weapon only carried two sets of four 370-millimeter rockets at the parade, the report said it could also switch to two sets of five 300-millimeter rockets, or the combination of the two. The export version of the new multiple rocket launcher, the AR-3, can even switch to the 750-millimeter Fire Dragon 480 tactical ballistic missile and TL-7B anti-ship missile, the report said. The AR-3 has a range of about 280 kilometers with rockets, and the domestic version is expected to be able to hit targets at 360

kilometers, even farther with missiles, the periodical wrote, noting that it can target high value strategic targets like airports, command centers, supply bases and anti-air installations.

<http://www.globaltimes.cn/content/1168920.shtml>

UAE and China technology development parallels provide cooperation opportunities

Ali Obaid Al Dhaheri, China Daily, November 4, 2019

The UAE's government initiatives have led the way in achieving technological advances; for example, in Artificial Intelligence. In October 2017 our government launched the "UAE Strategy for Artificial Intelligence", targeted towards future services, sectors and infrastructure projects. There is also a UAE Minister of State for Artificial Intelligence. In space also, the UAE is making great headway. Our nation recently sent the first Emirati to space, Astronaut Hazza Al Mansouri, who orbited the earth in the International Space Station and carried out various experiments. The UAE also aspires to conduct missions to Mars. The Emirates Mars Mission will blast off from Earth during July 2020 and is set to arrive at Mars in 2021 to coincide with the 50th anniversary of the founding of the UAE.

This month the UAE launched the Mohamed bin Zayed University of Artificial Intelligence - this is the world's first graduate-level, research-based Artificial Intelligence (AI) university. The extraordinary potential of AI will be unleashed as the university empowers students, businesses and governments. With China and the UAE both developing similar economies, they are maturing towards technological advancement at a similar time on their arc. Therefore, there is much opportunity for cooperation across a great many fields.

<https://www.chinadaily.com.cn/a/201911/04/WS5dbf7a4ca310cf3e3557529c.html>

China sends 49th BDS satellite into space

Deng Xiaoci, Global Times, November 5, 2019

China successfully sent its 49th satellite for its domestically developed BeiDou Navigation Satellite System, or BDS, into a planned orbit on Tuesday morning, navigation authorities told the Global Times. Carrying the new BDS satellite, a Long March-3B carrier rocket was launched from the Xichang Satellite Launch Center in Southwest China's Sichuan Province. The satellite will be the 3rd Inclined Geo Synchronous Orbit (IGSO) satellite for the latest BDS-3 system, marking the completion of the IGSO constellation for the system. The first IGSO satellite was launched in April, also by the Long March-3B rocket.

An extra protection device and measures have been installed to the rocket in response to the harsh environment in flight, strengthening reliability of the data collecting system, and the team has also optimized the interior structure of the third-stage engine for the rocket, reducing the stress level of the diaphragm to extend the life of the capsule assembly and improve the product qualification rate, and make the cryogenic engine more reliable, he noted. The Tuesday launch was the 106th launch of the Long March-3A rocket series and 317th of the Long March rocket family.

<http://www.globaltimes.cn/content/1168975.shtml>

Jiuquan Satellite Launch Center

China Daily, November 5, 2019

Jiuquan Satellite Launch Center, also called "Dongfeng Space City", is one of the launch test bases of China's scientific satellites, technology experiment satellites and rocket launchers. It is also the earliest and largest launch center for integrated missiles and satellites in China, and a main base for testing and launching Long March rocket series as well as various experiment satellites, application satellites, manned

spacecraft and rocket missiles of lower and medium orbits.

<https://www.chinadaily.com.cn/a/201911/05/WS5dc13bb3a310cf3e355758e0.html>

Chang'e 4 robotic probe begins 11th dormancy on moon's far side

Zhao Lei, China Daily, November 5, 2019

China's Chang'e 4 robotic probe started its 11th period of dormancy on the moon on Monday morning after the Yutu 2 rover sent back pictures of its tracks around the landing site, according to the China National Space Administration. The Chang'e 4's lander and Yutu 2 completed their tasks on their 11th lunar day and will endure temperatures as low as -190 C during the 14-day dormancy, the administration said in a statement. A lunar day equals 14 days on Earth, and a lunar night is the same length. During lunar nights, the temperature falls below -180 C, and there is no sunlight to provide power to the probe.

http://www.chinadaily.com.cn/cndy/2019-11/05/content_37520703.htm

China to meet challenges of exploring asteroid, comet

Xinhua, November 6, 2019

Chinese space engineers are tackling the key technologies needed to explore a near-Earth asteroid and a main-belt comet with one space probe. The proposed mission is to send a probe around an asteroid named 2016HO3 and then land on it to collect samples, Huang Jiangchuan, a researcher from the China Academy of Space Technology, recently told the first China Space Science Assembly in Xiamen, east China's Fujian Province. The probe will then fly back to the proximity of Earth, and release a capsule to return the samples. After that, the probe will continue its journey.

With the assistance of the gravity of Earth and Mars, it will finally arrive at the main asteroid belt and orbit comet 133P, Huang said. Asteroid 2016HO3 has a very close relationship with Earth and is known as a "mini moon" or a quasi satellite. It has a

diameter of about 40 to 100 meters and a density of about 2.7 grams per cubic centimeter, said Huang. The scientific objective includes studying the formulation and evolution of the solar system, the role of near-Earth asteroid and main-belt comet impacts on the origin of life, and the dynamics of small bodies in the solar system. The probe will be equipped with advanced scientific detectors, electric propulsion technology, automated navigation and intelligent control functions.

<https://www.chinadaily.com.cn/a/201911/06/WS5dc2bf6aa310cf3e35575d26.html>

China urges full implementation of Iran nuclear deal

Middle East Monitor, November 6, 2019

China called on Iran and the signatories to the nuclear deal to fully and effectively implement it. Commenting on Iran's decision to further reduce its obligations under the agreement, Chinese Foreign Ministry spokesman, Geng Shuang, said: "As we repeatedly pointed out, the root cause of sustained tensions around the Iranian nuclear issue lies with the US' unilateral withdrawal from the JCPOA [the nuclear deal] and its maximum pressure campaign against Iran."

The Chinese spokesman called on the US to abandon what he called "the wrong strategies such as unilateral sanctions and maximum pressure". "In the meantime, Iran and all other parties to the JCPOA need to exercise restraint, implement the deal effectively and in full, and stick to the JCPOA framework to resolve disputes."

<https://www.middleeastmonitor.com/20191106-china-urges-full-implementation-of-iran-nuclear-deal/>

Unilateral sanctions will not solve Iran crisis: Chinese FM

Global Times, November 6, 2019

The Chinese Foreign Ministry on Wednesday said unilateral sanctions and extreme pressure on Iran by the US are

wrong and will not solve the Iran nuclear crisis. Iran has started adding gas to 1,044 centrifuges in its Fordow uranium enrichment facilities, state TV reported on Wednesday. China believes that the US should abandon the unilateral sanctions and extreme pressure on Iran, which will not resolve the current Iranian nuclear crisis, Foreign Ministry spokesperson Geng Shuang said. "China has noted the remarks of Iranian President Rouhani and that relevant measures are reversible and subject to International Atomic Energy Agency [IAEA] supervision, emphasized by the Iranian side," Geng said. Resuming uranium enrichment at the Fordow plant starting

Wednesday has become another step for Iran to reduce compliance with the nuclear deal, media reported. The resumption is considered a response to the US withdrawal from the Iran nuclear deal and reimposition of sanctions.

<http://www.globaltimes.cn/content/1169205.shtml>

Illustrations showing ballistic missile on H-6N bomber not real: insider

Wei Yunfeng, Ma Jun and Liu Xuanzun, Global Times, November 7, 2019

Recent images in the Chinese magazine *Modern Ships* that show an H-6N bomber carrying an air-launched ballistic missile (ALBM) are not official confirmation of the H-6N's ALBM capability, a magazine insider said. The images are computer generated, merely conceptual and have no official background, the insider told the *Global Times*. The insider was responding to numerous foreign reports that have jumped to conclusion. UK-based *Jane's Defence Weekly* reported on Wednesday that the magazine's illustrations indicate the H-6N is capable of carrying an ALBM and it could be "in the final stages of development, or may even have entered service."

Making its debut to the general public in the National Day parade on October 1, the H-6N has attracted attention of foreign military analysts who have previously

speculated the bomber is capable of launching an ALBM, as the weapons bay of its predecessor, the H-6K, has been seemingly replaced with stations used to carry a large external load. An ALBM could be used to attack an aircraft carrier or even deliver nuclear warheads, foreign media claim. The new H-6N is believed to be the latest entry to the H-6 bomber family, with many improvements made to its predecessor H-6K, including an in-flight fuel-receiving probe on the nose of the aircraft, military observers said.

<http://www.globaltimes.cn/content/1169276.shtml>

China's new supersonic arsenal could give H-6N bomber force greater reach, military experts say

Minnie Chan and Liu Zhen, South China Morning Post, November 10, 2019

China's new H-6N strategic bomber could carry CJ-100 supersonic cruise missiles or the WZ-8 supersonic stealth spy drone, increasing its maximum strike range to 6,000km (3,728 miles), military sources said. The latest variant of the plane was designed to carry weaponry that was seen by the public for the first time at China's National Day parade last month, a source close to the People's Liberation Army Air Force said on Friday.

"The semi-recessed area under the fuselage of the H-6N is designed to carry either the WZ-8 or the CJ-100," said the source, who requested anonymity due to the sensitivity of defence matters. The CJ-100 - also known as DF-100 - is the PLA's third-generation ground-attack cruise missile. Its predecessor, the subsonic CJ-10, was carried by the H-6K variant of the bomber and had a range of more than 1,500km. As the CJ-100 is significantly larger than the CJ-10, some analysts expected its range to be as much as 2,000km.

<https://www.scmp.com/news/china/military/article/3036994/chinas-new-supersonic-arsenal-could-give-h-6n-bomber-force>

KuaiZhou-1A Y11 rocket successfully sends satellite to orbit **Li Qingqing**

Global Times, November 13, 2019

China's solid-fueled KuaiZhou-1A (KZ-1A) Y11 carrier rocket blasted off at 11:40 am on Wednesday and successfully sent the Jilin-1 Gaofen 02A satellite into planned orbit from the Jiuquan Satellite Launch Center in Northwest China's Gansu Province. The KZ-1A carrier rocket is developed by the China Aerospace Science & Industry Corporation (CASIC). It is capable of lifting 200 kilograms into a 700-kilometer sun synchronous orbit, according to a press release sent from CASIC to the Global Times on Tuesday.

<http://www.globaltimes.cn/content/1169899.shtml>

China sends five satellites into orbit via single rocket

Xinhua, November 13, 2019

Five new remote-sensing satellites were sent into planned orbit from the Taiyuan Satellite Launch Center in north China's Shanxi Province Wednesday. The five Ningxia-1 satellites were launched by a Long March-6 carrier rocket at 2:35 p.m. (Beijing Time). The satellites are part of a commercial satellite project invested by the Ningxia Jingui Information Technology Co., Ltd. and will be mainly used for remote sensing detection. The satellites and carrier rocket were developed by the DFH Satellite Co., Ltd. and the Shanghai Academy of Spaceflight Technology. Wednesday's launch was the 318th mission for the Long March series carrier rockets.

http://www.xinhuanet.com/english/2019-11/13/c_138552029.htm

Cutting-edge products and latest tech go on show in Shenzhen

Zhang Dandan, China Daily Global, November 13, 2019

Among the highlights of the China Hi-Tech Fair 2019 - running from Wednesday to Sunday, in Shenzhen, South China's

Guangdong province - are the launches of the latest products and technologies. Providing more support services for exhibitors, the CHTF 2019 invites scientific research institutions and technological companies from home and abroad to release their new products and technologies at the event which helps promote them, according to the event organizers. "As a world-renowned science and technology exhibition of China, the China Hi-Tech Fair is an excellent display platform for innovation enterprises, allowing us to not only connect with customers from various countries, but also to hear a large number of users' feedback and suggestions on products," said Liu Zihong, CEO of Royole Corp, a Shenzhen-based manufacturer of flexible displays.

China National Nuclear Corp is bringing its nuclear reactor technology, CNNC Hualong One (HPR 1000), to the CHTF 2019. The technology places China among the few countries to have independently developed third-generation nuclear power technology. It also helps the country reduce carbon emissions and increase energy accessibility.

http://www.chinadaily.com.cn/global/2019-11/13/content_37522558.htm

China does key test on Mars probe lander

Zhao Lei, China Daily, November 14, 2019

China carried out a key experiment for its coming Mars mission in Hebei province's Huailai on Thursday in front of dozens of foreign diplomats and journalists.

The experiment, which was to verify the design and capability of the lander of China's robotic Mars probe, has become the first of its kind in China, according to Zhang Kejian, director of the China National Space Administration, who oversaw the test.

The move has also been the first time for China to open its Mars mission to foreign visitors, he said, adding it was a practical

step in the nation's exchange and cooperation with the international space community.

<http://www.chinadaily.com.cn/a/201911/14/WS5dccb0a310cf3e3557755f.html>

China launches new crackdown on chemical safety

Reuters, November 14, 2019

China's cabinet will begin a nationwide safety crackdown on its massive chemical industry after an official investigation into a deadly plant blast that killed 78 people and injured dozens more in March. The explosion, at the Tianjiayi chemical factory in Yancheng in eastern coastal Jiangsu province, has already resulted in the closure of dozens of small plants and China expects to relocate more than 80% of hazardous chemical production by the end of 2020.

<https://www.reuters.com/article/us-china-chemicals/china-launches-new-crackdown-on-chemical-safety-idUSKBN1XN2WU>

China Focus: China unveils experiment for landing on Mars

Xinhua, November 14, 2019

China on Thursday unveiled an experiment simulating the process of a probe hovering, avoiding obstacles and descending to land on Mars. The experiment was held on a trial ground, the largest in Asia for test landing on extraterrestrial bodies, in Huailai County, north China's Hebei Province. China plans to launch the Mars probe in 2020, aiming to complete orbiting, landing and roving in one mission, an unprecedented achievement, according to the China National Space Administration (CNSA).

Zhang Rongqiao, chief designer of China's first Mars exploration mission, said after the probe is launched, it will take about seven months for it to reach Mars. The final landing procedure, however, will only last about seven minutes, which is the most difficult and risky part of the whole mission. Thursday's test verified the procedures including the lander's separation with the main body of the spacecraft from a 70-meter altitude, and then hovering at 67 meters

above the surface, searching for a safe landing spot, and then descending to 20 meters above the surface in an obstacle-avoiding mode.

http://www.xinhuanet.com/english/2019-11/14/c_138555137.htm

China joins race to perfect planes that can fly into space

China Daily, November 14, 2019

China announced last month that it had made breakthroughs in developing such two-part aerospace planes, via successful wind-tunnel experiments. Wind tunnels are used to simulate how the aircraft react to flight by projecting air around the craft and creating the illusion that the object itself is flying.

The experiments simulate the aerodynamic environment of a launch at extremely high speeds and the tests in China were able to demonstrate that a Chinese craft stayed safely on its trajectory, according to the China Academy of Aerospace Aerodynamics.

The escape velocity, which is the speed required to escape the gravitational pull of the earth, is 11.2 kilometers per second, which means these vehicles move extremely quickly.

<https://www.chinadaily.com.cn/a/201911/14/WS5dcc39d8a310cf3e35577305.html>

XHTZ, fertile ground for key & core technology

China Daily, November 15, 2019

Xi'an High-tech Industries Development Zone (XHTZ) has gathered more than 70 percent of the high-end innovative resources and major scientific and technological innovations in Xi'an, providing support for the development of key & core technology.

At present, the key & core technology industry in XHTZ has formed a pattern of rapid development of new formats like new technologies, artificial intelligence, and smart manufacturing, led by

information technology and optoelectronic chips. The zone has actively built a series of key and core technology towns, such as ZTE Science and Technology Town, 3D Printing Town, as well as Navigation Town.

The 2019 Xi'an High-Tech Zone Innovation Index was released at the 2019 Xi'an Global Key & Core Technology Conference, which showed that in the past five years, the zone has made great progress in its overall level of innovation and development.

http://www.chinadaily.com.cn/regional/2019-11/15/content_37523413.htm

China plans to complete space station construction around 2022: expert

Xinhua, November 17, 2019

China plans to complete the construction of a space station and have it put into operation around 2022, said Zhou Jianping, the chief designer of China's manned space program, at a forum held in south China's Guangdong Province. "The main goal of the construction of the space station is to enable China to become a country independently mastering the technology for long-term manned flight in near-Earth space, and having the capability to carry out long-term manned scientific experiments in near-Earth space and comprehensive development and utilization of space resources," said Zhou at the 4th China Summit Forum on Human Factors Engineering, which was held at Sun Yat-sen University from Saturday to Sunday.

http://www.xinhuanet.com/english/2019-11/17/c_138562388.htm

C. Pakistan

Pakistan Navy gets a big boost against Indian Navy in Arabian Sea

Daily Times, November 4, 2019

According to a press release of Pakistan Navy Media Directorate published recently, the steel cutting ceremony of two Type 054 A/P multi-role Frigates, being built for the Pakistan Navy, was held at Hudong Zhonghua Shipyard in China. China

recently started the construction of an export version of one of its advanced frigate and will deliver it to Pakistan as part of a major arms deal. The ship is a version of the Chinese Navy's most advanced guided-missile frigate Type 054AP.

According to the Pakistani Navy, the ship's class is Type 054AP, which means it is based on the Type 054A of the People's Liberation Army Navy. According to Chinese source, four frigates had been ordered by Pakistan.

<https://dailytimes.com.pk/494642/pakistan-navy-gets-a-big-boost-against-indian-navy-in-the-arabian-sea/>

China-Pakistan Cyber Security Cooperation

Aamna Rafiq, Pakistan Observer, November 6, 2019

With cutting-edge technological development in the field of artificial intelligence, robotics, quantum computing and world's top class information and communication technology (ICT) Companies, China is all set to rule the global cyberspace. With over 802 million users, China has the world's highest number of internet users. Among them 788 million (98 %) are mobile users which is a proof of China's increasing presence in the cyberspace and capability to replace US dominance over the internet. According to Global Innovation Index 2018, China is among the world's top 20 most innovative economies. The government of China has developed a comprehensive cyberspace regulation system consisting of new policies, laws and institutions which has transformed the national and international cyberspace landscape. The Chinese model is based on the ideology of cyber sovereignty. Beijing believes that every country should be independent to regulate cyberspace in accordance with its national law and cyber culture.

Pakistan also shares a similar ideology. Both countries emphasize on the establishment of reliable international cyberspace regime that promotes mutual

cooperation and have agreed to bridge the cyberspace development gaps. Both are willing to construct international and multilateral partnerships for the growth of digital economies. Pakistan along with China is playing active role in negotiation process for international cyberspace treaty at First and Third Committee of the United Nations General Assembly (UNGA) and United Nations Groups of Governmental Experts (UNGGE) at United Nations Security Council (UNSC).

<https://pakobserver.net/china-pakistan-cyber-security-cooperation/>

Conflict between nuclear-armed States must be avoided at all cost: **Jehanzeb Khan**

Daily Times, November 7, 2019

The United Nations General Assembly's main committee has adopted, by an overwhelming majority, a Pakistan-sponsored resolution under which the 193-member Assembly would reaffirm the urgent need to reach an early agreement on effective international arrangements to assure non-'nuclear'-weapon States against the use or threat of use of nuclear weapons.

The resolution, entitled: "Conclusion of effective international arrangements to assure non-'nuclear'-weapon States against the use or threat of use of nuclear weapons was voted in the Assembly's First Committee, which deals with disarmament and international security matters.

<https://dailytimes.com.pk/496602/conflict-between-nuclear-armed-states-must-be-avoided-at-all-cost-jehanzeb-khan/>

D. USA

U.S., allies working to offset loss of Iranian oil: Mnuchin

Manoj Kumar and Nidhi Verma, Reuters, November 1, 2019

The United States is working with allies to ensure adequate global oil supplies after its sanctions barred nations from buying Iranian crude, U.S. Treasury Secretary

Steven Mnuchin said on Friday. Mnuchin spoke to reporters during a trip to India - which was one of the main importers of Iranian oil until New Delhi stopped the shipments this May in the aftermath of the U.S. sanctions.

The United States is working with allies to ensure adequate global oil supplies after its sanctions barred nations from buying Iranian crude, U.S. Treasury Secretary Steven Mnuchin said on Friday. Mnuchin spoke to reporters during a trip to India - which was one of the main importers of Iranian oil until New Delhi stopped the shipments this May in the aftermath of the U.S. sanctions.

<https://www.reuters.com/article/us-india-usa-iran/u-s-allies-working-to-offset-loss-of-iranian-oil-mnuchin-idUSKBN1XB4PL>

U.S. targets Iranian top leader's inner circle with new sanctions

Ginger Gibson, Reuters, November 4, 2019

The United States on Monday imposed sanctions on nine people close to Iran's Supreme Leader Ayatollah Ali Khamenei, including his chief of staff, one of his sons and the head of the judiciary. Coinciding with the 40th anniversary of Iran's seizure of the U.S. embassy in Tehran, the U.S. Treasury Department said it also was blacklisting Iran's Armed Forces General Staff.

"Today the Treasury Department is targeting the unelected officials who surround Iran's Supreme Leader, Ayatollah Khamenei, and implement his destabilizing policies," Treasury Secretary Steven Mnuchin said in a statement. Iran's foreign ministry spokesman Abbas Mousavi called the sanctions "a sign of the desperation and inability of this regime in benefiting from a diplomatic and logical approach" to important international issues, according to the official IRNA news agency.

<https://uk.reuters.com/article/uk-iran-nuclear-usa/us-targets-iranian-top-leaders-inner-circle-with-new-sanctions-idUKKBN1XE1S5>

Centrus signs HALEU contract with Department of Energy

World Nuclear News, November 6, 2019

US company Centrus Energy Corp has signed a three-year contract with the Department of Energy (DOE) to deploy a cascade of centrifuges to demonstrate production of high-assay, low-enriched uranium (HALEU) fuel for advanced reactors.

The contract includes licensing, constructing, assembling and operating AC100M centrifuge machines and related infrastructure in a cascade formation to produce HALEU at the American Centrifuge Plant in Piketon, Ohio, for the demonstration programme. The DOE in January announced plans to award a contract to Centrus to demonstrate the production of HALEU in a cascade of 16 AC-100M centrifuges at Piketon, and work is already under way on the programme following the signature of a preliminary letter agreement in May. "Our partnership with the US Department of Energy to develop and demonstrate a US source of high-assay, low-enriched uranium will help America lead the transition to the next generation of advanced reactors," Centrus President and CEO Daniel Poneman said.

<https://www.world-nuclear-news.org/Articles/Centrus-signs-HALEU-contract>

U.S.'s Pompeo says Iran's latest nuclear steps raise concern

Reuters, November 7, 2019

Iran's recent "nuclear escalations" raise concerns that should move all countries to increase pressure on Tehran, U.S. Secretary of State Michael Pompeo said on Thursday, as Iran resumed uranium enrichment at one of its nuclear facilities.

"Iran's expansion of proliferation-sensitive activities raises concerns that Iran is positioning itself to have the option of a rapid nuclear breakout," Pompeo said in a statement. "It is now time for all nations to reject this regime's nuclear extortion and take serious steps to increase pressure. Iran's continued and numerous nuclear

provocations demand such action."

<https://www.reuters.com/article/us-iran-nuclear-usa/u-s-s-pompeo-says-irans-latest-nuclear-steps-raise-concern-idUSKBN1XH1OV>

Orano delivers transport cask for first US deployment

World Nuclear News, November 7, 2019

Orano TN has delivered its first NUHOMS MP197HB transport cask, which it describes as the most advanced and versatile shielded transport cask in the USA for moving used nuclear fuel assemblies and low-level radioactive waste (LLW). It is also the only transport cask available to transport high burnup and damaged used nuclear fuel in the country.

Orano said it will use the cask later this year to transport LLW generated from the ongoing decommissioning of the Vermont Yankee nuclear power plant to Waste Control Specialists' waste disposal site in Texas. NUHOMS MP197HB was initially licensed by the US Nuclear Regulatory Commission in October 2011, with nine subsequent revisions upgrading its capabilities to cover a wide variety of payloads. The first production unit is now fabricated, certified, delivered, and being deployed for its first mission, Orano said.

Sam Shakir, CEO of Orano USA, said the versatility of the cask for securely moving a variety of used fuel canisters was "critical" for the nuclear industry. "This versatility helps reduce decommissioning complexity and costs, simplify transport planning, and maintain commitments to the host communities for the safe management of radioactive materials," he said.

<https://www.world-nuclear-news.org/Articles/New-transport-cask-is-ready-for-first-US-deployment>

GNF and X-energy team up to produce TRISO fuel

World Nuclear News, November 7, 2019

Global Nuclear Fuel (GNF) and X-energy are to collaborate to produce high-assay low-enriched uranium (HALEU)

tristructural isotropic (TRISO) particle nuclear fuel, which they expect to be able to produce at lower costs than other potential manufacturers.

The two companies yesterday announced the signing of a teaming agreement to develop the fuel for its potential supply to the US Department of Defense for micro-reactors and to NASA for its nuclear thermal propulsion requirements. Using X-energy's operating commercial-scale TRISO production equipment and GNF's licensed nuclear fuel fabrication facility in Wilmington, North Carolina, the arrangement is expected to produce TRISO fuel of "significantly higher quality and at costs that are substantially lower than other potential manufacturers", they said.

<https://www.world-nuclear-news.org/Articles/GNF-and-X-energy-team-up-to-produce-TRISO-fuel>

US calls for 'serious steps' as Iran resumes uranium enrichment

Saudi Gazette, November 7, 2019

The United States on Thursday called for "serious steps" to be taken after Iran resumed uranium enrichment at its underground Fordow plant in a new step back from its commitments under a 2015 nuclear deal. Engineers began feeding uranium hexafluoride gas into the plant's mothballed enrichment centrifuges in "the first minutes of Thursday", the Iranian Atomic Energy Organization announced. The suspension of uranium enrichment at the long secret plant was one of the restrictions Iran had agreed to in return for the lifting of UN sanctions.

<http://saudigazette.com.sa/article/581991/World/Mena/US-calls-for-serious-steps-as-Iran-resumes-uranium-enrichment>

Civil engineering completed on ITER tokamak building

World Nuclear News, November 8, 2019

Civil engineering works have been completed on the building that will house the fusion machine of the International Thermonuclear Experimental Reactor (ITER) at Cadarache in south-eastern France. The

final concrete was poured yesterday for the upper part of the Tokamak Complex, meaning the metal frame of its roof can now be installed.

The Iter Organisation's European domestic agency, Fusion for Energy (F4E), awarded a EUR230 million (USD305 million) contract in December 2012 to the French-Spanish VFR consortium led by Vinci. The principal civil engineering contract covered the design and construction of 11 buildings and storage areas at the site, including the Tokamak Complex and the ITER Assembly Building.

ITER will be a 500 MW tokamak fusion device (requiring an input of 50 MW) designed to prove the feasibility of fusion as a large-scale and carbon-free source of energy. The European Union is contributing almost half of the cost of its construction, while the other six members (China, India, Japan, South Korea, Russia and the USA) are contributing equally to the rest. The target for first plasma is 2025.

<https://www.world-nuclear-news.org/Articles/Civil-engineering-completed-on-ITER-tokamak-buildi>

Pompeo slams Iran 'intimidation' of IAEA inspector as 'outrageous'

Saudi Gazette, November 9, 2019

US Secretary of State Mike Pompeo on Friday slammed Tehran's treatment of an inspector with the UN's nuclear watchdog agency last week as "an outrageous and unwarranted act of intimidation." The top US diplomat said Iran "detained" the inspector, who the International Atomic Energy Agency (IAEA) has said had been briefly prevented from leaving Iran.

Iran said Thursday it had canceled the inspector's accreditation after she triggered an alarm last week at the entrance to the Natanz uranium enrichment plant. The alarm during a check at the entrance to the plant in central Iran had raised concerns that she could be carrying a "suspect product" on her, Iran's Atomic Energy Organization said in a statement posted online. As a result,

she was denied entry, it added, without specifying whether or not anything had been found in her possession.

<http://saudigazette.com.sa/article/582144/World/America/Pompeo-slams-Iran-intimidation-of-IAEA-inspector-as-outrageous>

How the U.S. betrayed the Marshall Islands, kindling the next nuclear disaster

Susanne Rust, LA Times, November 10, 2019

Five thousand miles west of Los Angeles and 500 miles north of the equator, on a far-flung spit of white coral sand in the central Pacific, a massive, aging and weathered concrete dome bobs up and down with the tide.

Here in the Marshall Islands, Runit Dome holds more than 3.1 million cubic feet — or 35 Olympic-sized swimming pools — of U.S.-produced radioactive soil and debris, including lethal amounts of plutonium. Nowhere else has the United States saddled another country with so much of its nuclear waste, a product of its Cold War atomic testing program.

U.S. authorities later cleaned up contaminated soil on Enewetak Atoll, where the United States not only detonated the bulk of its weapons tests but, as The Times has learned, also conducted a dozen biological weapons tests and dumped 130 tons of soil from an irradiated Nevada testing site. It then deposited the atoll's most lethal debris and soil into the dome.

<https://www.latimes.com/projects/marshall-islands-nuclear-testing-sea-level-rise/>

US companies to cooperate on waste disposal technology

World Nuclear News, November 12, 2019

Deep Isolation and NAC International are to cooperate in the design, development and manufacturing of Deep Isolation's disposal canister technology.

Berkeley, California-based Deep Isolation has developed a solution for the management of used nuclear fuel and high-level radioactive waste (HLW) by emplacing

it in corrosion-resistant canisters placed in deep horizontal drillholes. The agreement will see the two companies collaborate to advance the technical aspects of Deep Isolation's design for canister storage, disposal and equipment for transferring used fuel and HLW from existing storage areas to a Deep Isolation repository, using NAC's dry fuel storage technologies.

"With NAC's global leadership and demonstrated canister safety and design expertise, we have an opportunity not only to further develop the safety and quality of our canister technology, but to implement a waste management strategy that covers onsite interim storage as well as handling, transport, and final disposal," Deep Isolation CEO Elizabeth Muller said.

<https://www.world-nuclear-news.org/Articles/US-companies-to-cooperate-on-waste-disposal-techno>

Nuclear belongs in the global energy future, says S&P Global Ratings

World Nuclear News, November 12, 2019

Nuclear power generation should remain a part of the global energy mix despite challenges related to tightening regulations, safety concerns, ageing asset bases, and increasingly volatile energy markets, S&P Global Ratings says in two reports published today. Both reports study the 'energy transition', as Nuclear Dead and Alive and Different Nuclear Energy Policies, Diverging Global Credit Trends.

"We see little economic rationale for new nuclear builds in the US or Western Europe, owing to massive cost escalations and renewables cost-competitiveness, which should lead to a material decline in nuclear generation in those countries by 2040," S&P Global Ratings Credit Analyst Elena Anankina, said in a statement to accompany the reports.

"But developing countries such as China and Russia continue to build new nuclear capacities to supply growing energy demand, supported by funding from the

government or from state-related banks and significantly lower construction costs.”

<https://www.world-nuclear-news.org/Articles/Nuclear-belongs-to-the-global-energy-future-says>

Trump energy pick faces questions on coal, nuclear power

Timothy Gardner, Reuters, November 14, 2019

President Donald Trump’s pick to run the U.S. Energy Department faced questions on emissions from energy operations and the future of nuclear power at his U.S. Senate confirmation hearing on Thursday, but was greeted warmly by senators from both parties who want to see him quickly confirmed.

Senator Joe Manchin, the top Democrat on the Senate Energy Committee, emphasized the vast U.S. energy resources in his remarks to Brouillette and assured him: “I just want you to know you’re going to have partners with you, we want you to succeed,” indicating broad support from lawmakers of both parties.

<https://www.reuters.com/article/us-usa-trump-energy/trump-energy-pick-faces-questions-on-coal-nuclear-power-idUSKBN1XO1OH>

Study proposes agenda for US decarbonisation

World Nuclear News, November 14, 2019

Achieving net-zero emissions in the USA by 2050 will require action across society, a new report from the Center for Climate and Energy Solutions (C2ES) has concluded. It recommends the development of innovative technologies including small advanced reactors and strong policies to ensure they are deployed, including a long-term federal framework and an economy-wide carbon pricing programme.

Getting to Zero: A US Climate Agenda sets out an agenda for decarbonising the US economy by 2050, and recommends more than 150 key actions it says are needed over the coming decade. It was developed through C2ES’s Climate Innovation 2050 initiative, which brings together leading US

companies from the power, transportation, finance, tech, oil and gas, chemicals, cement, steel, manufacturing, and food/agriculture sectors, and builds on an earlier report, Pathways to 2050: Alternative Scenarios for Decarbonizing the US Economy.

The agenda recommends that US decarbonisation strategy be guided by a set of key objectives including achieving net-zero emissions no later than 2050; re-establishing US leadership on climate change, developing and mobilising a broad array of technological solutions, promoting cost-effective solutions, protecting and enhancing competitiveness and energy security, ensuring an equitable transition, strengthening climate resilience, responding to new information and circumstances, and providing predictability to drive long-term investment.

<https://www.world-nuclear-news.org/Articles/Study-sets-agenda-for-US-decarbonisation>

E. Europe

Germany decries Iran’s move to speed up nuclear work, urges return to accord

Reuters, November 4, 2019

Iran’s announcement that it has developed advanced machines to speed up uranium enrichment jeopardizes a 2015 accord with world powers, Germany’s foreign minister said on Monday, urging Tehran to return to the pact. Iran has been gradually shedding commitments under the deal since the United States withdrew from it last year and reimposed sanctions on Tehran, blocking its oil exports to try to force it into negotiating stricter limits on its nuclear program.

Under the agreement between Iran and world powers, Tehran is only allowed to enrich uranium with just over 5,000 of its first-generation IR-1 centrifuges, widely seen as antiquated. The new IR-6 machines can refine uranium 10 times faster. “Iran has built very advanced centrifuges, which do not comply with the

agreement," German Foreign Minister Heiko Maas told a news conference in response to a question.

<https://www.reuters.com/article/us-iran-nuclear-germany/germany-decries-irans-move-to-speed-up-nuclear-work-urges-return-to-accord-idUSKBN1XE1JC>

Iran distances itself further from nuclear deal, alarming Russia, France

Parisa Hafezi, Reuters, November 6, 2019

Iran has stepped up activity at its underground Fordow nuclear plant, state TV said on Wednesday, a move France said showed for the first time that Tehran explicitly planned to quit a deal with world powers that curbed its disputed nuclear work. In another development that could also aggravate tensions between Iran and the West, diplomats said Iran briefly held an inspector for the U.N. nuclear watchdog and seized her travel documents, with some describing this as harassment.

Iran said the inspector was prevented from entering the Natanz facility because of a concern she might be carrying "suspicious material", the semi-official Fars news agency reported. It said screening equipment at Natanz flashed a warning sign when the inspector passed through so her equipment was searched, she was denied entry and the International Atomic Energy Agency was subsequently informed.

<https://www.reuters.com/article/us-iran-nuclear-fordow/iran-distances-itself-further-from-nuclear-deal-alarming-russia-france-idUSKBN1XG13D>

Europe should consider renewed sanctions on Iran, Germany suggests

Robin Emmott, Reuters, November 11, 2019

Germany, Britain and France should be ready to consider starting moves to reinstate international sanctions on Iran over breaches of its 2015 nuclear deal, Germany's foreign minister said on Monday. Europe's position is vital as the United States has withdrawn from the deal and the other signatories,

Russia and China, are allies of Iran and unlikely to start the process under which sanctions could be reimposed.

Iran said last week it had resumed low-grade uranium enrichment at its underground Fordow nuclear plant, and at the weekend said it could refine up to 60% of fissile purity, not far off the 90% level needed for nuclear bomb fuel. "Iran must finally return to its commitments (under the 2015 accord)," German Foreign Minister Heiko Maas said before a meeting of European Union foreign ministers in Brussels.

"Otherwise we will reserve the right to use all mechanisms specified in the deal (for sanctions to be reimposed)," he said, Under the deal, meant to reduce the scope for Tehran to develop nuclear weapons, Iran agreed to curb its nuclear programme in exchange for the removal of most international sanctions.

<https://www.reuters.com/article/us-iran-nuclear-eu/europe-should-consider-renewed-sanctions-on-iran-germany-suggests-idUSKBN1XL1H1>

France, Germany, Britain urge Iran to reverse nuclear deal breaches

Reuters, November 12, 2019

France, Britain and Germany said on Monday they would consider a dispute resolution mechanism enshrined in the 2015 Iran nuclear deal that could lead to United Nations sanctions being reimposed for recent breaches of the pact. In a joint statement, the three countries, known as the E3, warned Iran that its latest actions were hindering their efforts to defuse tensions in the region.

They added that they were extremely concerned by its decision to resume uranium enrichment at the Fordow plant, though stopped short of directly urging sanctions. "Iran's action ... has potentially severe proliferation implications," the three countries said in the statement. "We affirm our readiness to consider all mechanisms in the JCPoA (nuclear deal), including the dispute resolution

mechanism, to resolve the issues related to Iran's implementation of its JCPoA commitments."

<https://www.reuters.com/article/us-iran-nuclear-europe/france-germany-britain-urge-iran-to-reverse-nuclear-deal-breaches-idUSKBN1XL29R>

European concerns could spell end of Iran nuclear deal and new U.N. sanctions

John Irish And Robin Emmott, Japan Times, November 13, 2019

Europe's threat to trigger a mechanism that could reimpose United Nations sanctions on Iran marks a significant breakdown in diplomacy to try to save the 2015 nuclear deal and could presage its death knell, diplomats say. Britain, France and Germany have sought to salvage the pact, under which Iran undertook to curtail its uranium enrichment program in return for relief from sanctions crippling its economy, since the United States withdrew last year.

But the three European powers have failed to make good on the trade and investment dividends promised to Iran under the deal as they have been unable to shield Tehran from renewed U.S. sanctions that have strangled its vital oil trade. That has prompted Iran to renege step by step from its nonproliferation commitments under the deal. The U.N. nuclear watchdog (IAEA) confirmed Monday that Iran had resumed enriching uranium in its underground Fordow plant and was rapidly accelerating enrichment with a variety of advanced centrifuge machines also banned by the deal.

<https://www.japantimes.co.jp/news/2019/11/13/world/europe-sanctions-iran-nuclear/#.Xd9HLegvO7h>

Czech Republic approves construction of new nuclear plant

Claudia Patricolo, Emerging Europe, November 15, 2019

The Czech Republic approved the construction of the Dukovany II nuclear power plant, and has set a target date for completion of 2036. According to the Czech

parliamentary committee for the construction of new nuclear resources, this is an important step to maintain the self-sufficiency of the country. The committee claims that by 2040, renewable energy will not be able to cover all the country's electricity consumption and that nuclear power offers a clean alternative to coal.

"Energy security is our priority, and I am very pleased that today's meeting has given concrete deadlines," commented Prime Minister Andrej Babiš, who underlined how the construction of new nuclear units has a strong connection with European current events, the fight against climate change and emissions reduction targets. "Looking at Europe today, France has 52 nuclear reactors, and 75 per cent of electricity is generated by nuclear power. Then comes Sweden, which has 10 nuclear blocks and also hydro-power resources. Unfortunately, we can only cover 30 per cent of our consumption with nuclear power at the moment, but our goal is to reach 40 per cent by 2040," Mr Babiš continued. "We are very concerned about our planet and climate change. Our government has a clear plan." The Czech Republic currently has six nuclear reactors at two separate power plants: Dukovany I - which first began operating in 1985 - and Temelin, operational since 2000 but licensed only until 2022.

<https://emerging-europe.com/news/czech-republic-approves-construction-of-new-nuclear-plant/>

F. Russia

Russia hints that a new arms race is about to begin as it warns there 'is not enough time' to draft new arms control treaty between Moscow and the US before current one expires in 2021

Chris Pleasance, Daily Mail, November 1, 2019

Russia's foreign ministry says there is no longer enough time left to draft a new nuclear arms treaty with the US before the only one left in existence expires.

Foreign ministry official Vladimir Leontyev raised fears of a new Cold War arms race between the two world powers on Friday when he said it will not be possible to replace the New START treaty before it lapses in 2021.

New START, which limits the number of large-scale nukes that Russia and the US can deploy, is the only nuclear pact left between the two powers after Donald Trump tore up the Intermediate-Range Nuclear Forces Treaty (INF) earlier this year.

<https://www.dailymail.co.uk/news/article-7638943/Russia-says-not-time-replace-nuclear-arms-treaty-US.html>

Second Novovoronezh II unit enters commercial operation

World Nuclear News, November 1, 2019

Unit 2 of the Novovoronezh II nuclear power plant in southwest Russia has entered commercial operation, 30 days ahead of schedule, state nuclear corporation Rosatom announced today. Commissioning of the VVER-1200 brings the number of power reactors in commercial operation in Russia to 36.

The reactor was brought to the minimum controlled power level on 22 March, was first connected to the grid on 1 May and started pilot operation in June. Acceptance tests were successfully completed on 16 September. Rosatom noted that the unit has already produced 2.5 terawatt-hours of electricity since being grid connected.

Novovoronezh II-2 is the third VVER-1200 to be commissioned, following Novovoronezh II-1 and Leningrad II-1, which were launched in 2016 and 2017, respectively. The loading of fuel into the Leningrad II-2 VVER-1200 is scheduled to begin in March next year.

"Hundreds of nuclear specialists contributed to the implementation of this project," said Alexander Lokshin, first deputy director general for Operational Management at Rosatom. "A new powerful generation source was added to the Russian energy system. We can now use

this dual-unit nuclear power plant design as a reference for our foreign projects.

<https://www.world-nuclear-news.org/Articles/Second-Novovoronezh-II-unit-enters-commercial-oper>

Last Major Nuclear Arms Pact Could Expire With No Replacement, Russia Says

Richard Pérez-Peña, Ivan Nechepurenko and David E. Sanger

The New York Times, November 1, 2019

A Russian arms control official said for the first time on Friday that there was not enough time to replace the last and most important nuclear arms-limitation treaty with the United States before it expires early in 2021, raising the possibility that Washington and Moscow would then be free to expand their arsenals without limits.

New Start expires in February 2021, just weeks after the next presidential inauguration in Washington. While it can be extended for five years by mutual agreement, President Trump and his aides have signaled repeatedly that he intends to let it expire unless it can be broadened to include other nations with strategic weapons, chiefly China.

Revising the treaty, especially expanding it to other nations, would be extremely complex and, history suggests, would take years to complete. Most experts believe that even if talks started now, which the Trump administration is not prepared to do, negotiators could not complete a new accord before the treaty expires.

<https://www.nytimes.com/2019/11/01/world/europe/nuclear-arms-pact-expire-russia.html>

Lavrov blames U.S. for events surrounding Iran nuclear deal

Tehran Times, November 6, 2019

Speaking to reporters in Moscow, Lavrov said events unfolding around the nuclear deal were extremely alarming. He blamed the situation on the United States, which

pulled out of the pact and re-imposed sanctions on Tehran.

Dmitry Peskov, a spokesman for Russian President Vladimir Putin, also said Moscow was also “monitoring the development of the situation with concern” and supported “the preservation of this deal.”

At the same time, Peskov said Russia understood Tehran’s concerns over the “unprecedented and illegal sanctions” against the country.

<https://www.tehrantimes.com/news/441754/Lavrov-blames-U-S-for-events-surrounding-Iran-nuclear-deal>

Russia has retaliation ready if U.S. quits Open Skies treaty: RIA

Reuters, November 7, 2019

Russia has drawn up retaliatory measures in case the United States leaves the Open Skies treaty, a pact which allows both countries to conduct surveillance flights over each other’s territory, the RIA news agency reported late on Wednesday.

The treaty, which entered into force in 2002, covers 34 countries and is designed to build trust between signatories, allowing them to conduct short-notice unarmed surveillance flights to gather information on one another’s militaries.

RIA cited a senior Russian Foreign Ministry official as saying late on Wednesday that Washington’s exit from the Open Skies treaty would deal a blow to global security, but that Moscow had drawn up a response in case it happened.

<https://www.reuters.com/article/us-russia-usa-treaty/russia-has-retaliation-ready-if-us-quits-open-skies-treaty-ria-idUSKBN1XH0WX>

ARMZ starts exploration of Dobrovolnoye uranium deposit

World Nuclear News, November 7, 2019

ARMZ, the uranium mining division of state nuclear corporation Rosatom, has announced the start of exploration work at the Dobrovolnoye uranium deposit in the

Zverinogolovsky district of the Kurgan region of Russia. ARMZ subsidiary JSC Dalur received a permit for the project in June 2017, and ARMZ said yesterday that Rusburmash, its geological exploration and drilling subsidiary, plans to drill 238 wells and carry out geophysical surveys at the site.

ARMZ has said that commissioning the Dobrovolnoye deposit - which has estimated reserves of 7067 tonnes of uranium - will enable JSC Dalur to increase the volume of uranium recovery from the current 590 tonnes per year to 700 tonnes by 2025.

Anatoly Novgorodtsev, chief geologist at Rusburmash, said in the ARMZ statement that all three uranium deposits of the Trans-Urals - Dalmatovskoye, Khokhlovskoye and Dobrovolnoye - are alike in terms of their formation, mineral composition of ores, chemical composition of groundwater, and hydrogeological and geological conditions.

<https://www.world-nuclear-news.org/Articles/ARMZ-starts-exploration-of-Dobrovolnoye-uranium-de>

US presents no proof of Russia’s deployment of intermediate range missiles – Lavrov

TASS News Agency, November 8, 2019

The United States has presented no satellite images to back up its allegations Russia has deployed intermediate range missiles in its territory, Russian Foreign Minister Sergey Lavrov told the 4th Moscow Nonproliferation Conference on Friday.

“We’ve been asking the Americans for several years to present concrete facts that might confirm the alleged violations, but they have emphatically refused to do so,” Lavrov said. “Nobody has ever shown us satellite images, which in my opinion are the sole way of confirming the charges.”

Russia’s top diplomat stressed that Washington’s withdrawal from the Intermediate-Range Nuclear Forces (INF)

Treaty would trigger negative consequences, noting that both sides had mutual claims against each other. "Instead of solving them in a professional, constructive and business-like way, our American colleagues were only busy searching for pretexts to dismantle the INF Treaty," Lavrov went on.

<https://tass.com/politics/1087599>

Russia voices concern over full collapse of JCPOA

Tehran Times, November 8, 2019

Russian Deputy Foreign Minister Sergei Ryabkov voiced his country's deep concern over full failure of the Joint Comprehensive Plan of Action (JCPOA), commonly known as Iran nuclear deal.

"Moscow worries about failure of JCPOA," Ryabkov was quoted as saying by the Persian language website of Sputnik.

"We are witnessing such danger. The pact can be really ruined, that is why we have called on engaging sides to refrain (from more tensions) and resort to thoughtful measures."

Touching upon Iran's reduction of obligations under the JCPOA, the Russian diplomat said, "Everything, from a technical view, is reversible."

<https://www.tehrantimes.com/news/441789/Russia-voices-concern-over-full-collapse-of-JCPOA>

Russia & Iran launch construction of new reactor at Bushehr nuclear power plant

Russian Times, November 11, 2019

Works on the second stage of Iran's Bushehr nuclear power plant (NPP) officially kicked off in the country as concrete was poured for a new reactor base on Sunday.

"Nuclear power provides reliable electricity...and each power plant saves us 11 million barrels of oil or \$660 million per year," said Ali Akbar Salehi, head of the Atomic Energy Organization of Iran.

"In a long term vision until 2027-2028, when these projects are finished, we will have

3,000 MW [megawatts] of nuclear plant-generated electricity," he added.

The Bushehr plant is the first nuclear power facility in the Middle East. Tehran estimates that each 1,000 MW reactor will save Iran 11 million barrels of crude annually. It is eyeing several ways to spend the additional megawatts, including powering a water desalination plant in Bushehr province.

<https://www.rt.com/business/473128-iran-russia-bushehr-npp/>

Russia expresses concerns over Europe's failure to fulfill commitments to nuclear deal

Tehran Times, November 10, 2019

Russian Foreign Ministry spokesperson Maria Zakharova has expressed concerns over Europe's failure to fulfill commitments under the 2015 nuclear deal, officially known as the Joint Comprehensive Plan of Action (JCPOA).

In an interview with a Russian news website, she said that the European signatories to the nuclear deal are incapable of safeguarding Iran's interests which is worrisome, IRNA reported on Sunday.

She also described the United States' withdrawal from the JCPOA as an "illegal action".

U.S. President Donald Trump abandoned the deal in May 2018 and returned sanctions and imposed new harsh ones.

<https://www.tehrantimes.com/news/441869/Russia-expresses-concerns-over-Europe-s-failure-to-fulfill-commitments>

Russia criticizes Western propagandistic campaigns against Iran nuclear deal

Tehran Times, November 12, 2019

The Russian permanent envoy to the Vienna-based international organizations has lashed out at hue and cry created over the Joint Comprehensive Plan of Action

(commonly called the nuclear deal) by some Western media outlets, saying such moves will harm the agreement.

“We are witnessing non-continuous efforts to damage the JCPOA from any possible way,” Mikhail Ulyanov wrote in his twitter account on Tuesday.

<https://www.tehrantimes.com/news/441940/Russia-criticizes-Western-propagandistic-campaigns-against-Iran>

Russia’s Putin warns Bolivia is on the brink of chaos

Reuters, November 15, 2019

Russian President Vladimir Putin said on Thursday that Bolivia was on the brink of chaos and there was a power vacuum after Evo Morales resigned as president under pressure on Sunday.

Moscow has commercial interests in Bolivia where Russia’s state nuclear agency is building a nuclear center. Morales visited Moscow for talks with Putin as recently as June, pointing to Bolivian gas and lithium as areas for cooperation.

<https://www.reuters.com/article/us-bolivia-election-russia-putin/russias-putin-warns-bolivia-is-on-the-brink-of-chaos-idUSKBN1XO2OQ>

Russia’s intelligence chief predicts New START to have same plight as INF Treaty

TASS News Agency, November 15, 2019

The strategic arms reduction treaty New START will most probably cease to exist in February 2021, the director of Russia’s Foreign Intelligence Service (SVR), Sergei Naryshkin, said at a roundtable conference at the Baltic State Technical University, devoted to the history of Russia’s rocket-building industry, on Friday.

The strategic arms reduction treaty New START will most probably cease to exist in February 2021, the director of Russia’s Foreign Intelligence Service (SVR), Sergei Naryshkin, said at a roundtable conference at the Baltic State Technical University, devoted to the history of Russia’s rocket-

building industry, on Friday.

<https://tass.com/politics/1089331>

West Asia

G. Iran

‘Iran to keep reducing JCPOA commitments if its interests not protected’

Tehran Times, November 1, 2019

The Islamic Republic will continue to reduce its commitments under the 2015 nuclear agreement, also known as the Joint Comprehensive Plan of Action, if the other parties to the deal do not respect their obligations, says an MP.

“If the other parties to the deal do not respect their obligations, we will definitely take further steps to reduce our commitments under the deal,” Deputy Chairman of the Majlis National Security and Foreign Policy Committee Kamal Dehghani Firouzabadi said, Mehr reported on Friday.

The lawmaker also called on the remaining parties to the deal to stand up to Washington’s unilateral pressure on Iran.

<https://www.tehrantimes.com/news/441613/Iran-to-keep-reducing-JCPOA-commitments-if-its-interests-not>

‘Iran better to reduce nuclear commitments than quit nuclear deal’

Tehran Times, November 2, 2019

It is better for Iran to reduce commitments to the 2015 nuclear deal, known as the JCPOA, rather than quit the agreement altogether, Iran’s former ambassador to Norway has said.

In an interview with ISNA published on Saturday, Abdolreza Faraji-Rad said that Iran will take the fourth step in reducing nuclear commitments if Europe fails to fulfill its obligations.

He added that Iran's actions in reducing commitments under the JCPOA are within the framework of the deal.

Mahmoud Vaezi, the presidential chief of staff, confirmed on Wednesday that Iran will take the fourth step to reduce commitments under the nuclear deal if the remaining parties fail to honor obligations by the scheduled deadline.

<https://www.tehrantimes.com/news/441652/Iran-better-to-reduce-nuclear-commitments-than-quit-nuclear>

Iranian envoy: Mogherini successor favors independent European foreign policy

Tehran Times, November 2, 2019

The Iranian ambassador to Spain has said that the newly-elected chief of the European Union's foreign policy has proven in his past political records that he is against unilateralism, promising that the new chief is after independency of the bloc's foreign policy approach.

Hassan Qashqavi's remarks came in an interview with the official news agency IRNA published on Saturday.

"He (Borrell), according to experts' belief, due to his opposition to the U.S. unilateralism, and his explicit criticism against Donald Trump, his support for Iran's nuclear deal (JCPOA), his approach towards Iran's Islamic Revolution and totally his empathic views towards Iran, is capable of playing effective role in future relations between Tehran and Europe," the envoy pointed out.

<https://www.tehrantimes.com/news/441646/Iranian-envoy-Mogherini-successor-favors-independent-European>

Top MP urges administration to take stronger fourth nuclear step

Tehran Times, November 3, 2019

A senior member of the parliament has urged the administration of President Hassan Rouhani to take its next step of scaling back its commitments under the 2015

nuclear agreement, officially known as the Joint Comprehensive Plan of Action (JCPOA).

"The fourth nuclear step should be taken more firmly in order to push the Europeans to fulfill their commitments to the deal," Mehr quoted Mojtaba Zonnour as saying on Sunday.

Zonnour said he had suggested that the administration take all its retaliatory measures in a single step instead of giving the other side 60-day ultimatums.

<https://www.tehrantimes.com/news/441689/Top-MP-urges-administration-to-take-stronger-fourth-nuclear-step>

JCPOA promoted Iran's standing worldwide: VP

Tehran Times, November 3, 2019

The Iranian vice president for parliamentary affairs said on Saturday that the Joint Comprehensive Plan of Action (JCPOA) signed between Iran and world powers in 2015 promoted Tehran's standing globally.

"Settling the Iran nuclear standoff was not a simple matter as several resolutions had already been approved against Iran. The nuclear deal was the most prominent success achieved by the government in 2015," Hossein Ali Amiri said.

Through the JCPOA, the official name for the 2015 nuclear agreement, Iran proved to the world that despite intensive propaganda campaigns by Israel and hardliners in Washington, Iran's nuclear program is purely peaceful.

<https://www.tehrantimes.com/news/441641/JCPOA-promoted-Iran-s-standing-worldwide-VP>

Rouhani to announce details of fourth step in reducing nuclear commitments

Tehran Times, November 4, 2019

Government spokesman Ali Rabiei said on Monday that President Hassan Rouhani will announce details of Iran's fourth step

in reducing its nuclear commitments in response to the annulment of the 2015 nuclear agreement and return of sanctions by the United States coupled with inaction by the European Union to protect Iran from sanctions.

Under the nuclear deal, officially known as the Joint Comprehensive Plan of Action, Iran agreed to put curbs on its nuclear work in exchange for termination of economic and financial sanctions.

Iran continued to fully adhere to the agreement even one year after the U.S. quit the deal with the hope that the remaining parties would offset sanctions.

<https://www.tehrantimes.com/news/441738/Rouhani-to-announce-details-of-fourth-step-in-reducing-nuclear>

Iran announces sharp rise in enriched uranium production

Saudi Gazette, November 4, 2019

Iran announced on Monday a more than tenfold increase in enriched uranium production following a series of steps back from commitments under a 2015 nuclear deal abandoned by the United States.

Iran has also developed two new advanced centrifuges, one of which is undergoing testing, said Ali Akbar Salehi, the head of Atomic Energy Organisation of Iran.

Enriched uranium production has reached five kilograms per day, Salehi told reporters at the Natanz facility in central Iran in remarks broadcast by state TV.

That compares with the level of 450 grams two months ago when it abandoned a number of commitments made under a landmark 2015 nuclear deal.

<http://saudigazette.com.sa/article/581689/World/Mena/Iran-announces-sharp-rise-in-enriched-uranium-production>

EU warns as Iran announces sharp rise in enriched uranium production

Saudi Gazette, November 4, 2019

Iran announced Monday a more than tenfold increase in enriched uranium

production following a series of steps back from commitments under a 2015 nuclear deal abandoned by the United States.

The Islamic republic has also developed two new advanced centrifuges, one of which is undergoing testing, Ali Akbar Salehi, the head of the Atomic Energy Organisation of Iran, announced.

Enriched uranium production has reached five kilograms per day, Salehi told reporters at the Natanz facility in central Iran in remarks broadcast by state television. That compares with the level of 450 grams two months ago.

Tehran decided in May to suspend certain nuclear commitments, a year after US President Donald Trump withdrew from the deal between world powers and Iran and reimposed sanctions on the country.

<http://saudigazette.com.sa/article/581705/World/Mena/EU-warns-as-Iran-announces-sharp-rise-in-enriched-uranium-production>

Anti-American rallies as Iran marks 1979 US embassy siege

Saudi Gazette, November 4, 2019

With anti-American slogans and effigies mocking President Donald Trump, thousands rallied outside the former US embassy in Tehran on Monday to mark the 40th anniversary of the Iran hostage crisis.

Rallies also took place in several other cities four decades to the day after revolutionary students stormed the complex and seized dozens of American diplomats and embassy staff – an event that still strains ties.

“They will continue their enmity against us. They are like a lethal scorpion whose nature is to have a poisonous sting,” the head of the army, General Abdolrahim Mousavi, said in a speech in Tehran. “We are ready to crush this scorpion and will also pay the price.” He slammed the idea of interacting with the United States as a ruse, echoing recent remarks by Iran’s supreme leader Ayatollah Ali Khamenei.

<http://saudigazette.com.sa/article/581711/World/Asia/Anti-American-rallies-as-Iran-marks-1979-US-embassy-siege>

Iran adds to breaches of nuclear deal with enrichment push - IAEA report

Francois Murphy, Reuters, November 5, 2019

Iran is enriching uranium at its underground Fordow site and rapidly accelerating enrichment more broadly, a report by the U.N. atomic watchdog showed on Monday, outlining Tehran's latest breaches of its 2015 nuclear deal with major powers.

France called on Iran to reverse its latest decisions to reduce commitments to a 2015 nuclear deal which contravene the accord and Paris said it was now awaiting a report from the international nuclear watchdog on the issue.

"The announcement by Iran on November 5 to increase its enrichment capacity goes against the Vienna agreement, which strictly limits activities in this area," French foreign ministry spokeswoman Agnes von der Muhll told reporters in a daily briefing. "We are waiting with our partners for the next IAEA (International Atomic Energy Agency) reports on Iran's announcements and actions."

She added that France remained committed to the deal and urged Iran to "fully adhere to its obligations and to cooperate fully with the IAEA, both in JCPOA (Iran deal) and its other nuclear obligations."

<https://in.reuters.com/article/iran-nuclear-iaea/iran-adds-to-breaches-of-nuclear-deal-with-enrichment-push-iaea-report-idINKBN1XL205>

Iran uranium enrichment plan alarms, EU Russia

Saudi Gazette, November 5, 2019

The European Union voiced concern Tuesday at Iran's announcement that it would resume uranium enrichment at an underground plant, warning it is getting harder to preserve the 2015 nuclear deal.

An EU spokeswoman said it was becoming "increasingly difficult" to save the accord, which was abandoned by the US in May last year and which Iran has undercut with

a series of recent moves to step up its nuclear activities. Meanwhile, Russia also expressed concern on Tuesday about Iran's decision to resume uranium enrichment at an underground plant south of Tehran.

"We are monitoring the development of the situation with concern," President Vladimir Putin's spokesman Dmitry Peskov told reporters.

"The dismantling of the Joint Comprehensive Plan of Action (JCPOA) does not bode well, of course," he said. "We support the preservation of this deal."

After the US ditched the deal, it reimposed crippling sanctions, prompting Iran to begin suspending its own commitments.

<http://saudigazette.com.sa/article/581794/World/Mena/Iran-uranium-enrichment-plan-alarms-EU-Russia>

Iran says to resume enrichment at underground plant

Saudi Gazette, November 5, 2019

President Hassan Rohani said on Tuesday that Iran would resume uranium enrichment at an underground plant south of Tehran in its latest step back from a troubled 2015 agreement with major powers.

The suspension of all enrichment at the Fordow plant in the mountains near the Shiite holy city of Qom was one of the restrictions on its nuclear activities that Iran accepted in return for the lifting of international sanctions.

But Washington's abandonment of the deal in May last year followed by its reimposition of crippling sanctions prompted Iran to begin a phased suspension of its own commitments in May this year.

Rouhani recalled that under the terms of the agreement Iran had retained more than 1,000 centrifuges at the plant which had been running empty since it went into effect.

"Starting from tomorrow (Wednesday),

we will begin injecting (uranium hexafluoride) gas at Fordo," Rohani said in a speech broadcast by state television.

<http://saudigazette.com.sa/article/581781/World/Mena/Iran-says-to-resume-enrichment-at-underground-plant>

Iran starts injecting uranium gas into centrifuges at Fordow

Saudi Gazette, November 6, 2019

Iran has started to inject uranium gas into centrifuges at its underground Fordow nuclear facility, state TV reported on Wednesday, further distancing itself from a 2015 nuclear deal between Tehran and world powers that curbed its atomic work.

The deal bans nuclear material from Fordow and, with the injection of uranium gas into its centrifuges, the facility will move from its permitted status of research plant to become an active nuclear site. "With the presence of inspectors from International Atomic Energy Agency, Iran started injecting (uranium) gas into centrifuges in Fordow," TV reported.

Iran agreed in 2015 to turn Fordow into a "nuclear, physics and technology center" where 1,044 centrifuges are used for purposes other than enrichment, such as producing stable isotopes, which have a variety of civil uses.

<http://saudigazette.com.sa/article/581882/World/Mena/Iran-starts-injecting-uranium-gas-into-centrifuges-at-Fordow>

Iran's treatment of nuclear inspector 'not acceptable': IAEA

Saudi Gazette, November 7, 2019

The UN's nuclear watchdog said Thursday that one of its inspectors in Iran was briefly prevented from leaving the country last week, calling her treatment "not acceptable".

The Acting Director General of the International Atomic Energy (IAEA), Cornel Feruta, "today informed the IAEA Board of Governors that an Agency inspector was last week temporarily prevented from leaving

Iran," a statement from the agency said.

According to the statement, Feruta said: "Preventing an inspector from leaving a country, particularly when instructed to do so by the Agency, is not acceptable and should not occur."

Iran said Thursday it had canceled the inspector's accreditation after she triggered an alarm last week at the entrance to the Natanz uranium enrichment plant.

<http://saudigazette.com.sa/article/582019/World/Asia/Irans-treatment-of-nuclear-inspector-not-acceptable-IAEA>

Iran resumes uranium enrichment in new step away from nuclear deal

Saudi Gazette, November 7, 2019

Iran resumed uranium enrichment at its underground Fordow plant south of Tehran on Thursday in a new step back from its commitments under a landmark 2015 nuclear deal.

Engineers began feeding uranium hexafluoride gas into the plant's mothballed enrichment centrifuges in "the first minutes of Thursday", the Iranian Atomic Energy Organisation said.

The suspension of uranium enrichment at the long secret plant was one of the restrictions Iran had agreed to on its nuclear program in return for the lifting of UN sanctions.

Iran's announcement that it would resume enrichment at the Fordow plant from midnight (2030 GMT Wednesday) had drawn a chorus of concern from the remaining parties to the troubled agreement.

<http://saudigazette.com.sa/article/581958/World/Mena/Iran-resumes-uranium-enrichment-in-new-step-away-from-nuclear-deal>

Iran not to quit nuclear deal: presidential chief of staff

Tehran Times, November 8, 2019

Mahmoud Vaezi, President Rouhani's chief of staff, said on Thursday that Iran does not seek to quit the 2015 nuclear deal, officially known as the Joint Comprehensive Plan of Action (JCPOA). "We are not after quitting the JCPOA, however, we will do anything to protect the Iranians' dignity," he said in a meeting with local officials in Bushehr Province.

The comments by Vaezi came one day after Iran started to inject uranium gas into 1044 IR-6 centrifuges at the Fordow nuclear plant. The presidential chief of staff said even China and Russia have announced that a "unilateral implementation of the JCPOA by Iran is not acceptable."

<https://www.tehrantimes.com/news/441781/Iran-not-to-quit-nuclear-deal-presidential-chief-of-staff>

IAEA inspector tried to commit act of sabotage in Iran's nuclear sites: ambassador

Tehran Times, November 8, 2019

Kazem Gharibabadi, Iran's ambassador and permanent representative to the Vienna-based international organizations, said on Thursday the Islamic Republic will not compromise on safety and security at its nuclear facilities.

Gharibabadi made the remarks after a session of the Board of Governors of the International Atomic Energy Agency (IAEA).

The session of the Board of Governors was held to address two issues, one of which was related to one of the agency's inspectors, he said, Tasnim reported.

Reuters first reported on Wednesday that Iran had held an IAEA inspector and seized her travel documents in what appears to be the first incident of its kind since Iran's nuclear deal with major powers was struck in 2015.

<https://www.tehrantimes.com/news/441790/IAEA-inspector-tried-to-commit-act-of-sabotage-in-Iran-s-nuclear>

Tehran says ready to scrap JCPOA if need be

Tehran Times, November 9, 2019

The Atomic Energy Organization of Iran (AEOI) spokesman says Iran is ready to scarp the nuclear deal if need be, emphasizing that the AEOI has the potential to enrich uranium to 5, 20 or 60 percent, while noting that Iran will not tolerate any act of sabotage against its nuclear facilities.

"If the country's interests necessitate that we set Barjam aside, this will definitely be implemented, and the Atomic Energy Organization and Foreign Ministry will not be the sole decision-makers in that regard, but it will be up to the entire country to decide," Behrooz Kamalvandi said at a press conference at the Fordow nuclear facility on Saturday, using a Persian acronym for the nuclear agreement Iran and six world powers struck in 2015 and later ditched by the United States.

<https://www.tehrantimes.com/news/441817/Tehran-says-ready-to-scrap-JCPOA-if-need-be>

Concrete-casting operation starts at phase II of Bushehr nuclear plant

Tehran Times, November 10, 2019

The concrete-casting operation of the new phase of the Bushehr nuclear power plant started on Sunday,

The concrete-casting operation was launched in a ceremony attended by Atomic Energy Organization of Iran (AEOI) chief Ali Akbar Salehi, a number of state and provincial officials, parliamentarians and manager of Russian companies active in the site.

"Cementing process of the nuclear reactor of the Bushehr power plant's phase II is one of the key processes and an important event in the site by which we have taken a giant stride towards development of nuclear power plants in the country," Mahmoud Jafari, the executive manager for the new phases of the Bushehr nuclear

plant, told reporters on the sidelines of the ceremony.

<https://www.tehrantimes.com/news/441854/Concrete-casting-operation-starts-at-phase-II-of-Bushehr-nuclear>

Iran says not to rely on foreigners' JCPOA promises

Tehran Times, November 10, 2019

The spokesman for the Iranian Foreign Ministry said on Sunday that Tehran has left the door open for dialogue on implementation of the JCPOA but it will never decide the nation's fate based on foreigners' promises and words.

Seyed Abbas Mousavi said that the Europeans can't utilize a snapback mechanism in response to Tehran's reaction to the U.S. unilateral withdrawal from the JCPOA and imposing illegal sanctions on the country.

According to the JCPOA, commonly called the nuclear deal, Iran agreed to put limits on its nuclear activities in exchange for termination of economic and financial sanctions.

<https://www.tehrantimes.com/news/441845/Iran-says-not-to-rely-on-foreigners-JCPOA-promises>

Iran says has no immediate plan to quit NPT

Tehran Times, November 10, 2019

Spokesman for the Iranian Foreign Ministry announced on Sunday that there are several options on the table, but based on the current situation, Tehran does not have any immediate plan to leave the nuclear Non-Proliferation Treaty (NPT).

Touching upon the Iranian Ambassador to London Hamid Baeidinejad's remarks on the country's possible withdrawal from the NPT, Mousavi said, "Baeidinejad presented a number of spectrums about the existing view in the country. I have also said that Iran currently does not have any decision for the issue (leaving the NPT)."

<https://www.tehrantimes.com/news/441867/Iran-says-has-no-immediate-plan-to-quit-NPT>

Iran says INSTEX has not been fully implemented

Tehran Times, November 11, 2019

Iranian Deputy Foreign Minister for Political Affairs Abbas Araghchi has said that INSTEX has not been yet fully implemented.

INSTEX (Instrument in Support of Trade Exchanges) has been designed by the European Union to facilitate legitimate trade with Tehran. It was introduced on January 31 by France, Germany and Britain, the three countries party to the 2015 nuclear deal.

It was introduced long after the U.S. imposed sanctions on Iran and threatened to punish any country or company that does business with Iran.

"This financial system was suggested too late and [it] operates at a low level. It has not been yet fully implemented," Sputnik quoted Araghchi as saying on Monday.

He also said that this system "will be successful if the Europeans buy oil from Iran, as Iran's main export to Europe is oil. If not, there will not be a large amount of money left for trade in accordance with this tool."

<https://www.tehrantimes.com/news/441906/Iran-says-INSTEX-has-not-been-fully-implemented>

IAEA confirms Iran is enriching uranium at Fordow

Tehran Times, November 11, 2019

The International Atomic Energy Agency confirmed on Monday that Iran has begun enriching uranium at the Fordow nuclear plant, according to Reuters.

Ali Akbar Salehi, the chief of the Atomic Energy Organization of Iran (AEOI), told AP on Monday that Iran is producing even more low-enriched uranium daily.

He attributed the rise to the work at Fordow.

The AEOI officially started injecting gas into 1,044 centrifuges at the underground Fordow nuclear site at the presence of inspectors from the IAEA

<https://www.tehrantimes.com/news/441910/IAEA-confirms-Iran-is-enriching-uranium-at-Fordow>

Salehi says Iran producing 5.5 kilograms of low-enriched uranium per day

Tehran Times, November 11, 2019

In an interview with AP published on Monday, he attributed the rise to the work at Fordow.

“I believe (that) in total, 5.5 kilograms is the daily volume of uranium enrichment in Natanz and Fordo,” he said, mentioning Iran’s other nuclear facility at Natanz, where over 5,000 centrifuges now spin.

Salehi suggested the figure could go as high at 6 kilograms (13 pounds) a day.

President Hassan Rouhani on November 5 ordered the AEOI to start injecting uranium gas into advanced IR-6 centrifuges at the Fordow nuclear enrichment facility as the fourth step to reduce nuclear commitments in response to the abandonment of the 2015 nuclear deal and imposition of the harshest ever sanctions in history against Iran.

<https://www.tehrantimes.com/news/441905/Salehi-says-Iran-producing-5-5-kilograms-of-low-enriched-uranium>

President says U.S. sanctions unable to bring Iranians to their knees

Tehran Times, November 11, 2019

Iranian President Hassan Rouhani laid emphasis on Monday on inefficiency of pressures on independent nations, reiterating that U.S.-imposed sanctions will never bring the proud Iranians to their knees.

Addressing a large crowd of people in the central city of Rafsanjan in Kerman province, the president said, “We will hang on against enemies with the entire might to defend our (Islamic) establishment.”

Under the 2015 nuclear accord, officially called the Joint Comprehensive Plan of Action (JCPOA), Iran agreed to put limits on its nuclear activities in exchange for termination of economic and financial sanctions. However, U.S. President Donald Trump abandoned the deal in 2018 and introduced the harshest ever sanctions in history against Iran. So far, the European Union trio - Germany, France, and Britain - which are signatory to the pact and the EU in large have not done anything tangible to shield Iran from sanctions.

<https://www.tehrantimes.com/news/441891/President-says-U-S-sanctions-unable-to-bring-Iranians-to-their>

IAEA report shows full access to Iranian nuclear facilities: envoy

Tehran Times, November 12, 2019

Kazem Gharibabadi, Iran’s ambassador and permanent representative to the Vienna-based international organizations, said on Monday that the Monday report by the International Atomic Energy Agency (IAEA) on Iran’s nuclear activities shows the UN body’s full access to Iran’s nuclear facilities.

“The recent report shows that the Agency continues to have full access in Iran, and despite the cessation of parts of its commitments under the JCPOA, which is aimed at striking a proportional balance between the rights and obligations of all sides, it is still able to verify not only the implementation of the commitments, but also cessation of parts of them,” Gharibabadi told reporters, according to IRNA.

<https://www.tehrantimes.com/news/441945/IAEA-report-shows-full-access-to-Iranian-nuclear-facilities>

Zarif expresses surprise over EU statement on Iran’s nuclear steps

Tehran Times, November 12, 2019

Foreign Minister Mohammad Javad Zarif late on Monday slammed the European

Union's statement on Iran which is reducing its commitments under the 2015 nuclear deal in response to the return of sanctions by the United States and inaction by the Europeans shield Iran from the sanctions effect.

Under the nuclear pact - formally known as the JCPOA - Iran is tasked to limit its nuclear activities in exchange for termination of economic and financial sanctions.

EU foreign policy chief Federica Mogherini and European parties to the deal - Britain, France and Germany - issued a statement on Monday urging Tehran to comply with the accord or face action which could include sanctions, Reuters reported.

<https://www.tehrantimes.com/news/441948/Zarif-expresses-surprise-over-EU-statement-on-Iran-s-nuclear>

U.S. does not dare to attack Iran: Araghchi

Tehran Times, November 12, 2019

Iranian Deputy Foreign Minister Abbas Araghchi has said that the United States does not dare to attack Iran, predicting that there will be no war in the region.

'Nuclear weapons have no place in Iran's defense doctrine'

Araghchi, who helped craft the 2015 nuclear deal (JCPOA) with the 5+1 group and the European Union, also said that nuclear weapons have no place in Iran's defense doctrine. "The Islamic Republic of Iran's nuclear policy is clear. Based on the fatwa of the Leader of the Islamic Revolution, it is illegitimate to use nuclear weapon and it has no place in our security ideology. Iran is committed to all of its responsibilities and duties," he said.

<https://www.tehrantimes.com/news/441950/U-S-does-not-dare-to-attack-Iran-Araghchi>

France seeking a formula to remove Iran sanctions barrier: envoy

Tehran Times, November 13, 2019

French Ambassador to Tehran Philippe Thiebaud said his country is seeking a

formula to remove the barriers created by the U.S. sanctions in the way of trade with Iran, portal of Iran Chamber of Commerce, Industries, Mines and Agriculture (ICCIMA) reported.

"France is still trying to make INSTEX [The Instrument in Support of Trade Exchanges] operational," Thiebaud said in a meeting with the ICCIMA Head Gholam-Hossein Shafeie at the place of ICCIMA on Tuesday.

"The relationship between Iran and France has historically been far beyond commercial relations," the French envoy said, insisting that companies and chambers of commerce in the two countries should work together to strengthen economic relations.

<https://www.tehrantimes.com/news/441980/France-seeking-a-formula-to-remove-Iran-sanctions-barrier-envoy>

MP says Iran's fourth nuclear step is a 'serious warning'

Tehran Times, November 13, 2019

MP Ghassem Jassemi has said that Iran's fourth step in reducing commitments under the 2015 nuclear deal, formally known as the JCPOA, is a "serious warning" to the United States and Europe.

"President [Hassan Rouhani] announced the fourth step in reducing nuclear commitments in the past few days. This step was a serious warning to the United States and the Europeans and we proved our righteousness in the JCPOA and the fact that we negotiate to reach win-win deal. However, the other side did not fulfil its commitments," Jassemi told ISNA in an interview published on Wednesday.

He noted that Iran will reverse its decision if the remaining signatories fulfil their commitments. Rouhani on November 5 ordered the Atomic Energy Organization of Iran (AEOI) to start injecting uranium gas into advanced IR-6 centrifuges at the Fordow nuclear enrichment facility.

<https://www.tehrantimes.com/news/441972/MP-says-Iran-s-fourth-nuclear-step-is-a-serious-warning>

Zarif: If Iran cannot reap JCPOA benefits others will suffer too

Tehran Times, November 13, 2019

Iranian Foreign Minister Mohammad Javad Zarif announced in the Astana Club meeting on Tuesday that if Iran cannot reap the economic benefits of the Joint Comprehensive Plan of Action (JCPOA) definitely the other sides will suffer too.

Under the JCPOA, commonly called the Iran nuclear deal, Iran was tasked to limit its nuclear program in exchange for termination of economic and financial sanctions.

Addressing the participants, Zarif elaborated on Tehran's logical reason to reduce its obligations under the JCPOA in response to the return of sanctions and a failure by the European Union to shield Iran from sanctions effect.

The U.S. not only abandoned the JCPOA and returned sanctions, it also added new harsh ones, including a total ban on Iran's oil export.

<https://www.tehrantimes.com/news/441984/Zarif-If-Iran-cannot-reap-JCPOA-benefits-others-will-suffer>

Salehi says Iran able to add 20,000 SWUs in a month

Tehran Times, November 15, 2019

Ali Akbar Salehi, director of the Atomic Energy Organization of Iran (AEOI), said on Thursday that his organization can add 20,000 SWUs (Separative Work Unit) in a month to increase its nuclear enrichment capacity. Iran has started to gradually reduce its commitments to the 2015 nuclear deal in response to the U.S. which abandoned the landmark deal in May 2018 and reinstated sanctions.

So far, the AEOI has taken four steps to cut back commitments in accordance to paragraph 36 of the JCPOA which "allows one side, under certain circumstances, to stop complying with the deal if the other side is out of compliance." Talking on the radio, Salehi said Iran had about 6,000 operational

SWUs but it has added 3,000 in a short time.

<https://www.tehrantimes.com/news/442034/Salehi-says-Iran-able-to-add-20-000-SWUs-in-a-month>

Iran holds exhibition on new nuclear achievements

Tehran Times, November 15, 2019

The Atomic Energy Organization of Iran (AEOI) plans to open an exhibition on Saturday, November 16, on new nuclear achievements in the central city of Saveh.

The exhibition, hosted by the Saveh energy institute, will last till November 20.

The event is intended to display nuclear industry's peripheral applications including in medical and agricultural fields.

Making the public opinion aware of the privileges of indigenized knowledge of nuclear industry, rapid comprehensive access of academicians to a summary of the latest achievements of the country in nuclear industry, removing any ambiguity in the country's nuclear activities from safety and environmental point of views, strengthening self-confidence and national pride are among objectives of the exhibition.

<https://www.tehrantimes.com/news/442023/Iran-holds-exhibition-on-new-nuclear-achievements>

H. Saudi Arabia

Saudi Arabia calls on Iran to fully cooperate with IAEA

Saudi Gazette, November 8, 2019

Saudi Arabia has affirmed its support and appreciation for the efforts of the International Atomic Energy Agency (IAEA), and its inspectors' professionalism and high level of transparency.

Prince Abdullah Bin Khalid Bin Sultan, ambassador to Austria and the Kingdom's permanent representative to the United Nations and International Organizations

in Vienna, made these statements during the special session of the IAEA Board of Governors on Thursday.

The session was held Thursday concerning the Implementation of the Safeguards Agreement under the Non-Proliferation Treaty and the Additional Protocol in Iran.

He indicated that the deputy director general's briefing on Iran dealt with its delay in providing adequate information consistent with the results of testing samples taken by the IAEA from an undisclosed site where nuclear materials were detected and this site has been cleared before being visited by the IAEA inspectors without providing any logical explanations identical to the analysis and testing of the samples during the last 11 months.

<http://saudigazette.com.sa/article/582026/SAUDI-ARABIA/Saudi-Arabia-calls-on-Iran-to-fully-cooperate-with-IAEA>

East Asia

I. North Korea

N.Korea conducted successful test of multiple rocket launchers on Thursday -KCNA

Reuters, November 1, 2019

North Korea conducted another test of super-large multiple rocket launchers successfully on Thursday afternoon, state news agency KCNA said on Friday.

The success of the tests was immediately reported, and North Korean leader Kim Jong Un "expressed satisfaction" and congratulated the scientists who had developed the weapon.

Thursday's test verified the "continuous fire system" of the multiple rocket launchers is able to "totally destroy" a group target of the enemy by a surprise strike, KCNA added. (Reporting by Joyce Lee Editing by Chris Reese)

<https://in.reuters.com/article/northkorea-missiles/n-korea-conducted-successful-test-of-multiple-rocket-launchers-on-thursday-kcna-idINS6N23A012>

North Korea says 'window of opportunity closing' for outcome of talks with U.S

Reuters, November 8, 2019

A North Korean diplomat said on Friday the window of opportunity for progress in dialogue with the United States was getting smaller, adding that Pyongyang expects reciprocal steps from Washington by the end of the year.

"We've given the United States quite a lot of time and we're waiting for an answer by the end of this year, of some kind of result. ... But I must say that the window of opportunity closes every day," said Jo Chol Su, the head of the North Korean foreign ministry's North American department.

Jo, who spoke at the Moscow Non-proliferation Conference, said Pyongyang was ready to hold talks with the United States if there was the prospect of progress, but was not interested in dialogue that would yield no results, Russia's Interfax news agency reported.

<https://in.reuters.com/article/uk-russia-nuclear-northkorea-usa/north-korea-says-window-of-opportunity-closing-for-outcome-of-talks-with-u-s-idINKBN1X122Z>

North Korea warns of retaliation against U.S-South Korea military drills

Reuters, November 13, 2019

North Korea threatened on Wednesday to retaliate if the United States goes ahead with scheduled military drills with South Korea, ramping up pressure on Washington to change course as a year-end North Korean deadline for U.S. flexibility approaches.

The statement came even though Washington said last week that the joint aerial exercise planned for next month would be reduced in scope from previous drills.

"It is self-defence rights" to retaliate against any move which threatens its

sovereignty and security, according to a statement from the State Affairs Commission, without elaborating.

<https://in.reuters.com/article/northkorea-usa/north-korea-warns-of-retaliation-against-u-s-south-korea-military-drills-idINKBN1XN1QR>

Pentagon chief open to military adjustments to support N.Korea diplomacy

Reuters, November 14, 2019

U.S. Defense Secretary Mark Esper said on Wednesday he was open to new alterations in U.S. military activity on the Korean peninsula if it helped enable diplomats, who are trying to jump-start stalled peace efforts with North Korea.

"I think we have to be open to all those things that empower and enable our diplomats to sit down with the North Koreans, alongside with our South Korean partners, and move the ball forward to a negotiated settlement of the issues that we put on the table," Esper told a small group of reporters as he traveled to South Korea.

Esper spoke after North Korea threatened to retaliate if the United States goes ahead with scheduled military drills with South Korea. (Reporting by Phil Stewart Editing by Mary Milliken and Chizu Nomiya)

<https://in.reuters.com/article/usa-northkorea-pentagon/pentagon-chief-open-to-military-adjustments-to-support-n-korea-diplomacy-idINL2N27T1DJ>

North Korea rebuffs U.S. offer of December talks, urges halt in military drills

Hyonhee Shin, Joyce Lee, Reuters, November 14, 2019

North Korea said on Thursday it had turned down a U.S. offer for fresh talks, saying it was not interested in more talks merely aimed at "appeasing us" ahead of a year-end deadline Pyongyang has set for Washington to show more flexibility in negotiations.

Kim Myong Gil, North Korea's nuclear negotiator, said in a statement carried by the

country's official KCNA news agency that Stephen Biegun, his U.S. counterpart who jointly led last month's failed denuclearisation talks in Stockholm, had offered through a third country to meet again.

Kim and Biegun met last month in the Swedish capital for the first time since U.S. President Donald Trump and North Korean leader Kim Jong Un agreed in June to re-open negotiations that have been stalled since a failed summit in Vietnam in February.

<https://in.reuters.com/article/southkorea-usa/north-korea-rebuffs-u-s-offer-of-december-talks-urges-halt-in-military-drills-idINKBN1XO0JU>

North Korea nuclear test equivalent to '17 times the size' of Hiroshima

Chris Ciaccia, Fox News, November 15, 2019

The North Korea nuclear test in early September 2017 was so powerful that it resulted in an entire mountain being lifted off the ground and was the equivalent of "17 times the size of the bomb dropped on Hiroshima," according to a new study.

The research, published in the scientific journal *Geophysical Journal International*, also notes that the weapons test caused Mt. Mantap to be displaced by 1.7 feet, in addition to lifting it upward by several feet.

<https://www.foxnews.com/science/north-korea-nuclear-test-equivalent-to-hiroshima>

J. South Korea

North Korea, U.S. could resume talks in mid-November - South Korean MP

Hyonhee Shin, Reuters, November 4, 2019

North Korea and the United States could hold another round of working-level talks as soon as mid-November to expedite progress before a year-end deadline set by the North, a member of South Korea's parliament said on Monday.

North Korean and U.S. officials met last month in Stockholm, for the first time since U.S. President Donald Trump and North Korean leader Kim Jong Un agreed in June to reopen denuclearisation talks that stalled after a failed summit in Vietnam in February.

Both sides are expected to meet again no later than early December to get the negotiations going before a year-end deadline set by Kim, South Korean lawmaker Lee Eun-jae said after attending a briefing by the National Intelligence Service (NIS).

<https://in.reuters.com/article/uk-northkorea-usa-southkorea/north-korea-u-s-could-resume-talks-in-mid-november-south-korean-mp-idINKBN1XE0RR>

Moon-Abe meeting 'encouraging' for Seoul-Tokyo ties - senior U.S. diplomat

Hyonhee Shin, Reuters, November 6, 2019

The United States was very encouraged by a recent meeting between the leaders of South Korea and Japan, a senior U.S. diplomat said on Wednesday, amid heightened tensions that could undercut three-way security cooperation on North Korea.

U.S. Assistant Secretary of State David Stilwell arrived in Seoul on Tuesday at a time when relations between South Korea and Japan, both important U.S. allies, have sunk to their worst state in decades after South Korea's top court ordered Japanese firms to compensate wartime forced labourers.

But South Korean President Moon Jae-in and Japanese Prime Minister Shinzo Abe had an 11-minute conversation on the sidelines of an international conference on Monday also attended by U.S. officials in Bangkok. It was the first time they had met in more than a year.

<https://in.reuters.com/article/uk-northkorea-usa-southkorea/moon-abe-meeting-encouraging-for-seoul-tokyo-ties-senior-u-s-diplomat-idINKBN1XG0BX>

United States 'very actively' asking North Korea to return to talks - South Korea

Reuters, November 10, 2019

The United States is "very actively" trying to persuade North Korea to come back to negotiations, South Korea's national security adviser said on Sunday, as a year-end North Korean deadline for U.S. flexibility approaches.

South Korea was taking North Korea's deadline "very seriously", the adviser, Chung Eui-yong, told reporters, at a time when efforts to improve inter-Korean relations have stalled.

North Korean leader Kim Jong Un in April gave the United States a year-end deadline to show more flexibility in their denuclearisation talks, and North Korean officials have warned the United States not to ignore that date.

<https://in.reuters.com/article/uk-northkorea-usa-southkorea/united-states-very-actively-asking-north-korea-to-return-to-talks-south-korea-idINKBN1XK045>

South Korea, U.S. defence chiefs reaffirm commitment to defend against North Korea

Reuters, November 15, 2019

The defence chiefs of South Korea and the United States reaffirmed on Friday U.S. commitment for the defence of South Korea against North Korea and efforts to denuclearise the North, the South's Defence Minister Jeong Kyeong-doo said.

Jeong said he and U.S. Defence Secretary Mark Esper shared the view that a cost-sharing pact for U.S. troops stationed in South Korea, which is now being negotiated, should be fair and mutually agreeable.

<https://in.reuters.com/article/southkorea-usa/south-korea-u-s-defence-chiefs-reaffirm-commitment-to-defend-against-north-korea-idINKBN1XP0EQ>

K. Japan

N. Korea calls Abe an 'idiot' over criticism of weapons test

Kim Tong-hyung, AP News, November 7, 2019

North Korea on Thursday called Japanese Prime Minister Shinzo Abe an "idiot" after he criticized a recent weapons test by the North. In a statement attributed to a foreign ministry official, Song Il Ho, North Korea described Abe as an "idiot and villain" who was overreacting to what the North described as a test-firing of rocket artillery last week "as if a nuclear bomb was dropped on the land of Japan."

The statement ridiculed Abe's expressed willingness to meet North Korean leader Kim Jong Un, saying he would be "well-advised not to dream forever of crossing the threshold of Pyongyang," North Korea's capital, after insulting the North's "just measures" for self-defense.

<https://apnews.com/cbad4a6c991d4269a36de8b79678a1b9>

Japan stages drill for nuclear accident scenario

NHK Newslines, November 9, 2019

Japanese ministers and government officials have taken part in a drill simulating an accident at a nuclear power plant caused by a massive earthquake. Prime Minister Shinzo Abe and some of his ministers gathered at his office on Saturday for the exercise, which was based on a scenario involving the No. 2 reactor at the Shimane nuclear power plant in western Japan. The simulation hypothesized that the reactor had lost its cooling functions after the quake cut access to external power sources.

Abe declared a state of emergency and urged people living near the plant to calmly evacuate or take shelter in buildings. The ministers then held a video conference with officials from municipalities around the plant. Abe instructed them to prioritize the safety of residents and quickly bring the situation under control. He also instructed them to cooperate closely with other

relevant officials so that they could adapt quickly to changing circumstances.

https://www3.nhk.or.jp/nhkworld/en/news/20191109_12/

Fukushima reinvents itself with a \$2.7 billion bet on renewables

The Verge, November 12, 2019

The site of the most recent high-profile nuclear disaster is reinventing itself as a renewable energy leader in Japan. Land that became too toxic for people to farm and live on after the 2011 meltdown at the Fukushima Dai-ichi Nuclear Power Station will soon be dotted with windmills and solar panels.

By 2024, 11 solar and 10 wind power plants on abandoned land in Fukushima Prefecture will generate 600 megawatts, which is roughly two-thirds of the energy output of a typical nuclear plant, Nikkei Asian Review and Yale Environment 360 reported. It's still far less power than the nearly 4,700 megawatts its nuclear reactors were capable of generating before. But a 2017 prefecture survey found that 54 percent of residents wanted renewable energy, compared to 14 percent who didn't, according to The Japan Times. The shift is beginning to take shape, thanks to \$2.75 billion in financing from groups including the Development Bank of Japan (which is government-owned) and Mizuho Bank (privately owned). A new power grid will connect to the Tokyo Electric Power Company's transmission lines, which will transfer energy to Japan's capital city, a three- to four-hour drive away.

<https://www.theverge.com/2019/11/12/20961827/fukushima-japan-renewable-energy-nuclear>

Japan wants 'sensible response' from South Korea over intelligence pact

Reuters, November 15, 2019

A senior Japanese diplomat on Friday asked his South Korean counterpart for a "sensible response" regarding Seoul's

decision not to renew an intelligence sharing pact, known as GSOMIA, with the agreement expiring in a week. South Korea in August decided not to renew GSOMIA, a pact that is intended to help Japan and South Korea share information on North Korea's missile and nuclear activity.

"In light of the current security environment, (the Japanese side) asked for a sensible response from South Korea," a Japanese foreign ministry official told reporters following a meeting between Shigeki Takizaki, director-general of the Japanese Foreign Ministry's Asian and Oceania Affairs Bureau, and Kim Jung-han, director-general for Asian and Pacific Affairs at South Korea's foreign ministry.

<https://www.reuters.com/article/us-japan-southkorea/japan-wants-sensible-response-from-south-korea-over-intelligence-pact-idUSKBN1XPOAV?feedType=RSS&feedName=worldNews>

L. Misc

The New Space Race Is On, and Russia Is Winning

Andy Keiser, National Interest Blog, November 2, 2019

From the Arctic to Afghanistan, Vladimir Putin's Russia is a clear threat to U.S. national-security interests. At every turn, Russia enjoys being a foil to the United States. In recent years, the list of Moscow's aggressive actions that counter U.S. interests have included: invading and occupying portions of Georgia and Ukraine; meddling in U.S., German, French, British and other elections; shooting down Malaysian Air Flight 17; poisoning dissidents on UK soil; conducting dangerous and threatening military maneuvers at sea and in the skies; and bolstering dictators Bashar al Assad in Syria and Nicolas Maduro in Venezuela, to name a few.

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<https://nationalinterest.org/feature/new-space-race-and-russia-winning-93211>

Nuclear Submarine Game Changer: New Countries To Go Atomic

H Sutton, Forbes, November 3, 2019

Today the number of countries operating nuclear-powered submarines is the same as it was 30 years ago at the end of the Cold War. That looks set to change.

On Jan. 17, 1955, the captain of USS Nautilus reported, "Underway on nuclear power," ushering in a new era of submarine warfare. In fact it was such a game changer that it reset naval warfare generally. Nuclear-powered submarines were faster, did not need to surface during a mission and could run until their crew's stores run out.

Yet despite the disruptive nature of nuclear-powered submarines, few navies could follow the U.S. Navy into this new era. Russia, Britain, France and China built them, and India joined the ranks in the late 1980s by leasing a Russian boat.

<https://www.forbes.com/sites/hisutton/2019/11/03/nuclear-submarine-game-changer-new-countries-to-go-atomic/#7f1e7a4c1d74>

Is nuclear non-proliferation still a realistic goal?

Aljazeera, November 9, 2019

Delegates from more than 40 countries are in Russia, as concerns grow about the threat of nuclear war.

Russia's foreign minister opened the conference in Moscow by saying Iran's latest move does not pose a threat to non-

proliferation.

There are an estimated 14,500 nuclear weapons around the world, in the hands of nine countries.

Five have signed on to the United Nations' non-proliferation treaty - the US, United Kingdom, France, Russia and China.

The others - India, Pakistan, Israel and North Korea - are not restricted by the pact, which is meant to limit the spread of nuclear weapons.

<https://www.aljazeera.com/programmes/insidestory/2019/11/nuclear-proliferation-realistic-goal-191109090732224.html>

M. Op-Ed

India

Lessons from the cyberattack on India's largest nuclear power plant

Alexander Campbell and Vickram Singh, Bulletin of Atomic Science, November 14, 2019

Indian officials acknowledged on October 30th that a cyberattack occurred at the country's Kudankulam nuclear power plant. An Indian private cybersecurity researcher had tweeted about the breach three days earlier, prompting Indian authorities to initially deny that it had occurred before admitting that the intrusion had been discovered in early September and that efforts were underway to respond to it.

While reactor operations at Kudankulam were reportedly unaffected, this incident should serve as yet another wake-up call that the nuclear power industry needs to take cybersecurity more seriously. There are worrying indications that it currently does not: A 2015 report by the British think tank Chatham House found pervasive shortcomings in the nuclear power industry's approach to cybersecurity, from regulation to training to user behavior. In general, nuclear power plant operators have failed to broaden their cultures of safety and security to include an awareness of cyberthreats. (And by cultures of safety and security, those in the field – such as the Fissile

Materials Working Group—refer to a broad, all-embracing approach towards nuclear security, that takes into account the human factor and encompasses programs on personnel reliability and training, illicit trafficking interception, customs and border security, export control, and IT security, to name just a few items. The Hague Communiqué of 2014 listed nuclear security culture as the first of its three pillars of nuclear security, the other two being physical protection and materials accounting.)

<https://thebulletin.org/2019/11/lessons-from-the-cyberattack-on-indias-largest-nuclear-power-plant/>

China

China's Nuclear Missile Submarines: A Threat to America?

David Axe National Interest, November 5, 2019

An effective Chinese ballistic-missile submarine fleet over the long term could have a stabilizing influence on the world's nuclear balance. But in the short term, it might heighten tensions. Especially if Beijing lets popular fervor drive its build-up. Key Point: A reliable fleet of nuclear subs could mean less land-based nuclear missiles and an overall decline of China's nuclear arsenal. But they'd also be more deadly. China for decades has struggled to develop nuclear ballistic-missile submarines. The country finally might be on the cusp of deploying reliable boomers. An effective Chinese ballistic-missile submarine fleet over the long term could have a stabilizing influence on the world's nuclear balance. But in the short term, it might heighten tensions. Especially if Beijing lets popular fervor drive its build-up.

That's the surprising conclusion of a new report from Tong Zhao, a fellow in the Nuclear Policy Program at the Carnegie Endowment for International Peace, based at the Carnegie-Tsinghua Center for Global Policy in Beijing. "A fleet of survivable nuclear ballistic missile submarines (SSBNs) would reduce China's

concerns about the credibility of its nuclear deterrent and lessen the country's incentives to further expand its arsenal," Tong writes.

<https://nationalinterest.org/blog/buzz/why-does-russia-appear-be-helping-china-build-nuclear-aircraft-carrier-93896>

China's nuclear developments reflect its growing ambition

Peter Huessy and Bradley A. Thayer, The Hill, November 7, 2019

Discerning China's ambition in the international arena is difficult because there are few empirical clues. Publicly available evidence is often alarming – particularly in the nuclear realm, given considerable advances in the Chinese nuclear arsenal. The People's Republic of China (PRC) has made improvements in the capability of its nuclear arsenal and in its growing strategic and intermediate nuclear systems.

Lt. Gen. Robert Ashley, director of the Defense Intelligence Agency (DIA), has termed the recent growth of China's nuclear weapons "the most rapid expansion and diversification of its nuclear arsenal in China's history." This was echoed by Adm. David Kriete, the deputy commander of U.S. Strategic Command, who stated, "China is, and has been for the last couple of decades, on a very clear trajectory where they're increasing the numbers of nuclear weapons that they field, they're increasing the number and diversity of the delivery systems," and will be "expanding its nuclear weapons production capabilities."

<https://thehill.com/opinion/national-security/468972-chinas-nuclear-developments-reflect-its-growing-ambition>

US and China racing to weaponize AI

Bill Gertz Asia Times, November 7, 2019

The Pentagon is racing to outpace China in building military artificial intelligence (AI) systems ranging from vehicle maintenance to advanced warfighting tools like cyber weapons and drones, according to US Defense Secretary Mark Esper. "Whichever

nation harnesses AI first will have a decisive advantage on the battlefield for many, many years," Esper said this week at a conference in Washington on artificial intelligence. "We have to get there first. Future wars will be fought not just on the land and in the sea as they have for thousands of years, or in the air as they have for the past century, but also in outer space and cyberspace in unprecedented ways." China, according to Esper, intends to be the world leader in AI by 2030 and Chinese President Xi Jinping has stated that China must occupy "the high ground in critical and core AI technologies."

China's goal, he said, is to leapfrog US development of AI systems and weapons. One area China is seeking a strategic advantage is in AI-powered autonomous vehicles. "The Chinese People's Liberation Army is moving aggressively to deploy them across many warfighting domains," Esper said. Additionally, in addition to conventional weapons systems, China is building low-cost, long-range autonomous and unmanned submarines to counter US naval power. And Beijing is also exporting advanced military drones to the Middle East, including radar-evading stealth drones. More worrisome, the defense chief said the Chinese weapons makers are selling drones capable of conducting autonomous lethal attacks – drones that will sense and decide whether to conduct strikes without human intervention.

<https://www.asiatimes.com/2019/11/article/us-and-china-racing-to-weaponize-ai/>

Chinese scientists leading new frontier

Zhang Zhihao China Daily, November 7, 2019

Chinese scientists have played a major role in pushing forward the frontier of science in the past few decades, from discovering new fundamental particles to probing the deep sea. Unsurprisingly, the global scientific communities hope China can continue contributing to humanity's treasure trove of knowledge and help mankind achieve a sustainable future,

scientists said on Thursday. The Chinese Academy of Sciences recently celebrated its 70th anniversary on Nov 1. Bai Chunli, president of the CAS said during the International Conference on Frontier Sciences in Beijing on Thursday that science and technology has been the key driving force for human progress.

“The world is entering a new age in scientific and technological revolution, characterized by the advent of artificial intelligence, virtual reality, quantum communication and computing, as well as other cutting-edge fields,” he said. “At the same time, humanity is facing climate change, pollution, resource shortages, uneven socioeconomic development, diseases and other major challenges,” Bai said. “This will require the international scientific communities to strengthen cooperation and jointly meet these challenges.” Over the past 70 years, CAS has made numerous great achievements, and “we could not have done this without collaboration with fellow top scientists and institutions around the world,” he said.

<https://www.chinadaily.com.cn/a/201911/07/WS5dc3df20a310cf3e355760bf.html>

China, US in battle for space supremacy

Dave Makichuk Asia Times, November 11, 2019

Is it all just a game of Go? In the China Sea and outer space? One top US general thinks so. America’s top man for assessing military capabilities of foreign powers believes China is playing a game in space in its efforts to become the premier power in space, Nathan Strout of C4ISRNET online reports. Go is a board game invented in China thousands of years ago where players strategically place stones on a board to capture the most territory. “The object of Go is to block and deny territory to your opponent. Unlike chess, you’re not going after a king or a queen and there’s not a final move where you’re declared victor. You add up points on the board based on the amount of territory or space that you control. Think of that in the context of aerial denial and aerial defense,” said Defense Intelligence Agency Director

Lt. Gen. Robert Ashley at the CyberSat19 conference. Looking to the South China Sea, where China has built artificial islands to further its claims to the area, Ashley said he saw a direct connection between the ancient board game and China’s modern military strategy, the report said.

China has also built up its own space capabilities, and Ashley noted that China will boast the largest GPS-like system in space by 2020, the report said. “I’ve painted a rather negative picture of things that are evolving,” said Ashley. “It will take vigilance and determination to preserve space as a peaceful domain.”

<https://www.asiatimes.com/2019/11/article/china-us-in-battle-for-space-supremacy/>

Why China is a role model for the world

Misbahul Ferdous China Daily, November 11, 2019

China is the number one country in the world for economic power according to the latest International Monetary Fund (IMF) survey report. As an economic power, China has amazed the world for the past few decades and will continue its prosperity, making contributions to the country as well as the world. China’s strong planning for development, economic growth, health, social security, and the Belt and Road Initiative projects made one of the greatest examples for developing countries. Find out why China is overwhelming for eight reasons. China is the first country to launch a spacecraft on the far side of the moon, which has never been seen from Earth. China’s fourth moon probe, the Chang’e-4 lander, which arrived on the far side of the moon on Jan. 2, 2019, is currently creating a great deal of excitement. It is the first spacecraft to ever land on the moon’s space-facing hemisphere. The robot touched down at 177.6 degrees east longitude and 45.5 degrees south in the Von Kármán crater, according to an announcement from the China National Space Administration.

This is considered a great achievement for China's space program. China launched its space station program in 2011. That year, they launched a station called Tiangong-one. Tiangong means the palace of heaven. China succeeded in destroying a satellite orbiting a spacecraft in space in 2007. Before them, only the United States and Russia had that capability. The privacy and security of information are very important in cyberspace. In this regard, China achieved great success in 2016.

<https://www.chinadaily.com.cn/a/201911/11/WS5dc8f41ea310cf3e3557698f.html>

China's New Aircraft Carriers Are a Really Big Deal

Mark Episkopos National Interest, November 11, 2019

The United States must be prepared to face a much more advanced and capable Chinese navy. China is forging ahead with the construction of its third aircraft carrier in under a decade, highlighting the scale of Beijing's maritime ambitions. A series of satellite images from the Jiangnan shipyard, recently published by a China-focused think tank, shed light on the ongoing construction of China's Type 002 carrier. The images reveal a typical military vessel construction site, replete with a floodable basin and multiple sluice gates. While the haziness of the photos makes it difficult to discern the carrier's dimensions, the hull appears to measure forty meters in

width by forty-eight meters in length. If prior reports are accurate, Type 002 will be larger and much heavier than its predecessors at a displacement of up to eighty-five thousand tons versus the sixty thousand to seventy thousand tons. The carrier is widely expected to feature a conventional propulsion system, though other technical details remain scant.

Perhaps the most striking aspect of the Type 002's development is the breakneck speed at which it is being produced and transferred to the People's Liberation Army Navy (PLAN), with its commission set for 2022. Type 002's most recent predecessor, Type

001A, was laid down in 2013 and is still undergoing sea trials. Even China's oldest aircraft carrier, the Type 001 Liaoning, was only declared battle-ready as late as 2016, on the heels of a tortured acquisition and retrofit process. Furthermore, the Chinese navy is reportedly already laying plans for Type 002's successor: the nuclear-powered Type 003. As military commentator Song Zhongping told the South China Morning Post, Type 002 may be the last one of its kind: "The Type 002 – a conventionally powered carrier with an EMALS-like system – may become the only one of that kind of aircraft carrier, because China will next build multiple nuclear-powered aircraft battle platforms."

<https://nationalinterest.org/blog/buzz/chinas-new-aircraft-carriers-are-really-big-deal-94166>

Will hypersonic DF-17 missile transform Beijing's Taiwan strategy?

Minnie Chan South China Morning Post, November 16, 2019

China's DF-17 hypersonic boost-glide missile may be powerful enough to penetrate US missile shields in the region, transforming Beijing's previously defensive strategy of containing independence-leaning forces in the Taiwan Strait. Zhou Chenming, a Beijing-based military expert, said the DF-17 missile had extended China's range from the Taiwan Strait to the US military base in Yokosuka, Japan. While the primary aim was to deter an independence movement taking hold in the self-ruled island, China was now in a position to prevent a possible intervention by the US aircraft carrier strike group, should Beijing decide to take back the island by force.

<https://www.scmp.com/news/china/military/article/3037972/will-hypersonic-df-17-missile-transform-beijings-taiwan>

Pakistan

Pakistan is expanding its nuclear facility, satellite images of the last 9 months show

Abhijit Iyer-Mitra, The Print, November 15, 2019

The north compound of the Dera Ghazi Khan nuclear facility in Pakistan's Punjab province has shown a rapid expansion of capability, increased defences and possible new construction, all within the space of just nine months. This facility falls outside the nuclear Non-Proliferation Treaty safeguards and is believed to be a military installation supplying to Pakistan's nuclear weapons programme. Specifically, the north compound is believed to be a uranium dioxide conversion and uranium hexafluoride (UF₆) production facility. It receives naturally occurring uranium from nearby Baghalchur mines and converts them into uranium dioxide, and then into fuel rods for reactors, which can produce weaponisable isotopes.

Pakistan keeps insisting that the Dera Ghazi Khan (DGK) nuclear facility is not operational, as pointed out by the James Martin Centre for Nonproliferation Studies (CNS) last year and the Institute for Science in International Security in 2009. But the evidence is to the contrary. This facility is in a high-terror zone and local politicians say it has been attacked by "freedom fighters" in the past. The 2018 CNS report had indicated an expansion of the southern compound, and we are now witnessing a significant increase in both output and some added defences and new construction of the northern compound.

<https://theprint.in/opinion/pakistan-is-expanding-its-nuclear-facility-satellite-images-of-the-last-9-months-show/321143/>

USA

Don't Let the New START Treaty Lapse

Rose Gottemoeller, The New York Times, November 8, 2019

The New START Treaty, the last and most important nuclear arms limitation

agreement still in force between Russia and the United States, expires early in 2021. Perhaps it can be extended. But it has long been criticized by the Trump administration, on two points: The treaty does not limit new nuclear weapons systems that the Russians are threatening to use against us; and it does not include the Chinese, who are busily modernizing their nuclear arsenal.

At the same time, we should recognize the benefits the New START Treaty brings to American national security. During the coming decade, the United States will be modernizing its nuclear forces. If the treaty is extended until 2026, it will continue to cap Russian deployed warheads at 1,550 and delivery systems — missiles and bombers — at 700, giving the United States a stable environment in which to modernize.

<https://www.nytimes.com/2019/11/08/opinion/dont-let-the-new-start-treaty-lapse.html>

Russia

Throughout The Cold War, These Russian Super Weapons Kept American War Planners Awake At Night

Kyle Mizokami, National Interest Blog, November 4, 2019

The Soviet Union was one of the most powerful collections of states that ever existed. Born in the Russian Civil War, the Soviet Union boasted one of the strongest armies on Earth.

It was a repressive regime that killed millions of its own citizens and saw itself as surrounded by ideologically incompatible and hostile states. It maintained a large standing army ostensibly for defensive purposes, but that did not stop it from invading neighboring Poland, Latvia, Lithuania, Estonia and Finland.

The Soviet Union placed a premium on science, technology and industrial production. As a result, the USSR fielded some of the most advanced weapons of

its time, in large numbers, with millions continuing to serve today.

<https://nationalinterest.org/blog/buzz/throughout-cold-war-these-russian-super-weapons-kept-american-war-planners-awake-night>

Why Does Russia Appear to Be Helping China Build a Nuclear Aircraft Carrier?

Robert Farley, National Interest Blog, November 5, 2019

It appears that China is relying on Russian know-how and experience to develop the reactor for its first nuclear aircraft carrier. China appears to be studying the nuclear reactors on Russia's largest icebreakers, an approach that the Soviet Union also took when it planned to build nuclear carriers in the 1980s. Specifically, Russia has invited China to bid on the construction of a new class of nuclear icebreaker, necessarily requiring the development of surface-ship based reactors. This approach stands in contrast to how the United States and France developed nuclear reactors for their largest carriers, but probably represents the best choice for China at this point.

<https://nationalinterest.org/blog/buzz/why-does-russia-appear-be-helping-china-build-nuclear-aircraft-carrier-93896>

Russia Is Preparing To Deploy Its Nuclear Doomsday Drones On Submarines

Mark Episkopos, National Interest Blog, November 7, 2019

The Russian Navy is on track to deploy up to 32 of its "Poseidon" thermonuclear drones across four submarines, according to Russian state media.

Two Poseidon-carrying submarines are expected to enter service with the Northern Fleet and the other two will join the Pacific Fleet. Each of the submarines will carry a maximum of eight drones and, therefore, the total number of Poseidons on combat duty may reach 32 vehicles.

Poseidon is an underwater drone weapon, armed with a 2-megaton nuclear or

conventional payload that can be detonated "thousands of feet" below the surface. This is meant to generate a radioactive tsunami capable of destroying coastal cities and other infrastructure several kilometers inland.

<https://nationalinterest.org/blog/buzz/russia-preparing-deploy-its-nuclear-doomsday-drones-submarines-94151>

Russia's Borei-Class Nuclear Submarines Are Powerful, But Have One Huge Flaw

Mark Episkopos, National Interest Blog, November 7, 2019

Russia's fourth-generation Borei-class was conceived in the early 1980's as a great leap forward in Russian submarine technology; a new, modern design over its aging Delta and Typhoon predecessors. Armed with nuclear-capable Bulava missiles, the Borei line was meant to guarantee the submarine component of Russia's nuclear triad for decades to come.

Whereas many other Russian modernization efforts involve iterative updates to Soviet-era weapons, the Borei class – or Project 955 – represents an entirely new design concept. In fact, the Russian Navy entertained but eventually cancelled its Typhoon modernization project due to cost concerns.

On the surface, Borei vessels appear remarkably cost-effective. After all, the older but similarly-performing U.S. Ohio-class submarines cost two billion dollars per unit as opposed to 890 million dollars per Borei vessel. But the challenge is that even these vastly reduced costs are hard to sustain because Russia is working on several large, concurrent projects within a much smaller defense budget.

At its core, the Borei line successfully performs a vital role in the Russian nuclear triad. But it remains to be seen how, or if, the Russian Ministry of Defense plans to consolidate the Borei project to make it financially solvent over the long term.

<https://nationalinterest.org/blog/buzz/russias-borei-class-nuclear-submarines-are-powerful-have-one-huge-flaw-94146>

100-Megatons of Doom: How Big of a Threat Is Russia's Status-6 "Poseidon" Nuclear Torpedo?

Michael Peck, National Interest Blog, November 10, 2019

How do you stop a nuclear-powered torpedo designed to bury enemy cities under a tsunami?

Russia's Status-6 "Poseidon" torpedo has excited the fears – or the overactive imaginations – of Russia's enemies. Calling it is a torpedo is a misnomer. While the precise capabilities of the weapon are mysterious, it appears to be about 80 feet long – which makes it more like a mini-submarine or an underwater ballistic missile. Poseidon is propelled by a nuclear reactor to a speed of 115 miles per hour and operates at deep depths up to 3,300 feet. It is armed with a massive 100-megaton warhead powerful enough to generate a giant tidal wave to destroy coastal cities.

How useful such a weapon would be is debatable. Poseidon is too slow, compared to ICBMs and bombers, to be useful in a first strike or an immediate retaliatory strike. Moving at high speeds may make it so noisy that anti-submarine can detect it, and its autonomous nature brings up all the questions about armed robots (especially ones carrying mega-bombs).

<https://nationalinterest.org/blog/buzz/100-megatons-doom-how-big-threat-russias-status-6-poseidon-nuclear-torpedo-94576>

What Would Happen If Russia and NATO Went to War?

Kris Osborn, National Interest Blog, November 12, 2019

How much of a threat do Russia's emerging 5th-generation stealth fighter, nuclear arsenal, high-tech air defenses, anti-satellite weapons, conventional army and submarines pose to NATO and the U.S.?

Current tensions between Russia and NATO are leading many to carefully assess this question and examine the current state of weaponry and technological sophistication of the Russian military – with a mind to

better understanding the extent of the kinds of threats they may pose.

Naturally, Russia's military maneuvers and annexation of the Crimean Peninsula have many Pentagon analysts likely wondering about and assessing the pace of Russia's current military modernization and the relative condition of the former Cold War military giant's forces, platforms and weaponry.

Russia's conventional and nuclear arsenal is a small piece of what it was during the Cold War, yet the country is pursuing a new class of air-independent submarines, a T-50 stealth fighter jet, next-generation missiles and high-tech gear for individual ground soldiers.

<https://nationalinterest.org/blog/buzz/what-would-happen-if-russia-and-nato-went-war-95086>

Russia's Nuclear Battlecruisers: Armed with Hypersonic Anti-Ship Missiles?

David Axe, National Interest Blog, November 14, 2019

A shadowy new missile soon could arm some of the oldest, and some of the newest, ships in the Russian fleet.

The Kremlin has announced it plans to add the Zircon hypersonic anti-ship missile to at least six vessels in the Northern and Pacific Fleets.

They include both of the enormous Kirov-class nuclear battlecruisers, a destroyer, a frigate, a corvette and a guided-missile submarine. More ships could get the Zircon in coming years – assuming, of course, the new weapon works as advertised.

The Kremlin has released very little information about the Zircon. In his state-of-the-nation address in February 2019, Russian president Vladimir Putin said the Zircon missile was capable of traveling as fast as Mach 9 over a distance of more than 600 miles to strike sea and land targets.

<https://nationalinterest.org/blog/buzz/russias-nuclear-battlecruisers-armed-hypersonic-anti-ship-missiles-96236>

East Asia

North Korea

North Korea Keeps Showing the World Why Its Long-Range Artillery Is a Threat

David Axe, National Interest, November 2, 2019

North Korea on Oct. 31, 2019 fired two rockets from its new “super-large” multiple rocket launch system, potentially escalating tension between Washington and Pyongyang as talks over North Korea’s nuclear-weapons program stall out. The projectiles launched from Pyongannam-do, a province around Pyongyang, *The New York Times* reported. The munitions flew up to 230 miles before landing in waters between North Korea and Japan, the South Korean military said in a statement.

North Korea has deployed around 13,000 artillery pieces and rocket launchers along the demilitarized zone between it and South Korea. Much of Pyongyang’s artillery is in range of the Seoul Greater Metropolitan Area, which begins just 25 miles south of the DMZ. Some 10 million people live in the Greater Seoul Metropolitan Area and another 15 million reside just outside of the metropolitan area. South Korea has prepared underground shelters for Seoul’s entire population.

“Though the expanding range of North Korea’s ballistic missiles is concerning, a serious, credible threat to 25 million [Republic of Korea] citizens and approximately 150,000 U.S. citizens living in the [Greater Seoul Metropolitan Area] is also posed from its long-range artillery.” U.S. Army general Vincent Brooks, head of U.S. Forces Korea, told a U.S. Senate committee in March 2018.

<https://nationalinterest.org/blog/korea-watch/north-korea-keeps-showing-world-why-its-long-range-artillery-threat-93371>

Japan

Ministry should ensure all FOI requests are dealt with fairly

The Asahi Shimbun, November 5, 2019

The government should not use the need for diplomatic or national security secrecy as a convenient pretext for rejecting freedom-of-information requests. It should ensure that all its sections understand and respect the importance of public documents management and freedom of information. The Foreign Ministry refused freedom-of-information requests for the disclosure of some diplomatic documents that had already been made available to the public. It was an incredibly insincere response to the requests for important information in the public domain.

One of the documents the ministry refused to release to *The Asahi Shimbun* was dated July 15, 1968. The documents described discussions on how to proceed with seeking the reversion of Okinawa to Japan from the United States in negotiations with U.S. officials. The parts of the document concerning discussions on the possibility that the U.S. military might bring nuclear weapons into Japan during military emergencies were blackened out.

<http://www.asahi.com/ajw/articles/AJ201911050036.html>

The risk of entrapment by self-fulfilling nuclear prophecy

Ramesh Thakur, Japan Times, November 5, 2019

As rising nuclear threats become harder to ignore, non-nuclear states have responded in one of two ways. The majority have sought to reduce the risks of deliberate or inadvertent nuclear war by doubling down on disarmament efforts, crystallizing most eloquently in the Nuclear Ban Treaty adopted in 2017. The treaty has been signed by 79 states and ratified by 33. It will enter into force with 50 ratifications.

Meanwhile around 30 countries that depend on the U.S. nuclear umbrella for their security have become somewhat apprehensive of abandonment by their protector under U.S. President Donald Trump. Even with nuclear weapons being integrated into NATO military doctrine and deployed on the territory of non-nuclear allies, some Europeans have opened a debate on acquiring their own bomb as a hedge against the nuclear threat from a newly-emboldened Russia with the failure to effectively check its ambitions in Ukraine and the Middle East.

The more pressing potential threats for Pacific allies are China and North Korea. While Pyongyang helped to concentrate the minds of strategic analysts, publics and policymakers in Japan and South Korea two years ago, the rapidly worsening China-U.S. relations and the slow-but-steady transformation of the Pacific strategic balance to China's advantage has stirred a debate even in remote Australia. The nuclear fates of the three Pacific allies are interconnected, in that moves by any one would have cascading consequences in the other two, and possibly also in Taiwan.

<https://www.japantimes.co.jp/opinion/2019/11/05/commentary/world-commentary/the-risk-of-entrapment-by-self-fulfilling-nuclear-prophecy/#.Xd9WCVQzbIV>

N. Think Tanks

The United States' Nuclear and Non-Nuclear Weapons Are Dangerously Entangled

James M. Acton, Nicholas Blanchette, Carnegie Endowment For International Peace, November 12, 2019

In October 1973, an unreliable radiation detector could have caused the end of the world. The setting was the Yom Kippur War between Israel and a coalition of Arab states, and the superpowers found themselves being sucked into the conflict. In the war's febrile final days, the United States detected what appeared to be radiation from a Soviet freighter headed for Egypt and concluded – almost certainly incorrectly – that Moscow was transferring nuclear warheads to Cairo.

Partly in response, on Oct. 24, Washington placed its nuclear forces on a global alert for only the fourth time in history – a step it has taken only twice since. The U.S. alert prompted the Soviet Union to reportedly issue a preliminary order to begin the alerting of its own nuclear forces. This chain of events, which could have culminated in a nuclear war, provides a timely warning. The United States' ability to detect and track nuclear warheads has improved immeasurably over the last 46 years, making an exact replay of 1973 unlikely. However, growing entanglement between nuclear and nonnuclear weapons is exacerbating closely related dangers.

<https://carnegieendowment.org/2019/11/12/united-states-nuclear-and-non-nuclear-weapons-are-dangerously-entangled-pub-80338>

Cybersecurity and digital trade: What role for international trade rules?

Joshua P. Meltzer, Brookings, November 13, 2019

Trade and cybersecurity are increasingly intertwined. The global expansion of the internet and increased use of data flows by businesses and consumers – for communication, e-commerce, and as a source of information and innovation – are transforming international trade. The spread of artificial intelligence, the “internet of things,” (IoT) and cloud computing will accelerate the global connectivity of businesses, governments, and supply chains.[2] As this connectivity grows, however, so does our exposure to the risks and costs of cyberattacks. As the President's National Security Telecommunications Advisory Council observed, the U.S. is “faced with a progressively worsening cybersecurity threat environment and an ever-increasing dependence on internet technologies fundamental to public safety, economic prosperity, and overall way of life. Our national security is now inexorably linked to cybersecurity.”

<https://www.brookings.edu/research/cybersecurity-and-digital-trade-what-role-for-international-trade-rules/>

Nuclear Weapons and American Grand Strategy

Brookings, November, 2019

The world first confronted the power of nuclear weapons when the United States dropped atomic bombs on Hiroshima and Nagasaki in August 1945. The global threat of these weapons deepened in the following decades as more advanced weapons, aggressive strategies, and new nuclear powers emerged. Ever since, countless books, reports, and articles—and even a new field of academic inquiry called “security studies”—have tried to explain the so-called nuclear revolution. Francis J. Gavin argues that scholarly and popular understanding of many key issues about nuclear weapons is incomplete at best and wrong at worst. Among these important, misunderstood issues are: how nuclear deterrence works; whether nuclear coercion is effective; how and why the United States chose its nuclear strategies; why countries develop their own nuclear weapons or choose not to do so; and, most fundamentally, whether nuclear weapons make the world safer or more dangerous.

<https://www.brookings.edu/book/nuclear-weapons-and-american-grand-strategy/>

Why the Koreas Won't Achieve Peace as Long As Kim Jong Un Is in Power

Chung Min Lee, Carnegie Endowment For International Peace, November 5, 2019

In a move that was choreographed to a T, Kim Jong Un's sent his sister, Kim Yo Jong, to attend the opening ceremony of the 2018 Winter Olympic Games in Pyeongchang, South Korea — it was a masterful PR stroke. She became the rock star of the games, with worldwide media recording her every move. This was the new image that Kim wanted to convey, namely, that North Korea was more modern and savvy. The Olympic thaw was openly welcomed by South Korean President Moon Jae-In, who vested virtually his entire presidency on building a so-called peace regime between the two Koreas...

Even though Kim was reaching out Moon,

the fact remained that North Korea has 1.2 million men under arms with a growing nuclear arsenal. South Korea's 625,000-strong military was become increasingly modernized and buttressed by 28,000 U.S. Forces based in Korea. Was it possible to make real peace between the two Koreas?

<https://carnegieendowment.org/2019/11/05/why-koreas-won-t-achieve-peace-as-long-as-kim-jong-un-is-in-power-pub-80284>

The Korean Nuclear Crisis: A Game of Kim and Trump

Chatham House, November 11, 2019

North Korea presents one of the world's greatest risk of nuclear war. Past negotiations with North Korea have failed because the North Korean dictators played the big powers. And, less well known, the U.S. has consistently failed to honour its promises. Mistrust leads the U.S. to demand denuclearization before sanctions relief and, conversely, leads Kim Jong Un to demand a credible peace before he gives up nuclear weapons. Agreement is possible only if both sides abandon these maximum positions. But Trump and Kim are volatile negotiators, both are opposed by their countries' establishments. Perhaps new conditions create some hope. The U.S. and China are much more engaged in the search for a solution and South Korea is also taking strong initiatives. North Korea presents one of the world's greatest risk of nuclear war. Past negotiations with North Korea have failed because the North Korean dictators played the big powers. And, less well known, the U.S. has consistently failed to honour its promises.

<https://www.chathamhouse.org/event/korean-nuclear-crisis-game-kim-and-trump>

Getting to a New Iran Nuclear Deal

Chatham House webinar, November 4, 2019

Participants Dr Neil Quilliam, Associate Fellow, Middle East and North Africa Programme, Chatham House Dr Sanam

Vakil, Deputy Head and Senior Research Fellow, Middle East and North Africa Programme, Chatham House

Overview: Drawing on research from their new research paper *Getting to a New Deal: Guidance for Trump*, Washington, Tehran, Europe and the Middle East, Neil Quilliam and Sanam Vakil will discuss their findings regarding the prospects of a new Iran deal and present four potential negotiation outcomes. They will also contextualise regional and wider geopolitical dynamics providing worst and best-case assessments of what to expect in the months ahead.

<https://www.chathamhouse.org/event/webinar-getting-new-iran-nuclear-deal>

REMARKS: Four Paths to Arms Control Effectiveness

Jens Stoltenberg, Arms Control Association, November 2019

If arms control is to remain effective, it needs to adapt. I see four areas where we could act together: We need to preserve and implement the nuclear Nonproliferation Treaty (NPT), adapt nuclear arms control regimes to new realities, modernize the Vienna Document, and consider how to develop new rules and standards for emerging technologies, including advanced missile technology.

First, on the NPT, NATO's goal is a world without nuclear weapons, and the NPT is the only way to achieve this. The fundamental bargain of the NPT remains sound, that all states will work toward general and complete disarmament—so, a world without nuclear weapons. All states will work to prevent the spread of nuclear weapons, and all states can access the benefits of the peaceful uses of nuclear energy. For 50 years, the NPT has limited the spread of nuclear weapons.

<https://www.armscontrol.org/act/2019-11/features/remarks-four-paths-arms-control-effectiveness>

A New Nuclear Deal Begins With New START

Daryl G. Kimball, Arms Control Association, November 2019

Since 2017, the Trump administration has sought to expand the role and capability of the U.S. nuclear arsenal while withdrawing the United States from key agreements designed to reduce nuclear dangers.

In an interview Oct. 21, Trump said, "I believe that we're going to get together with Russia and with China, and we're going to work out our nuclear pact so that we don't all continue with this craziness. It's very costly and very dangerous. It's very, very dangerous. We should all get together and work out something—a cap, have a cap."

Worse yet, Trump's advisers have spurned Russian offers thus far to talk about extending the only existing treaty that does cap the deadly strategic arsenals of the world's two largest nuclear actors: the 2010 U.S.-Russian New Strategic Arms Reduction Treaty (New START), which is due to expire in February 2021.

Talks with other nuclear-armed states aimed at reducing and eventually eliminating all types of nuclear weapons are necessary and overdue. But given the Trump administration's lack of preparation and the complexity of such an endeavor, there is no possibility a new trilateral deal with Russia and China could be concluded before New START expires.

<https://www.armscontrol.org/act/2019-11/focus/new-nuclear-deal-begins-new-start>

Cyber Battles, Nuclear Outcomes? Dangerous New Pathways to Escalation

Arms Control Association, November 2019

In January 2018, details of the Trump administration's Nuclear Posture Review (NPR) were posted online by the Huffington Post, provoking widespread

alarm over what were viewed as dangerous shifts in U.S. nuclear policy. Arousing most concern was a call for the acquisition of several types of low-yield nuclear weapons, a proposal viewed by many analysts as increasing the risk of nuclear weapons use.

Another initiative incorporated in the strategy document also aroused concern: the claim that an enemy cyberattack on U.S. nuclear command, control, and communications (NC3) facilities would constitute a “non-nuclear strategic attack” of sufficient magnitude to justify the use of nuclear weapons in response.

For the past several years, the U.S. Department of Defense has been exploring how it could employ its own very robust cyberattack capabilities to compromise or destroy enemy missiles from such states as North Korea before they can be fired, a strategy sometimes called “left of launch.”³ Russia and China can assume, on this basis, that their own launch facilities are being probed for such vulnerabilities, presumably leading them to adopt escalatory policies such as those espoused in the 2018 NPR report. Wherever one looks, therefore, the links between cyberwar and nuclear war are growing.

<https://www.armscontrol.org/act/2019-11/features/cyber-battles-nuclear-outcomes-dangerous-new-pathways-escalation>

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<https://www.armscontrol.org/act/2019-11/focus/new-nuclear-deal-begins-new-start>

O. Interview

Mikhail Gorbachev tells the BBC: World in ‘colossal danger’

BBC, November 4, 2019

The former Soviet leader Mikhail Gorbachev has warned that current tension between Russia and the West is putting the world in “colossal danger” due to the threat from nuclear weapons, former President Gorbachev called for all countries to declare that nuclear weapons should be destroyed.

<https://www.bbc.com/news/av/world-europe-50265870/mikhail-gorbachev-tells-the-bbc-world-in-colossal-danger>

P. Original Reports and Documents

Update to OFAC’s list of Specially Designated Nationals (SDN) and Blocked Persons

U.S. Department of the Treasury, Office of Foreign Assets Control, November 4, 2019

The following individuals have been added to OFAC’s SDN List: BAGHERI, Mohammad (a.k.a. BAGHERI AFSHORDI, Mohammad; a.k.a. BAGHERI, Mohammed; a.k.a. BAQERI,

Mohammad Hossein), Iran; DOB 1960; POB Tehran, Iran; nationality Iran; Additional Sanctions Information - Subject to Secondary Sanctions; Gender Male (individual) [IRAN-EO13876]. DEHGHAN, Hossein (a.k.a. DEHGHAN POUDEH, Hossein), Iran; DOB 1957; POB Poudeh, Isfahan, Iran; nationality Iran; Additional Sanctions Information - Subject to Secondary Sanctions; Gender Male (individual) [IRAN-EO13876].

<https://www.treasury.gov/resource-center/sanctions/OFAC-Enforcement/Pages/20191104.aspx>

2nd, 3rd and 4th Quarter FY2018 Reports for Licensing Activities Undertaken Pursuant to the Trade Sanctions Reform and Export Enhancement Act of 2000 (TSRA)

U.S. Department of the Treasury, Office of Foreign Assets Control, November 5, 2019

OFAC has released Quarterly Reports of Licensing Activities pursuant to Section 906(b) of the Trade Sanctions Reform and Export Enhancement Act of 2000 (TSRA), covering activities undertaken by the Treasury Department's Office of Foreign Assets Control (OFAC) under Section 906(a)(1) of the TSRA from January through September 2018. Under the procedures established in its TSRA-related regulations, OFAC processes license applications requesting authorization to export agricultural commodities, medicine, and medical devices to Iran and Sudan under the specific licensing regime set forth in Section 906 of the TSRA.

<https://content.govdelivery.com/accounts/USTREAS/bulletins/26a4aa7>

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).

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